Texas Water Development Board

PROJECT FUNDING REQUEST

BOARD DATE: July 23, 2015 TEAM MANAGER: Nancy Richards

APPLICANT	West Harris County Regional Water Authority
TYPE OF ASSISTANCE	$306,200,000 Northeast Water Purification Plant Expansion $325,440,000 Second Source Transmission Line (96-inch) $180,500,000 Internal Distribution Lines
LEGAL PLEDGE	Water System Junior Lien Revenue Bonds

STAFF RECOMMENDATION

☒ Approve ☐ No Action

ACTION REQUESTED

Approve, by resolution, a request from the **West Harris County Regional Water Authority (Harris County)** for an $812,140,000 multi-year loan commitment from the State Water Implementation Revenue Fund for Texas to finance the planning, acquisition, design, and construction of the Northeast Water Purification Plant expansion, the Second Source Phase transmission line, and the internal distribution lines.

BACKGROUND

Passed by the 83rd Legislature and approved by Texas voters through a constitutional amendment the State Water Implementation Fund for Texas (SWIFT) and, the State Water Implementation Revenue Fund for Texas (SWIRFT) were created to provide affordable, alternative financing options to develop projects that are recommended water management strategies in the State Water Plan. The program, referred to as SWIFT, provides financing through low-interest loans, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects. All SWIFT projects presented for consideration have been prioritized based on criteria outlined in Texas Administrative Code Title 31 §363.1304 and are included on the prioritized list of projects approved by the Board on May 6, 2015.

Multi-Year Commitment	**Expiration Date**
$18,740,000 Series 2015	**December 31, 2015**
$37,960,000 Series 2016	**December 31, 2016**
$161,250,000 Series 2017	**December 31, 2017**
$289,680,000 Series 2018	**December 31, 2018**
$107,470,000 Series 2019	**December 31, 2019**
$62,560,000 Series 2020	**December 31, 2020**
$33,570,000 Series 2021	**December 31, 2021**
$23,880,000 Series 2022	**December 31, 2022**
$38,100,000 Series 2023	**December 31, 2023**
$24,190,000 Series 2024	**December 31, 2024**
$14,740,000 Series 2025	**December 31, 2025**

Project: Northeast Water Purification Plant Expansion
Project Number 51023
Groundwater subsidence in the greater Houston area coupled with increasing water demands requires that the West Harris County Regional Water Authority (Authority) and its four regional partners expand the existing Northeast Water Purification Plant (Plant). The Authority will co-fund the expansion of the Plant to increase the water treatment capacity from 80 million gallons per day (MGD) to 400 MGD. The expansion will provide the participants with additional surface water supply to help meet the regulatory requirements of the Harris-Galveston Subsidence District and the Fort Bend Subsidence District. The Authority will own approximately 26% of the expansion capacity. The City of Houston (City) will manage the project. The regional partners have all submitted applications for their proposed shares which will be presented for consideration in tandem with this request.

NORTHEAST WATER PURIFICATION PLANT REGIONAL PARTNERS

ENTITY	APPROXIMATE % SHARE OF PROJECT CAPACITY	AMOUNT
NORTH FORT BEND WA	**21%**	**$251,845,000**
CENTRAL HARRIS CO. RWA	**2%**	**$22,655,000**
NORTH HARRIS CO. RWA	**35%**	**$551,760,000**
WEST HARRIS CO. RWA	**26%**	**$306,200,000**
CITY OF HOUSTON	**16%**	**$183,635,000**
TOTAL	**100%**	**$1,316,095,000**

Project: Second Source Transmission Line (96-inch)
Project Number 51022
The 96-inch transmission line will start at the Northeast Water Purification Plant and bring treated surface water approximately 40 miles to the Authority and North Fort Bend Water Authority on the west side of Houston. The project also includes two large booster pump stations that will push the water along the route and will require several large meter stations. Planning and acquisition for this project is currently being funded through a $41,965,000 Texas Water Development Board (TWDB) Water Infrastructure Fund (WIF) loan.

REGIONAL PARTNERS

ENTITY	APPROXIMATE % SHARE OF PROJECT CAPACITY	AMOUNT
WEST HARRIS CO. RWA	**55%**	**$325,440,000**
NORTH FORT BEND WA	**45%**	**$304,000,000**
TOTAL	**100%**	**$629,440,000**

Project: Internal Distribution System
Project Number 51003
The Internal Distribution system project will convey treated surface water purchased from the City of Houston to the Authority's end users (Municipal Utility Districts) to comply with the Harris-Galveston Subsidence District Regulatory Plan. The distribution lines will vary in size from 12 to 60 inches. The Authority will be the sole funding participant in this project.

REGIONAL PARTNERS

ENTITY	APPROXIMATE % SHARE OF PROJECT CAPACITY	AMOUNT
WEST HARRIS CO. RWA	**100%**	**$180,500,000**
TOTAL	**100%**	**$180,500,000**

FINANCIAL

Key Issues

The SWIFT program has the ability to offer applicants multi-year funding commitments. This flexibility allows the TWDB to manage program demands while allowing the applicant to fund large projects over time. Each annual commitment installment will have its own expiration date and the applicable subsidy rate will be applied for up to five years only.

The Authority has requested a multi-year commitment over a period of eleven years, 2015 through 2025. The subsidy rate of 22% will be applied to loans closing before 2020.

Pledge and Repayment

The Authority is pledging a junior lien on the net system revenues to repay the proposed debt. The pledged revenues consist of net revenues and with additional coverage amounts transferred from the Authority's Coverage Fund. The Authority intends to review the net revenues on an annual basis to ensure that the necessary rates and charges are in place and to continue annual transfers from the Coverage Fund to repay the proposed debt service. By providing service to so many different contracting parties, the Authority has continued to increase its contract revenues over last five years.

Cost Savings

Based on a 30-year maturity schedule and current interest rates, the Authority could save approximately $2,094,356 over the life of the $18,740,000 Series 2015 loans by utilizing TWDB funding.

Internal Risk Score

Staff assigns a risk score of 2B to the Authority, which means that the applicant's repayment capacity is strong. The applicant's earnings trends and coverage ratios, while sound, may be more susceptible to adverse effects of changes in circumstances and economic conditions than the higher rated obligations. The median household income for the service area is $51,900, which is at the same level as the State average. The Authority is in good financial condition and has experienced significant growth over the years. The Authority has $18,351,626 in unrestricted funds; this represents two years of operating expenses. The Authority continues to experience positive upward trends in net income, customer growth, and net assets.

LEGAL

Key Issues

None.

