STATE OF TEXAS
THOMAS C. GOOCH
50668
LICENSED
PROFESSIONAL ENGINEER

11/20/2015

Thomas C. Gooch

Thomas C. Gooch, P.E.
Freese and Nichols, Inc.
Texas Registered Firm F-2144

AMERICAN INSTITUTE OF HYDROLOGY
Certificate Number
4017
Amy D.
Kaarlela
Hydrologist

Amy D Kaarlela 11/20/15

Amy D. Kaarlela, P.H.
Freese and Nichols, Inc.
Texas Registered Firm F-2144

STATE OF TEXAS
PRESTON C. DILLARD
79277
REGISTERED
PROFESSIONAL ENGINEER

11/19/15

Preston C. Dillard, P.E.
Alan Plummer Associates, Inc.
Texas Registered Firm F-13

STATE OF TEXAS
S. CH... SCHMID
LICENSED
PROFESSIONAL ENGINEER

11-19-15

Christopher Schmid, P.E.
CP&Y, Inc.
Texas Registered Firm F-1741

2016 Region C Water Plan

December 2015

Prepared for

Region C Water Planning Group

Freese and Nichols, Inc.

Alan Plummer Associates, Inc.

CP&Y, Inc.

Cooksey Communications, Inc.

Region C
Water Planning Group

Freese and Nichols, Inc.
Alan Plummer Associates, Inc.
CP&Y, Inc.
Cooksey Communications, Inc.

Volume III
Appendices Q – Z

Table of Contents

Appendix Q

APPENDIX Q

COST ESTIMATES

Table of Tables

Q.1 Introduction

The evaluation of water management strategies requires developing cost estimates. Guidance for cost estimates may be found in the TWDB's "First Amended General Guidelines for Regional Water Plan Development (2012-2017)", Section 5.1.2. Costs are to be reported in September 2013 dollars.

Since the completion of the 2012 State Water Plan, the TWDB developed a costing tool to aid in the development of cost estimates included in the regional water plans. That costing tool was used as the basis for the development of costs for the 2016 Region C Plan. Many of the costs were completed using the costing tool, however there were some exceptions which are discussed below. For the costs developed outside of the costing tool, the assumptions within the tool were utilized producing similar results to using the tool. Explanations of these exceptions were provided to the TWDB in a memorandum dated February 11, 2013. Below is a summary of information in that memorandum:

- Cost estimates where more detailed information was provided were completed outside of the costing tool. Because of the wide-range of line items provided in more detailed costs, it was more efficient to develop these costs outside of the costing tool.
- Cost estimates for new water treatment plants or water treatment plants are all presented within one spreadsheet. The costing tool was used to develop the cost estimates, but to create a more concise report, the results are presented in a single table and individual costing tool outputs for each plant are not included in the plan.
- In regards to conservation costs, in previous planning rounds, Region C has used a complex spreadsheet tool to determine conservation costs. This spreadsheet tool is much more detailed than the conservation portion of the current costing tool. For this reason, the costing tool was not used to develop costs for conservation.
- In was discovered that the costing tool did not accounting for pumping groundwater to the ground level. For this reason, all strategies involving groundwater wells were developed outside of the costing tool.
- Lastly, the costing tool did not have the capability for multiple owner WMSs. Strategies with multiple owners were not computed in the costing tool.

Within the costing tool provided by the TWDB, standard unit costs for installed pipe, pump stations, standard treatment facilities, and well fields were developed. The unit costs **do not** include engineering, contingency, financial and legal services, costs for land and rights-of-way, permits, environmental and archeological studies, or mitigation. The costs for these items are determined separately in the cost tables.

It is important that when comparing alternatives that the cost estimates be similar and include similar items. If an existing reliable cost estimate was available for a project it was used where appropriate. All cost estimates must meet the requirements set forth in the TWDB's "First Amended General Guidelines for Regional Water Plan Development (2012-2017)".

The cost estimates have two components:

- Initial capital costs, including total construction cost of facilities, engineering and legal contingencies, environmental and archaeology studies and mitigation, land acquisition and surveying, and interest incurred during construction (4.0% annual interest rate less a 1.0% rate of return on investment of unspent funds).
- Average annual costs, including annual operation and maintenance costs, pumping energy costs, purchase of water and debt service.