Conditions

Standard SWIFT, tax-exempt and junior lien revenue conditions and further conditioned as follows:

Attachments:
1. Project Data Summary
2. Debt Service Schedule
3. Total Project Budget
4. Engineering/Environmental Review/Budget-Plant
5. Engineering/Environmental Review/Budget-96 inch Line
6. Engineering/Environmental Review/Budget-Internal Distribution System
7. Resolution (15-)
8. Water Conservation Review
9. Location Map

Authority	West Harris County Regional Water Authority	
Program	State Water Implementation Fund for Texas	
Commitment Codes	LM15030 LM16030 LM17030 LM18030 LM19030 LM20030 LM21030 LM22030 LM23030 LM24030	Project No. 51023
	LM15025 LM16025 LM17025 LM18025 LM19025 LM20025 LM21025 LM22025	Project No. 51022
	LM15004	Project No. 51003
	LM16004	
	LM17004	
	LM18004	
	LM19004	
	LM20004	
	LM21004	
	LM22004	
	LM23004	
	LM24004	
	LM25004	
Project Number	51023- Northeast Water Purification Plant 51022- Second Source Transmission Line (96-inch) 51003-Internal Distribution Lines	
Intended Use Plan Year	N/A	
Fund Number	361	
Type of Pledge	5	
Revenue Pledge Level	Second	
Legal Description	West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds Proposed Series 2015	
Tax-Exempt or Taxable	Tax-Exempt	
Refinance	No	
Outlay Requirement	No	
Disbursement Method	Escrow	
Outlay Type	N/A	

Population	461,771
Rural	No
Water Connections	Wholesale Provider
Wastewater Connections	N/A
Qualifies as Disadvantaged	No
Disadvantaged Level	9
Clean Water State Revolving Fund Type	N/A
Financial, Managerial and Technical Review Complete?	N/A
SWIFT Financing Type	Low-Interest Loan
SWIFT Characteristics	N/A
Phase Committing	P, A, D, and C
Pre-Design	Yes
Project Consistent with Water Plan	Yes
Water Conservation Plan	Adopted
Water Rights Certification Required	N/A
Internal Risk Score	2B
External Ratings	
Standard and Poor's	A+
Moody's	A1
Fitch	A+
Special Issues	Multi-year Funding Requested for SWIFT

Project Team

Team Manager	Nancy Richards
Financial Analyst	Charles R. Nichols
Engineering Reviewer	James Bronikowski
Environmental Reviewer	Jean Devlin
Attorney	Annette Mass

Attachment 2

ISSUE BEING EVALUATED
FOR ILLUSTRATION PURPOSES ONLY
West Harris County Regional Water Authority
Water System Junior Lien Revenue Bonds Proposed Series 2015

Dated Date:	**12/1/2015**	**Source:**	**SWIFT-LOW**
Delivery Date:	**12/1/2015**	**Insurance:**	**No**
First Interest:	**2/1/2016**	**Case:**	**Revenue**
First Principal	**8/1/2016**	**Admin.Fee:**	**$ -**
Last Principal:	**8/1/2045**	**Admin. Fee Payment Date:**	**N/A**
Fiscal Year End:	**12/31**		
Required Coverage:	**1.0**		

FISCAL YEAR	PROJECTED NET SYSTEM REVENUES	CURRENT DEBT SERVICE	PRINCIPAL PAYMENT	INTEREST RATE	$18,740,000 ISSUE INTEREST PAYMENT	TOTAL PAYMENT	TOTAL DEBT SERVICE	COVERAGE
2016	44,551,993	20,703,064	625,000	0.35%	307,779	932,779	21,635,843	2.06
2017	44,551,993	24,786,214	625,000	0.71%	459,457	1,084,457	25,870,671	1.72
2018	44,551,993	24,781,945	625,000	0.92%	455,000	1,080,000	25,861,945	1.72
2019	44,551,993	24,782,786	625,000	1.08%	449,282	1,074,282	25,857,068	1.72
2020	44,551,993	24,784,693	625,000	1.28%	442,538	1,067,538	25,852,231	1.72
2021	44,551,993	24,788,784	625,000	1.49%	434,525	1,059,525	25,848,309	1.72
2022	44,551,993	23,588,586	625,000	1.71%	425,194	1,050,194	24,638,780	1.81
2023	44,551,993	21,170,066	625,000	1.83%	414,500	1,039,500	22,209,566	2.01
2024	44,551,993	23,379,587	625,000	1.92%	403,075	1,028,075	24,407,662	1.83
2025	44,551,993	19,412,401	625,000	2.02%	391,063	1,016,063	20,428,464	2.18
2026	44,551,993	15,135,862	625,000	2.26%	378,419	1,003,419	16,139,281	2.76
2027	44,551,993	19,650,219	625,000	2.44%	364,325	989,325	20,639,544	2.16
2028	44,551,993	19,609,052	625,000	2.59%	349,082	974,082	20,583,134	2.16
2029	44,551,993	19,616,650	625,000	2.70%	332,894	957,894	20,574,544	2.17
2030	44,551,993	14,403,569	625,000	2.80%	316,032	941,032	15,344,601	2.90
2031	44,551,993	10,830,454	625,000	2.88%	298,544	923,544	11,753,998	3.79
2032	44,551,993	4,272,250	625,000	2.95%	280,532	905,532	5,177,782	8.60
2033	44,551,993	4,271,500	625,000	3.01%	262,088	887,088	5,158,588	8.64
2034	44,551,993	4,272,000	625,000	3.06%	243,288	868,288	5,140,288	8.67
2035	44,551,993	4,268,250	625,000	3.11%	224,163	849,163	5,117,413	8.71
2036	44,551,993	-	625,000	3.15%	204,738	829,738	829,738	53.69
2037	44,551,993	-	625,000	3.19%	185,044	810,044	810,044	55.00
2038	44,551,993	-	625,000	3.22%	165,100	790,100	790,100	56.39
2039	44,551,993	-	625,000	3.25%	144,957	769,957	769,957	57.86
2040	44,551,993	-	625,000	3.28%	124,619	749,619	749,619	59.43
2041	44,551,993	-	625,000	3.31%	104,107	729,107	729,107	61.10
2042	44,551,993	-	625,000	3.33%	83,432	708,432	708,432	62.89
2043	44,551,993	-	625,000	3.34%	62,625	687,625	687,625	64.79
2044	44,551,993	-	625,000	3.36%	41,725	666,725	666,725	66.82
2045	44,551,993	-	615,000	3.37%	20,738	635,738	635,738	70.08
		$ 348,507,932	$ 18,740,000		$ 8,368,863	$ 27,108,863	$ 375,616,795	

AVERAGE (MATURITY) LIFE	**15.16 YEARS**
NET INTEREST RATE	**2.946%**
COST SAVINGS	**$2,094,356**
AVERAGE ANNUAL REQUIREMENT	**$12,520,560**

Attachment 2

ISSUE BEING EVALUATED
FOR ILLUSTRATION PURPOSES ONLY
West Harris County Regional Water Authority
Water System Junior Lien Revenue Bonds Proposed Series 2016-2025

Dated Date:	**12/1/2016**	**Source:**	**SWIFT-LOW**
Delivery Date:	**12/1/2016**	**Insurance:**	**No**
First Interest:	**2/1/2017**	**Case:**	**Revenue**
First Principal	**8/1/2017**	**Admin.Fee:**	**$ -**
Last Principal:	**8/1/2045**	**Admin. Fee Payment Date:**	**N/A**
Fiscal Year End:	**12/31**		
Required Coverage:	**1.0**		

FISCAL YEAR	PROJECTED NET SYSTEM REVENUES	CURRENT DEBT SERVICE	PRINCIPAL PAYMENT	INTEREST RATE	$793,400,000 ISSUE INTEREST PAYMENT	TOTAL PAYMENT	TOTAL DEBT SERVICE	COVERAGE
2017	96,507,678	25,870,671	27,360,000	0.71%	13,417,722	40,777,722	66,648,393	1.45
2018	96,507,678	25,861,945	27,360,000	0.92%	19,931,506	47,291,506	73,153,451	1.32
2019	96,507,678	25,857,068	27,360,000	1.08%	19,681,162	47,041,162	72,898,230	1.32
2020	96,507,678	25,852,231	27,360,000	1.28%	19,385,947	46,745,947	72,598,178	1.33
2021	96,507,678	25,848,309	27,360,000	1.49%	19,035,192	46,395,192	72,243,501	1.34
2022	96,507,678	24,638,780	27,360,000	1.71%	18,626,707	45,986,707	70,625,487	1.37
2023	96,507,678	22,209,566	27,360,000	1.83%	18,158,578	45,518,578	67,728,144	1.42
2024	96,507,678	24,407,662	27,360,000	1.92%	17,658,437	45,018,437	69,426,099	1.39
2025	96,507,678	20,428,464	27,360,000	2.02%	17,132,578	44,492,578	64,921,042	1.49
2026	96,507,678	16,139,281	27,360,000	2.26%	16,579,085	43,939,085	60,078,366	1.61
2027	96,507,678	20,639,544	27,360,000	2.44%	15,962,117	43,322,117	63,961,661	1.51
2028	96,507,678	20,583,134	27,360,000	2.59%	15,294,806	42,654,806	63,237,940	1.53
2029	96,507,678	20,574,544	27,360,000	2.70%	14,586,182	41,946,182	62,520,726	1.54
2030	96,507,678	15,344,601	27,360,000	2.80%	13,848,010	41,208,010	56,552,611	1.71
2031	96,507,678	11,753,998	27,360,000	2.88%	13,082,477	40,442,477	52,196,475	1.85
2032	96,507,678	5,177,782	27,360,000	2.95%	12,293,962	39,653,962	44,831,744	2.15
2033	96,507,678	5,158,588	27,360,000	3.01%	11,486,568	38,846,568	44,005,156	2.19
2034	96,507,678	5,140,288	27,360,000	3.06%	10,663,579	38,023,579	43,163,867	2.24
2035	96,507,678	5,117,413	27,360,000	3.11%	9,826,363	37,186,363	42,303,776	2.28
2036	96,507,678	829,738	27,360,000	3.15%	8,976,014	36,336,014	37,165,752	2.60
2037	96,507,678	810,044	27,360,000	3.19%	8,113,901	35,473,901	36,283,945	2.66
2038	96,507,678	790,100	27,360,000	3.22%	7,240,843	34,600,843	35,390,943	2.73
2039	96,507,678	769,957	27,360,000	3.25%	6,359,030	33,719,030	34,488,987	2.80
2040	96,507,678	749,619	27,360,000	3.28%	5,468,736	32,828,736	33,578,355	2.87
2041	96,507,678	729,107	27,360,000	3.31%	4,570,781	31,930,781	32,659,888	2.95
2042	96,507,678	708,432	27,360,000	3.33%	3,665,712	31,025,712	31,734,144	3.04
2043	96,507,678	687,625	27,360,000	3.34%	2,754,898	30,114,898	30,802,523	3.13
2044	96,507,678	666,725	27,360,000	3.36%	1,839,979	29,199,979	29,866,704	3.23
2045	96,507,678	635,738	27,320,000	3.37%	921,230	28,241,230	28,876,968	3.34
		$ 353,980,954	$ 793,400,000		$ 346,562,101	$ 1,139,962,101	$ 1,493,943,055	

AVERAGE (MATURITY) LIFE	**14.67 YEARS**
NET INTEREST RATE	**2.978%**
COST SAVINGS	
AVERAGE ANNUAL REQUIREMENT	**$51,515,278**

West Harris County Regional Water Authority

Budget Items	Previous WIF Funding	TWDB Funds	Local & Other Funds	Total Cost
Construction				
Construction	$0	$350,510,476	$165,959,902	$516,470,378
Construction Total	**$0**	**$350,510,476**	**$165,959,902**	**$516,470,378**
Basic Engineering Services				
Planning	$4,030,000	$26,833	$100,167	$4,157,000
Design	$0	$31,557,571	$29,767,030	$61,324,601
Construction Engineering	$0	$14,891,435	$2,919,758	$17,811,193
Basic Engineering Services Total	**$4,030,000**	**$46,475,839**	**$32,786,955**	**$83,292,794**
Special Services				
Environmental	$6,355,000	$1,143,839	$1,215,817	$8,714,656
Permits	$100,000	$0	$0	$100,000
Surveying	$2,632,000	$0	$0	$2,632,000
Water Distribution Modeling	$135,200	$0	$0	$135,200
Administration	$225,000	$0	$0	$225,000
Special Services Total	**$9,447,200**	**$1,143,839**	**$1,215,817**	**$11,806,856**
Other				
Land/Easements Acquisition	$23,117,800	$34,345,764	$25,578,939	$83,042,503
Centerpoint Easement Fees	$0	$105,640	$394,360	$500,000
Capacity Buy-In	$0	$306,210,564	$76,598,234	$382,808,798
Other Total	**$23,117,800**	**$340,661,968**	**$102,571,533**	**$466,351,301**
Fiscal Services				
Fiscal/Legal	$5,370,000	$73,347,878	$38,220,593	$116,938,471
Fiscal Services Total	**$5,370,000**	**$73,347,878**	**$38,220,593**	**$116,938,471**
Grand Total	**$41,965,000**	**$812,140,000**	**$340,754,800**	**$1,194,859,800**

West Harris County Regional Water Authority
51023 – Northeast Water Purification Plant Expansion
Engineering and Environmental Review

Engineering:

Key Issues:

None.

Project Need/Description

Need: The need for surface water treatment facility infrastructure improvements follows the passage of rules and regulations issued by the Harris-Galveston Subsidence District (Subsidence District) to decrease groundwater usage and consequently increase surface water usage in the Subsidence District. Groundwater subsidence in the greater Houston area coupled with increasing water demands requires that the City of Houston (City) and regional partners expand the existing Northeast Water Purification Plant (NEWPP).

Project Description: The City along with the North Harris County Regional Water Authority, West Harris County Regional Water Authority, Central Harris County Regional Water Authority, and North Fort Bend Water Authority (Authorities) is seeking financial assistance for the planning, design, and construction of an expansion to the existing NEWPP that will increase the surface water intake and treated water production capacity from 80 million gallons per day (MGD) to 400 MGD. The expansion will provide the project participants with an additional surface water supply to help achieve the regulatory requirements of the Harris-Galveston Subsidence District and the Fort Bend Subsidence District that restrict groundwater usage.