TWDB does not require the consultant to determine life cycle or present value analysis. For most situations annual costs are sufficient for comparison purposes and a life-cycle analysis is not required.

Q.2 Assumptions for Capital Costs

Q.2.1 Conveyance Systems

Standard pipeline costs used for these cost estimates are shown in Table Q-1. Pump station costs are based on required horsepower capacity and are listed in Table Q-2. The power capacity was determined from the hydraulic analyses included in the TWDB costing tool (or detailed analysis if available). Pipelines and pump stations are to be sized for peak pumping capacity. Pump efficiency is assumed to be 70 percent.

A peaking factor of two times the average demand was used for strategies when the water is pumped directly to a water treatment plant (or historical peaking factor, if available). A peaking factor of 1.2 to 1.5 was used if there are additional water sources and/or the water is transported to a terminal storage facility.

Ground storage is to be provided at each booster pump station along the transmission line unless there is a more detailed design. Ground storage tanks should provide sufficient storage for 2.5 to 4 hours of pumping at peak capacity. Costs for ground storage are shown in Table Q-3. Covered storage tanks are used for all strategies transporting treated water.

Costs for elevated storage tanks are shown in Table Q-4.

When a pipeline discharges into a reservoir or river, use project-specific discharge structure costs if available. If no project-specific information is available, the costs in Table Q-5 may be used to estimate discharge structure costs.

Q.2.2 Water Treatment Plants

Water treatment plants are to be sized for peak day capacity (assume peaking factor of 2 if no specific data is available). Costs estimated include six different treatment levels of varying degree. These levels are groundwater chlorine disinfection, iron and manganese removal, simple filtration, construction of a new conventional treatment plant, expansion of a conventional treatment plant, brackish desalination, and seawater desalination. Costs,are also based upon a total dissolved solids (TDS) factor that will increase or decrease the cost of treatment accordingly. These costs are summarized in Table Q-6**Error! Reference source not found.**. All treatment plants are to be sized for finished water capacity.

Direct reuse refers to the introduction of reclaimed water directly from a water reclamation plant to a distribution system. The TWDB costing tool currently does not have a direct reuse treatment plant improvements option, therefore the following assumptions were made.

For direct non-potable reuse, it was assumed that the cost of an iron and manganese removal plant would be an appropriate approximation of the improvements that would be needed at the wastewater treatment plant (WWTP). This cost was further refined by assuming that only upgrades to an existing facility would be required, and not construction of an entirely new plant. It was also assumed that the pump station was included in the WWTP improvements.

For direct potable reuse, it was assumed that due to the high level of treatment that is required, the wastewater treatment plant improvements cost would be equivalent to 75 percent of a conventional treatment plant expansion plus brackish desalination treatment improvements. The 25 percent discount was given to Level 3 Treatment in order to alleviate any redundancy being assumed by the costing tool.

Q.2.3 New Groundwater Wells

Cost estimates required for water management strategies that include additional wells or well fields were not determined through the TWDB costing tool. It was discovered that the TWDB costing tool did not account for pumping the water to ground level, so it was decided to complete these cost estimates outside of the costing tool. However, the unit costs associated with wells were taken from the costing tool and used outside of the tool. These costs are shown in Table Q-7. It was assumed that all wells would be constructed on property already owned by the WUG, so no land purchase costs were included. This assumption was based on the fact that most of the WUGs with strategies for new wells already have wells in the same aquifer in which they plan to drill additional wells. The two exceptions to this are Blooming Grove and Mountain Peak SUD. Blooming Grove provided a capital cost which was used in place of the costing tool estimates and Mountain Peak SUD was in the engineering phase for new wells in 2013 and it was assumed, because of this stage of development, that land had already been acquired. It was also assumed that the cost to connect to the transmission system includes the cost of a chlorination facility. The costing tool differentiated the wells based upon purpose. The categories were Public Supply, Irrigation, and ASR. These cost relationships are "rule-of-thumb" in nature and are only appropriate in the broad context of the cost evaluations for the RWP process.

The unit cost relationships taken from the TWDB costing tool assume construction methods required for public water supply wells, including carbon steel surface casing and pipe-based, stainless steel, and wire-wrap screen. The cost estimates assume that wells would be gravel-packed in the screen sections and the surface casing cemented to their total depth. Estimates include the cost of drilling, completion, well development, well testing, pump, motor, motor controls, column pipe, installation and mobilization. The unit cost relationships do not include engineering, contingency, financial and legal services, land costs, or permits, thus, engineering and contingencies were added as a separate line item in the cost estimates. A more detailed cost analysis should be completed prior to developing a project.

The costs associated with conveyance systems for multi-well systems can vary widely based on the distance between wells, terrain characteristics, well production, and distance to the treatment facility. These costs should be estimated using standard engineering approaches and site-specific information. For planning purposes, these costs were estimated using the TWDB costing tool's assumptions for conveyance. It is important to note that conveyance costs were not included for point of use water user groups such as mining.

Q.2.4 New Reservoirs

Site-specific cost estimates will be made for reservoir sites. The elements required for reservoir sites are included in Table Q-8. Lake intake structures for new reservoirs will be determined on a case-by-case basis. Generally, costs for construction of such facilities prior to filling of the reservoir will be less than shown on Table Q-2 because they can be constructed on dry ground.

Q.2.5 Other Costs

Engineering, contingency, construction management, financial and legal costs are to be estimated at 30 percent of construction cost for pipelines and 35 percent of construction costs for pump stations, treatment facilities and reservoir projects in accordance with TWDB guidance.

Permitting and mitigation for transmission and treatment projects are to be estimated at $25,000 per mile. For reservoirs, mitigation and permitting costs are assumed equal to twice the land purchase cost for the conservation pool, unless site specific data are available.

Right-of-way (ROW) costs for transmission lines are estimated through costs provided by the Texas A&M University Real Estate Center (http://recenter.tamu.edu/data/rland/) which gives current land costs based on county. The ROW width is assumed to be 20 ft. If a small pipeline follows existing right-of-ways (such as highways), no additional right-of-way cost is assumed. Large pipelines will require ROW costs regardless of routing.

The costs for property acquisition for reservoirs are to be based on previous cost estimates, if available. If no site specific data is available, land costs will be based on the median rural land cost published by the Texas A&M Real Estate Center website for 2013 or a minimum of $2,000 per acre, whichever is higher.

Interest during construction is the total of interest accrued at the end of the construction period using a 5.5 percent annual interest rate on total borrowed funds, less a four percent rate of return on investment of unspent funds. This is calculated assuming that the total estimated project cost (excluding interest during construction) would be drawn down at a constant rate per month during the construction period. Factors were determined for different lengths of time for project construction. These factors were used in cost estimating and are presented in Table Q-9.

Q.3 Assumptions for Annual Costs

Annual costs were estimated using the following assumptions:

Debt service for all transmission and treatment facilities is to be annualized over 20 years, but not longer than the life of the project. Debt service for reservoirs is to be annualized over 40 years. (Note: uniform amortization periods should be used when evaluating similar projects for an entity.)

Annual interest rate for debt service is 5.5 percent.

Water purchase costs are to be based on wholesale rates reported by the selling entity when possible. In lieu of known rates, a typical regional cost for treated water and raw water will be used.

Operation and Maintenance costs are to be calculated based on the construction cost of the capital improvement. Engineering, permitting, etc. should not be included as a basis for this calculation. However, a 20 percent allowance for construction contingencies should be included for all O&M calculations. All costs developed outside of the costing tool include this 20 percent allowance. Per the "First Amended General Guidelines for Regional Water Plan Development (2012-2017)", O&M should be calculated at:

- 1 percent of the construction costs for pipelines
- 1.5 percent for dams
- 2.5 percent of the construction costs for pump stations, storage tanks, meters and SCADA systems
- O&M Costs for the varying levels of water treatment plant improvements were developed by the TWDB and are shown in Table Q-6.