Project Schedule:

Project Task	Schedule Date
Closing	12/1/2015
Engineering Feasibility Report Completion (End of Planning Phase)	12/31/2016
Start of Construction	12/31/2017
Design Phase Complete	12/31/2018
Construction Completion	1/31/2025

Environmental Section:

Key Issues:

None known at this time.

Environmental Summary:

Pursuant to the requirements of 31 Texas Administrative Code (TAC) §363.14, all financial assistance shall be conditioned to read that funding for design and construction costs for specific project elements will not be released until the environmental review has been completed and a favorable environmental determination has been issued.

Houston
51023 - Northeast Water Purification Plant Expansion

Budget Items	Houston	North Fort Bend Water Authority	Central Harris County Regional Water Authority	North Harris County Regional Water Authority	West Harris County Regional Water Authority	TWDB Total Funds
Construction						
Construction	$164,613,118	$0	$0	$336,094,399	$0	$500,707,517
Construction Total	**$164,613,118**	**$0**	**$0**	**$336,094,399**	**$0**	**$500,707,517**
Basic Engineering Services						
Planning	$1,502,421	$0	$0	$32,021,093	$0	$33,523,514
Design	$12,423,339	$0	$0	$49,074,352	$0	$61,497,691
Construciton Engineering	$4,177,947	$0	$0	$0	$0	$4,177,947
Basic Engineering Services Total	**$18,103,707**	**$0**	**$0**	**$81,095,445**	**$0**	**$99,199,152**
Contingency						
Contingency	$0	$0	$0	$68,897,149	$0	$68,897,149
Contingency Total	**$0**	**$0**	**$0**	**$68,897,149**	**$0**	**$68,897,149**
Other						
Capacity Buy-In	$0	$250,799,616	$19,256,750		$306,200,000	$576,256,366
Other Total	**$0**	**$250,799,616**	**$19,256,750**	**$0**	**$306,200,000**	**$576,256,366**
Fiscal Services						
Financial Advisor	$0	$645,886	$0	$652,142	$0	$1,298,028
Bond Counsel	$0	$399,498	$0	$1,480,000	$0	$1,879,498
Capitalized Interest	$0	$0	$0	$34,194,200	$0	$34,194,200
Fiscal/Legal	$0	$0	$3,398,250	$170,000	$0	$3,568,250
Bond Reserve Fund	$0	$0	$0	$28,488,665	$0	$28,488,665
Issuance Costs	$918,175	$0	$0	$688,000	$0	$1,606,175
Fiscal Services Total	**$918,175**	**$1,045,384**	**$3,398,250**	**$65,673,007**	**$0**	**$71,034,816**
Grand Total	**$183,635,000**	**$251,845,000**	**$22,655,000**	**$551,760,000**	**$306,200,000**	**$1,316,095,000**

West Harris County Regional Water Authority
51022 – Second Source Transmission Line (96-inch)
Engineering and Environmental Review

Engineering:

Key Issues:

None.

Project Need/Description

Need: In order to meet the Harris Galveston Subsidence District Regulatory Plan for conversion from groundwater to surface or alternative water source, the West Harris County Regional Water Authority and North Fort Bend Water Authority (Authorities) are collaborating to increase their surface water supply from the City of Houston's expanded Northeast Water Purification Plant (NEWPP). The Authorities must pipe the water from the plant and transport it 40 miles via this project to their respective constituents.

Project Description: The Authorities are seeking financial assistance for the planning, design, and construction of a transmission waterline system that will bring treated surface water approximately 40 miles from the expanded NEWPP on the east side of Houston at Lake Houston to the Authorities on the west side of Houston. The project also includes two large booster pump stations that will push the water along the route and several large meter stations.

Project Schedule:

Project Task	Schedule Date
Closing	12/1/2015
Engineering Feasibility Report Completion (End of Planning Phase)	3/31/2016
Start of Construction	1/31/2018
Design Phase Complete	7/1/2019
Construction Completion	3/31/2024

Environmental Section:

Key Issues:

None known at this time.

Environmental Summary:

Pursuant to the requirements of 31 Texas Administrative Code (TAC) §363.14, all financial assistance shall be conditioned to read that funding for acquisition, design, and construction costs for specific project elements will not be released until the environmental review has been completed and a favorable environmental determination has been issued.

West Harris County Regional Water Authority
51022 - Second Source Transmission Line (96-inch)

Budget Items	West Harris County Regional Water Authority	North Fort Bend Water Authority	Total TWDB Funds	Local & Other Funds	Total Cost
Construction					
Construction	$225,271,276	$0	$225,271,276	$39,167,091	$264,438,367
Construction Total	**$225,271,276**	**$0**	**$225,271,276**	**$39,167,091**	**$264,438,367**
Basic Engineering Services					
Planning	$26,833	$0	$26,833	$100,167	$127,000
Design	$16,840,089	$0	$16,840,089	$14,791,886	$31,631,975
Construction Engineering	$14,891,435	$0	$14,891,435	$2,919,757	$17,811,193
Basic Engineering Services Total	**$31,758,357**	**$0**	**$31,758,357**	**$17,811,810**	**$49,570,168**
Special Services					
Environmental	$14,790	$0	$14,790	$55,210	$70,000
Special Services Total	**$14,790**	**$0**	**$14,790**	**$55,210**	**$70,000**
Contingency					
Contingency	$0	$0	$0	$0	$0
Contingency Total	**$0**	**$0**	**$0**	**$0**	**$0**
Other					
Capacity Buy-In: NFBWA Share	$0	$302,013,574	$302,013,574	$0	$302,013,574
Capacity Buy-In: WHCRWA Bellaire Pump Station	$10,564	$0	$10,564	$39,436	$50,000
Land/Easements Acquistion	$20,993,941	$0	$20,993,941	$12,058,979	$33,052,920
Centerpoint Easement Fees	$105,640	$0	$105,640	$394,360	$500,000
Other Total	**$21,110,145**	**$302,013,574**	**$323,123,719**	**$12,492,775**	**$335,616,494**
Fiscal Services					
Financial Advisor	$0	$1,166,666	$1,166,666	$0	$1,166,666
Bond Counsel	$0	$819,760	$819,760	$0	$819,760
Fiscal/Legal	$47,285,432	$0	$47,285,432	$11,821,647	$59,107,080
Fiscal Services Total	**$47,285,432**	**$1,986,426**	**$49,271,858**	**$11,821,647**	**$61,093,506**
Grand Total	**$325,440,000**	**$304,000,000**	**$629,440,000**	**$81,348,533**	**$710,788,535**

West Harris County Regional Water Authority
51003 - Internal Distribution Lines
Engineering and Environmental Review

Engineering:

Key Issues:

None.

Project Need/Description

Need: West Harris County Regional Water Authority (Authority) is in the process increasing their treated surface water supply in order to meet the Harris Galveston Subsidence District regulatory plan for conversion from groundwater to surface or alternate water. Once the water is delivered to the Authority's service area boundary, it must complete the delivery by conveying the source water to the Municipal Utility Districts (MUDs) within their boundaries.