Reject water disposal for treatment of brackish water is to be estimated on a case-by-case basis depending on disposal method. If no method is defined, assume a cost of $0.35 per 1,000 gallons of reject water. [This value represents a moderate cost estimate. If the water were returned to a brackish surface water source, the costs could be lower. If evaporation beds or deep well injection were used, the costs could be much higher.]

Pumping costs are to be estimated using an electricity rate of $0.09 per kilowatt hour. If local data is available, this can be used.

Q.4 Cost Estimates for Strategies

Tables Q-1 through Q-9 are unit costs used in all other cost estimates. Tables Q-10 through Q-205 include cost estimates for individual strategies.

Table Q-1
Pipeline Costs (Do Not Include ROW)[a]

Diameter	Soil		Rock	
	Rural	Urban	Rural	Urban
(Inches)	($/Foot)	($/Foot)	($/Foot)	(Feet)
6	$18	$25	$22	$30
8	$28	$39	$34	$47
10	$31	$44	$38	$53
12	$35	$48	$41	$58
14	$46	$64	$55	$78
16	$57	$81	$68	$97
18	$68	$97	$83	$116
20	$81	$112	$96	$135
24	$103	$144	$123	$172
30	$137	$191	$164	$230
36	$170	$239	$204	$287
42	$204	$286	$246	$343
48	$239	$334	$286	$401
54	$273	$382	$327	$457
60	$306	$429	$368	$515
66	$358	$501	$430	$602
72	$419	$587	$504	$705
78	$490	$687	$589	$825
84	$574	$804	$689	$965
90	$672	$941	$806	$1,129
96	$772	$1,082	$927	$1,298
102	$865	$1,211	$1,038	$1,453
108	$952	$1,332	$1,142	$1,599
114	$1,047	$1,465	$1,256	$1,758
120	$1,152	$1,612	$1,382	$1,934
132	$1,324	$1,854	$1,589	$2,225
144	$1,523	$2,132	$1,828	$2,559

Notes: a Costs developed outside of the costing tool were based on an average unit cost for rock and soil.

Table Q-2
Pump Station Costs for Transmission Systems (in millions)

	Booster PS	Lake PS with Intake[a]
Horsepower	Costs	Costs
5	$0.62	$0.67
10	$0.68	$0.72
20	$0.72	$0.77
25	$0.75	$0.82
50	$0.79	$1.03
100	$0.83	$1.55
200	$1.67	$2.06
300	$1.83	$2.58
400	$2.32	$3.09
500	$2.39	$3.61
600	$2.45	$4.12
700	$2.52	$4.64
800	$2.97	$5.15
900	$3.08	$5.67
1,000	$3.20	$6.18
2,000	$4.33	$8.66
3,000	$5.46	$10.00
4,000	$6.60	$11.34
5,000	$7.73	$12.37
6,000	$8.87	$13.40
7,000	$10.00	$14.43
8,000	$11.13	$15.46
9,000	$12.27	$16.49
10,000	$13.40	$17.52
20,000	$24.74	$28.86
30,000	$29.69	$38.13
40,000	$37.11	$48.44
50,000	$46.39	$57.72
60,000	$55.67	$66.99
70,000	$66.80	$77.30

(a) Lake PS with intake costs include intake and pump station.

Table Q-3
Costs for Ground Storage Tanks

Size (MG)	With Roof	Without Roof
0.05	$178,301	$118,524
0.1	$192,730	$174,179
0.5	$412,257	$374,123
1	$698,776	$618,386
1.5	$967,774	$674,041
2	$1,236,772	$803,902
2.5	$1,339,836	$922,426
3	$1,442,900	$1,040,950
3.5	$1,649,029	$1,154,320
4	$1,855,158	$1,267,691
5	$2,061,286	$1,463,513
6	$2,370,479	$1,752,093
7	$2,782,736	$2,009,754
8	$3,194,994	$2,370,479
10	$3,997,864	$3,071,316
12	$4,997,331	$3,916,444
14	$6,021,017	$4,740,958

Table Q-4
Costs for Elevated Storage Tanks

Size (MG)	Cost
0.5	$1,151,228
0.75	$1,408,889
1.0	$1,666,550
1.5	$2,181,871
2.0	$2,697,193
2.5	$3,212,514

Table Q-5
Discharge Structures [a]

Capacity (MGD)	Cost
0.5	$36,000
1	$37,000
2	$41,000
5	$48,000
10	$60,000
60	$156,000
80	$179,000
120	$268,000

(a) Costs not provided in costing tool. Developed by the Region C Consultants.