Project Description: The Authority is seeking financial assistance for the design and construction of a system of water lines to distribute surface water purchased from the City of Houston to their end user MUDs. The distribution lines vary in size from 12 to 60-inch. There are currently 46 projects identified with a total approximate length of 78 miles that must be completed prior to 2025. These new water lines extend the existing distribution system to additional entities and provide a looped network as appropriate.

Project Schedule:

Project Task	Schedule Date
Closing	12/1/2015
Start of Construction	1/1/2017
Engineering Feasibility Report Completion (End of Planning Phase)	12/31/2019
Design Phase Complete	9/30/2022
Construction Completion	12/31/2025

Environmental Section:

Key Issues:

None known at this time.

Environmental Summary:

Pursuant to the requirements of 31 Texas Administrative Code (TAC) §363.14, all financial assistance shall be conditioned to read that funding for acquisition, design, and construction costs for specific project elements will not be released until the environmental review has been completed and a favorable environmental determination has been issued.

West Harris County Regional Water Authority
51003 - Internal Distribution Lines

Budget Items	TWDB Funds	Local & Other Funds	Total Cost
Construction			
Construction	$125,239,200	$126,792,811	$252,032,011
Construction Total	**$125,239,200**	**$126,792,811**	**$252,032,011**
Basic Engineering Services			
Design	$14,717,482	$14,975,144	$29,692,626
Basic Engineering Services Total	**$14,717,482**	**$14,975,144**	**$29,692,626**
Special Services			
Environmental	$1,129,049	$1,160,607	$2,289,656
Special Services Total	**$1,129,049**	**$1,160,607**	**$2,289,656**
Other			
Land/Easements Acquisition	$13,351,823	$13,519,960	$26,871,783
Other Total	**$13,351,823**	**$13,519,960**	**$26,871,783**
Fiscal Services			
Fiscal/Legal	$26,062,446	$26,398,945	$52,461,391
Fiscal Services Total	**$26,062,446**	**$26,398,945**	**$52,461,391**
Grand Total	**$180,500,000**	**$182,847,467**	**$363,347,467**

A RESOLUTION OF THE TEXAS WATER DEVELOPMENT BOARD APPROVING AN APPLICATION FOR FINANCIAL ASSISTANCE TO WEST HARRIS COUNTY REGIONAL WATER AUTHORITY IN THE FORM OF A MULTI-YEAR COMMITMENT FROM THE STATE WATER IMPLEMENTATION REVENUE FUND FOR TEXAS THROUGH THE PROPOSED PURCHASE OF $812,140,000 WEST HARRIS COUNTY REGIONAL WATER AUTHORITY WATER SYSTEM JUNIOR LIEN REVENUE BONDS, PROPOSED SERIES 2015 THROUGH PROPOSED SERIES 2025

(15-)

WHEREAS, the West Harris County Regional Water Authority, located in Harris County, Texas, (Authority) has filed applications for financial assistance in the total amount of $812,140,000 from the State Water Implementation Revenue Fund for Texas (SWIRFT), to finance the planning, acquisition, design and construction of certain water supply projects identified below; and

WHEREAS, the Authority seeks financial assistance from the Texas Water Development Board (TWDB) in the form of a multi-year commitment through the TWDB's proposed purchase of $812,140,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2015 through Proposed Series 2025 (together with all authorizing documents "Obligations"), all as is more specifically set forth in the application and in recommendations of the Executive Administrator's staff; and

WHEREAS, the Authority has offered a pledge of system revenue as sufficient security for the repayment of the Obligations; and

WHEREAS, the commitment is approved for funding under the TWDB's pre-design funding option, and initial and future releases of funds are subject to 31 TAC § 363.1307; and

WHEREAS the commitment is approved for an interest rate subsidy through December 31, 2019; and

WHEREAS, interest rate subsidies are available to the Authority at the following levels: 35.5% for loans of a term of 20 years, 27% for loans of a term of 25 years, and 22% for loans of a term of 30 years. The interest rate subsidy applicable to each proposed series will be set through each financing agreement executed between the TWDB and the Authority, pursuant to this Resolution; and

WHEREAS, the TWDB hereby finds:

1. that the application and assistance applied for meet the requirements of Texas Water Code, Chapter 15, Subchapters G and H and 31 TAC Chapter 363, Subchapters A and M;

2. that the project is a recommended water management strategy in the State Water Plan adopted pursuant to Texas Water Code § 16.051, in accordance with Texas Water Code § 15.474(a);

3. that a water conservation plan, if required by Texas Water Code § 11.1271, has been submitted and implemented in accordance with 31 TAC § 363.1309(b)(1);

4. that the Authority satisfactorily completed any request by the Executive Administrator or a regional planning group for information relevant to the project, including a water infrastructure financing survey under Texas Water Code § 16.053(q), in accordance with 31 TAC § 363.1309(b)(2);

5. that the current water audit, if required by Texas Water Code § 16.0121, has been completed by the Authority and filed with the TWDB in accordance with 31 TAC § 358.6; and

6. that the Authority has acknowledged its legal obligation to comply with any applicable requirements of federal law relating to contracting with disadvantaged business enterprises, and any applicable state law relating to contracting with historically underutilized businesses, in accordance with Texas Water Code § 15.435(h) and 31 TAC § 363.1309(b)(3).

NOW THEREFORE, based on these findings, the TWDB resolves as follows:

A commitment is made by the TWDB to West Harris County Regional Water Authority for financial assistance in the amount of $812,140,000 from the State Water Implementation Revenue Fund for Texas, to be evidenced by the TWDB's proposed purchase of West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, in accordance with the schedule proposed below:

a) $18,740,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2015 to expire on December 31, 2015; and
b) $37,960,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2016, to expire on December 31, 2016; and
c) $161,250,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2017, to expire on December 31, 2017; and
d) $289,680,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2018, to expire on December 31, 2018; and
e) $107,470,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2019, to expire on December 31, 2019; and
f) $62,560,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2020, to expire on December 31, 2020; and
g) $33,570,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2021, to expire on December 31, 2021; and
h) $23,880,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2022, to expire on December 31, 2022; and
i) $38,100,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2023, to expire on December 31, 2023; and
j) $24,190,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2024, to expire on December 31, 2024; and
k) $14,740,000 West Harris County Regional Water Authority Water System Junior Lien Revenue Bonds, Proposed Series 2025, to expire on December 31, 2025.

Further, the commitment described above consists of the following Projects:

a) Project No. 51023 (Northeast Water Purification Plant Expansion) in the amount of $306,200,000;
b) Project No. 51022 (Second Source Transmission Line) in the amount of $325,440,000; and
c) Project No. 51003 (Internal Distribution Lines) in the amount of $180,500,000.

Such commitment is conditioned as follows:

Standard Conditions:

1. this commitment is contingent on a future sale of bonds by the TWDB or on the availability of funds on hand;

2. this commitment is contingent upon the issuance of a written approving opinion of the Attorney General of the State of Texas stating that all of the requirements of the laws under which said Obligations were issued have been complied with; that said Obligations were issued in conformity with the Constitution and laws of the State of Texas; and that said Obligations are valid and binding obligations of the Authority;

3. this commitment is contingent upon the Authority's continued compliance with all applicable laws, rules, policies and guidance as these may be amended from time to time to adapt to a change in law, in circumstances, or any other legal requirement;

4. this commitment is contingent upon the Authority executing a separate financing agreement, approved as to form and substance by the Executive Administrator, and submitting that executed agreement to the TWDB consistent with the terms and conditions described in the financing agreement;

5. the Authority shall use a paying agent/registrar in accordance with 31 TAC Section 363.42(c)(2), and shall require the paying agent/registrar to provide a copy, to the TWDB and to the TWDB's designated Trustee, of all receipts documenting debt service payments.

The Following Conditions Must Be Included in the Obligations:

6. the Obligations must provide that the Obligations can be called for early redemption only in inverse order of maturity, and on any date beginning on or after the first interest payment date which is 10 years from the dated date of the Obligations, at a redemption price of par, together with accrued interest to the date fixed for redemption;

7. the Obligations must include a provision wherein the Authority, or an obligated person for whom financial or operating data is presented to the TWDB in the application for financial assistance either individually or in combination with other issuers of the Authority's Obligations or obligated persons, will, at a minimum, regardless of the amount of the Obligations, covenant to comply with requirements for continuing disclosure on an ongoing basis substantially in the manner required by Securities and Exchange Commission (SEC) in 17 CFR § 240.15c2-12 (Rule 15c2-12) and determined as if the TWDB were a Participating Underwriter within the meaning of such rule, such continuing disclosure undertaking being for the benefit of the TWDB and the

beneficial owners of the Authority's Obligations, if the TWDB sells or otherwise transfers such Obligations, and the beneficial owners of the TWDB's bonds if the Authority is an obligated person with respect to such bonds under SEC Rule 15c2-12;

8. the Obligations must contain a provision requiring the Authority to collect sufficient rates and charges to produce system revenues in an amount necessary to meet the debt service requirements of all outstanding obligations and to maintain the funds established and required by the Obligations;

9. the Obligations must include a provision requiring the Authority to use any loan proceeds from the Obligations that are determined to be surplus proceeds remaining after completion of the project for the following purposes as approved by the Executive Administrator: (1) deposit into the Interest and Sinking Fund or other debt service account for the payment of interest or principal on the Obligations owned by the TWDB; or (2) eligible costs for the project as authorized by the Executive Administrator;

10. the Obligations must contain a provision that the TWDB may exercise all remedies available to it in law or equity, and any provision of the Obligations that restricts or limits the TWDB's full exercise of these remedies shall be of no force and effect;

11. loan proceeds are public funds and, as such, the Obligations must include a provision requiring that these proceeds shall be held at a designated state depository institution or other properly chartered and authorized institution in accordance with the Public Funds Investment Act, Government Code, Chapter 2256, and the Public Funds Collateral Act, Government Code, Chapter 2257;

12. loan proceeds shall not be used by the Authority when sampling, testing, removing or disposing of contaminated soils and/or media at the project site. The Obligations shall include an environmental indemnification provision wherein the Authority agrees to indemnify, hold harmless and protect the TWDB from any and all claims, causes of action or damages to the person or property of third parties arising from the sampling, analysis, transport, storage, treatment, recycling and disposition of any contaminated sewage sludge, contaminated sediments and/or contaminated media that may be generated by the Authority, its contractors, consultants, agents, officials and employees as a result of activities relating to the project to the extent permitted by law;

13. the Obligations must include a provision stating that the Authority shall report to the TWDB the amounts of project funds, if any, that were used to compensate historically underutilized businesses that worked on the project, in accordance with 31 TAC § 363.1312;

14. the Obligations must contain a provision that the TWDB will purchase the Obligations, acting through the TWDB's designated Trustee, and the Obligations shall be registered in the name of Cede & Co. and closed in book-entry form in accordance with 31 TAC Section 363.42(c)(1);

15. the Obligations must include a provision prohibiting the Authority from using the proceeds of this loan in a manner that would cause the Obligations to become "private activity bonds" within

the meaning of § 141 of the Internal Revenue Code of amended (Code) and the Treasury Regulations promulgated thereunder (Regulations);

16. the Obligations must provide that no portion of the proceeds of the loan will be used, directly or indirectly, in a manner that would cause the Obligations to be "arbitrage bonds" within the meaning of § 148(a) of the Code and Regulations, including to acquire or to replace funds which were used, directly or indirectly, to acquire Nonpurpose Investments (as defined in the Code and Regulations) which produce a yield materially higher than the yield on the TWDB's bonds that are issued to provide financing for the loan (Source Series Bonds), other than Nonpurpose Investments acquired with:

    a. proceeds of the TWDB's Source Series Bonds invested for a reasonable temporary period of up to three (3) years after the issue date of the Source Series Bonds until such proceeds are needed for the facilities to be financed;

    b. amounts invested in a bona fide debt service fund, within the meaning of § 1.148-1(b) of the Regulations; and

    c. amounts deposited in any reasonably required reserve or replacement fund to the extent such amounts do not exceed the least of maximum annual debt service on the Obligations, 125% of average annual debt service on the Obligations, or 10 percent of the stated principal amount (or, in the case of a discount, the issue price) of the Obligations;

17. the Obligations must include a provision requiring the Authority take all necessary steps to comply with the requirement that certain amounts earned on the investment of gross proceeds of the Obligations be rebated to the federal government in order to satisfy the requirements of § 148 of the Code. The Obligations must provide that the Authority will:

    a. account for all Gross Proceeds, as defined in the Code and Regulations, (including all receipts, expenditures and investments thereof) on its books of account separately and apart from all other funds (and receipts, expenditures and investments thereof) and retain all records of such accounting for at least six years after the final Computation Date. The Authority may, however, to the extent permitted by law, commingle Gross Proceeds of its loan with other money of the Authority, provided that the Authority separately accounts for each receipt and expenditure of such Gross Proceeds and the obligations acquired therewith;

    b. calculate the Rebate Amount, as defined in the Code and Regulations, with respect to its loan, not less frequently than each Computation Date, in accordance with rules set forth in § 148(f) of the Code, § 1.148-3 of the Regulations, and the rulings thereunder. The Authority shall maintain a copy of such calculations for at least six years after the final Computation Date;

    c. as additional consideration for the making of the loan, and in order to induce the making of the loan by measures designed to ensure the excludability of the interest on the TWDB's Source Series Bonds from the gross income of the owners thereof for federal

income tax purposes, pay to the United States the amount described in paragraph (b) above within 30 days after each Computation Date;

d. exercise reasonable diligence to assure that no errors are made in the calculations required by paragraph (b) and, if such error is made, to discover and promptly to correct such error within a reasonable amount of time thereafter, including payment to the United States of any interest and any penalty required by the Regulations;

18. the Obligations must include a provision prohibiting the Authority from taking any action that would cause the interest on the Obligations to be includable in gross income for federal income tax purposes;

19. the Obligations must provide that the Authority will not cause or permit the Obligations to be treated as "federally guaranteed" obligations within the meaning of § 149(b) of the Code;

20. the Obligations must provide that neither the Authority nor a related party thereto will acquire any of the TWDB's Source Series Bonds in an amount related to the amount of the Obligations to be acquired from the Authority by the TWDB;

Revenue Pledge

21. the Obligations must require the accumulation of a reserve fund of no less than average annual debt service requirements, to be funded with bond proceeds or accumulated in equal monthly installments over the initial sixty (60) months following the issuance of the Obligations;

22. if the Authority has existing revenue obligations with the same pledge of security as the proposed Obligations that will remain outstanding after any loan(s) made by the TWDB pursuant to this commitment, the Obligations must contain a provision providing that the lien or liens securing the Obligations issued to the TWDB shall be at least on a parity with lien or liens securing such outstanding obligations;

23. the Obligations must contain a provision providing that no additional Series of Junior Lien Bonds or Junior Lien Notes shall be issued, nor shall any Junior Lien Obligations be incurred, unless there shall have been submitted to the Trustee:

(a) Historical Pledged Revenues. Pledged Revenues for the most recent Fiscal Year or 12 consecutive months out of the most recent 18 months, plus the amount in the Improvement Fund on the last Business Day for the most recent Fiscal Year, shall be certified by an independent certified public accountant for the Authority to have been at least equal to 110% of Maximum Annual Debt Service Requirements on all outstanding Parity Bonds, Parity Notes and Parity Obligations and on all Junior Lien Bonds, Junior Lien Notes and Junior Lien Obligations that will be outstanding after the issuance of such Series of Junior Lien Bonds or Junior Lien Notes or incurrence of such Junior Lien Obligations; or

(b) Proforma Pledged Revenues. The certification of an independent nationally recognized rate consultant to the effect that, based upon a recent increase in rates or charges imposed by the Authority, the Pledged Revenues of the Authority for the prior Fiscal Year or 12

consecutive months out of the most recent 18 months, calculated as if such increase in rates or charges had been effective during such a period, plus the amount in the Improvement Fund on the last Business Day for the most recent Fiscal Year, would have produced Pledged Revenues equal to at least 120% of Maximum Annual Debt Service Requirements for outstanding Parity Bonds, Parity Notes and Parity Obligations and for Junior Lien Bonds, Junior Lien Notes and Junior Lien Obligations that will be outstanding after the issuance of such Series of Junior Lien Bonds or Junior Lien Notes or incurrence of such Junior Lien Obligations; or

(c) Projected Pledged Revenues. The certification of an independent nationally recognized rate consultant to the effect that, based on the certification of an independent professional engineer described below, the projected Pledged Revenues for the first future Fiscal Year for which interest has not been capitalized for the Series of Junior Lien Bonds or Junior Lien Notes to be issued or Junior Lien Obligations to be incurred, plus the amount in the Improvement Fund on the last Business Day for the most recent Fiscal Year, will be at least equal to 120% of Maximum Annual Debt Service Requirements on all outstanding Parity Bonds, Parity Notes and Parity Obligations and on all Junior Lien Bonds, Junior Lien Notes and Junior Lien Obligations that will be outstanding after the issuance of such Series of Junior Lien Bonds or Junior Lien Notes or incurrence of such Junior Lien Obligations. Such certification may rely on the certification of an independent professional engineer that forecasts the levels of (i) water pumpage within the Authority and within its Groundwater Reduction Plan during a forecast period; and/or (ii) water sales by the Authority during a forecast period based upon such engineer's evaluation of the Authority's anticipated construction and placement into service of components of the System that will permit the Authority to increase its sales of water during the forecast period.

Conditions to Close or for Release of Funds:

24. prior to closing, the Authority shall submit documentation evidencing the adoption and implementation of sufficient system rates and charges or, if applicable, the levy of an interest and sinking tax rate sufficient for the repayment of all system debt service requirements;

25. prior to closing, and if not previously provided with the application, the Authority shall submit executed contracts for engineering, and, if applicable, financial advisor and bond counsel contracts, for the project that are satisfactory to the Executive Administrator. Fees to be reimbursed under the contracts must be reasonable in relation to the services performed, reflected in the contract, and acceptable to the Executive Administrator;

26. prior to closing, when any portion of financial assistance is to be held in escrow or in trust, the Authority shall execute an escrow agreement or trust agreement, approved as to form and substance by the Executive Administrator, and shall submit that executed agreement to the TWDB;

27. prior to release of funds for construction, the Authority must provide the TWDB with evidence that the necessary acquisitions of land, leases, easements, and rights-of-way have been completed, or that the Authority has the legal authority necessary to complete the acquisitions;

28. prior to release of funds for acquisition, design or construction for specific project elements, the environmental review must be completed and a favorable environmental finding must have been issued;

29. prior to closing, the Authority's bond counsel must prepare a written opinion that states that the interest on the Obligations is excludable from gross income or is exempt from federal income taxation. Bond counsel may rely on covenants and representations of the Authority when rendering this opinion;

30. prior to closing, the Authority's bond counsel must prepare a written opinion that also states that the Obligations are not "private activity bonds." Bond counsel may rely on covenants and representations of the Authority when rendering this opinion;

31. the transcript must include a No Arbitrage Certificate or similar Federal Tax Certificate setting forth the Authority's reasonable expectations regarding the use, expenditure and investment of the proceeds of the Obligations; and

32. the transcript must include evidence that the information reporting requirements of § 149(e) of the Code will be satisfied. This requirement may be satisfied by filing an IRS Form 8038 with the Internal Revenue Service. In addition, the applicable completed IRS Form 8038 or other evidence that the information reporting requirements of § 149(e) have been satisfied must be provided to the Executive Administrator within fourteen (14) days of closing. The Executive Administrator may withhold the release of funds for failure to comply.

APPROVED and ordered of record this, the 23rd day of July, 2015**.**

TEXAS WATER DEVELOPMENT BOARD

_____

Bech K. Bruun, Chairman

DATE SIGNED: _____

ATTEST:

_____

Kevin Patteson
Executive Administrator

WATER CONSERVATION REVIEW

Entity: West Harris County Regional Water Authority Review date: June 2015

WATER CONSERVATION PLAN DATE: April 2014 ☐ **Approvable** ☑ **Adopted**

	Total GPCD	Residential GPCD	Water Loss GPCD	Water Loss Percent
Baseline	147	NA	3	2
5-year Goal	146	NA	3	2
10-year Goal	144	NA	3	2

WATER LOSS AUDIT YEAR: NA

Total water loss (GPCD): NA Total water loss (percent): NA Wholesale Water ☐
Total no. of connections: NA Length of mains (miles): NA Connections per mile: NA

If > 16 connections per mile and > 3,000 connections, Infrastructure Leakage Index (*ILI*): NA

WATER LOSS THRESHOLDS:

	Apparent Loss Gallons per connection per day	Real Loss Gallons per mile per day	Real Loss Gallons per connection per day	Apparent Threshold Gallons per connection per day	Real Threshold Gallons per mile per day	Real Threshold Gallons per connection per day
If population ≤ 10K, connections/mile < 32 :	NA	NA	NA	NA	NA	NA
If population ≤ 10K, connections/mile ≥ 32 :	NA	NA	NA	NA	NA	NA
If population > 10K :	NA	NA	NA	NA	NA	NA

Does the applicant meet Water Loss Threshold requirements? Yes ☐ No ☐ NA ☑

ADDITIONAL INFORMATION:

The Authority's water conservation plan maintains that the Authority will install master meters and establish a program for testing, repairing, and periodically replacing meters no later than May 1, 2015, if not already implemented. The Authority's water loss program also includes such measures as periodic visual inspections, monthly or annual audits of system, and investigation of abandoned services. The Authority requires its wholesale customers to adopt water conservation plans. The Authority plans to implement an educational program that will share water conservation information through annual direct distributions to all their wholesale customers and may also conduct informational programs at schools in the Authority's service area and for residents of the Authority in a public place, as well as through newspaper articles or a newsletter for general circulation within the service area.

STAFF NOTES AND RECOMMENDATIONS:

The Authority is not required to submit a water loss audit because it is a wholesale provider.

The 5 and 10-year goals above are the Authority's effort to work with its wholesale customers to reduce water loss and municipal water use.

DEFINITIONS

Adopted refers to a water conservation plan that meets the minimum requirements of the water conservation plan rules and has been formally approved and adopted by the applicant's governing body.

Apparent loss refers to unauthorized consumption, meter inaccuracy, billing adjustments, and waivers.

Approvable refers to a water conservation plan that substantially meets the minimum requirements of the water conservation plan rules but has not yet been adopted by the applicant's governing body.

Best Management Practices are voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

GPCD means gallons per capita per day.

Infrastructure Leakage Index (ILI) is the current annual real loss divided by the unavoidable annual real loss (theoretical minimum real loss) and only applies to utilities with more than 5,000 connections, average pressure greater than 35 psi, and a connection density of more than 32 connections per mile. The **ILI** is recommended to be less than 3 if water resources are greatly limited and difficult to develop, between 3 and 5 if water resources are adequate to meet long-term needs but water conservation is included in long-term water planning, and between 5 and 8 if water resources are plentiful, reliable, and easily extracted. The **ILI** is recommended as a bench marking tool, but until there is increased data validity of the variables used in the calculation, the **ILI** should be viewed with care.

NA means not applicable.

Produced water is the total amount of water purchased or produced by the utility.

Real loss comes from main breaks and leaks, storage tank overflows, customer service line breaks, and leaks.

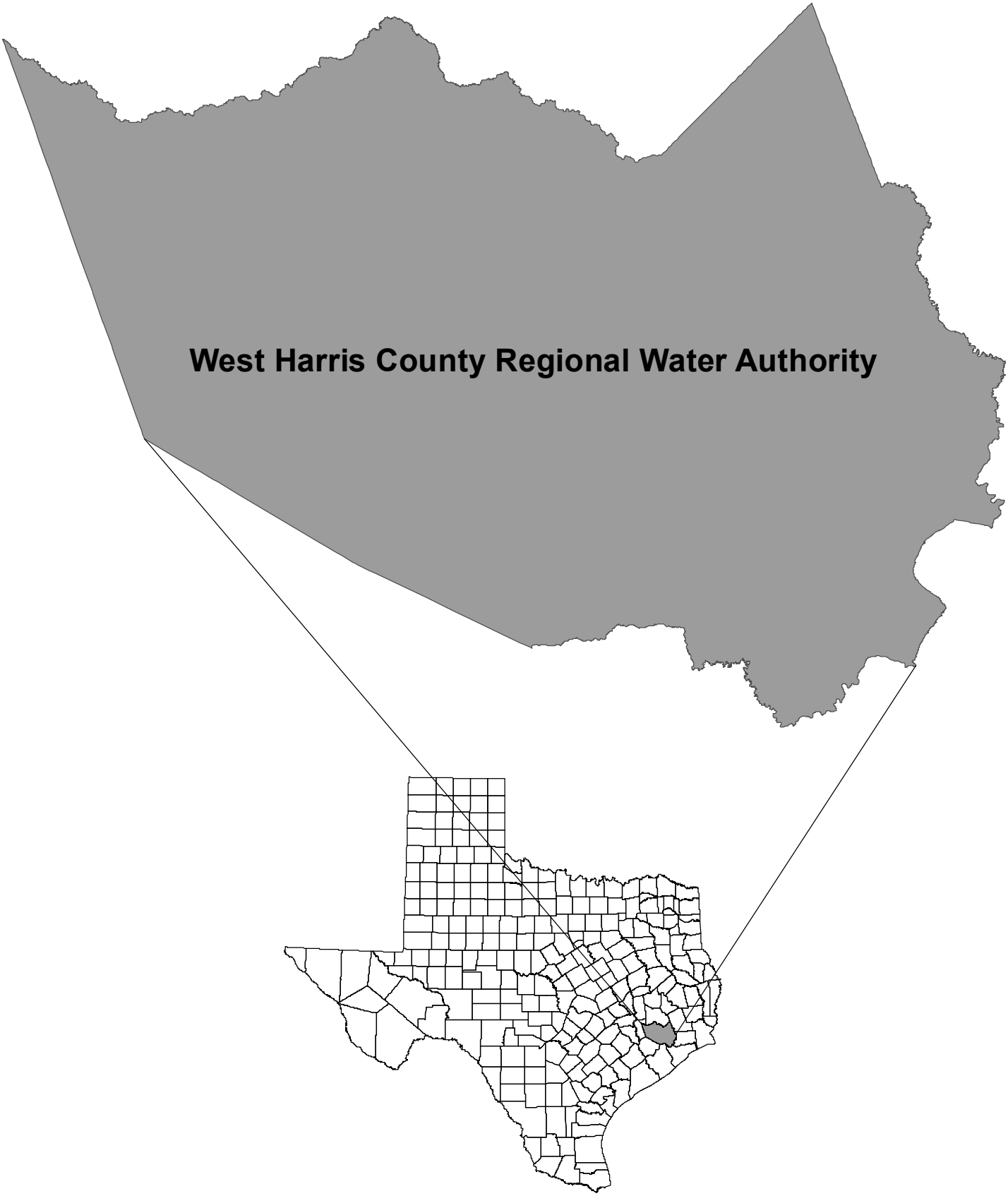
Residential GPCD is the amount of water per capita used solely for residential use and ideally includes both single and multi-family customer use.

Total baseline GPCD is the amount of all water purchased or produced by the utility divided by the service area population and then divided by 365.

Total water loss is the sum of the apparent and real water losses.

Water loss is the difference between the input volume and the authorized consumption within a water system. Water Loss consists of real losses and apparent losses.

Water Loss Thresholds are levels of real and apparent water loss determined by the size and connection density of a retail public utility, at or above which a utility receiving financial assistance from the Texas Water Development Board must use a portion of that financial assistance to mitigate the utility's system water loss.

ATTACHMENT 9

West Harris County Regional Water Authority, Harris County