Table Q-6
Water Treatment Plant Capital Costs and O&M Costs

	Level 0	Level 1	Level 2	Level 3 (new)	Level 3 (exp)	Level 4	Level 5
	Chlorine Disinfection (GW)	Iron & Manganese Removal	Simple Filtration	Conventional Treatment	Conventional Treatment	Brackish Desalination	Seawater Desalination
Capacity (MGD)	Capital Cost ($)						
0.1	17,948	224,345	1,030,643	1,373,739	1,373,739	916,221	2,202,644
1	69,098	900,371	3,607,251	4,844,022	4,844,022	3,664,883	14,738,196
10	440,703	3,747,009	19,066,897	32,980,578	18,551,575	24,777,648	98,615,306
50	2,203,515	10,882,523	72,145,015	135,606,271	66,991,800	94,233,468	372,343,747
75	3,305,272	15,701,003	105,469,141	199,327,155	106,502,260	131,935,273	520,364,186
100	4,407,030	19,236,530	138,793,267	261,974,046	129,095,574	167,517,457	659,848,640
150	6,610,545	29,438,241	205,441,519	385,074,680	193,640,235	234,539,403	922,162,931
200	8,814,060	33,898,368	272,089,771	506,100,496	238,822,748	297,793,331	1,169,350,182
Capacity (MGD	O&M Cost ($)						
0.1	5,384	37,017	103,064	68,687	68,687	83,293	374,449
1	20,729	148,561	360,725	242,201	242,201	333,171	2,505,493
10	132,211	618,256	1,906,690	1,649,029	927,579	2,252,513	16,764,602
50	661,054	1,795,616	7,214,502	6,780,314	3,349,590	8,566,679	63,298,437
75	991,582	2,590,666	10,546,914	9,966,358	5,325,113	11,994,116	88,461,912
100	1,322,109	3,174,027	13,879,327	13,098,702	6,454,779	15,228,860	112,174,269
150	1,983,163	4,857,310	20,544,152	19,253,734	9,682,012	21,321,764	156,767,698
200	2,644,218	5,593,231	27,208,977	25,305,025	11,941,137	27,072,121	198,789,531

Note: Plant is sized for finished peak day capacity.

Table Q-7
Cost Elements for Water Wells

Well Depth (ft)	100	175	350	700	1000	1800
Public Supply Well Costs						
	Well Capacity (MGD)					
150	$124,138	$188,450	$321,561	$363,439	$453,177	$662,565
300	$167,510	$239,301	$382,882	$438,220	$541,419	$767,259
500	$216,867	$299,127	$454,672	$523,472	$644,618	$892,892
700	$261,736	$352,969	$518,984	$601,244	$737,347	$1,003,569
1000	$343,996	$451,681	$638,635	$743,330	$909,345	$1,209,967
1500	$481,594	$617,696	$836,059	$981,135	$1,193,515	$1,550,971
2000	$619,192	$782,216	$1,033,482	$1,218,941	$1,479,181	$1,893,471
Irrigation Well Costs						
150	$68,800	$106,190	$180,972	$207,893	$263,231	$379,891
300	$91,234	$136,103	$221,353	$261,736	$332,031	$463,646
500	$113,669	$170,502	$264,727	$320,065	$406,812	$560,863
700	$131,615	$195,928	$302,118	$369,422	$472,620	$644,618
1000	$171,998	$252,762	$379,891	$471,124	$602,740	$809,137
1500	$240,797	$349,979	$508,515	$640,130	$818,111	$1,081,342
2000	$308,100	$444,203	$637,139	$807,642	$1,034,978	$1,355,043
ASR Well Costs						
150	$137,598	$212,379	$369,422	$417,282	$520,480	$767,259
300	$180,972	$263,231	$430,742	$492,063	$608,723	$873,449
500	$230,327	$324,553	$502,532	$577,315	$713,417	$997,587
700	$276,692	$378,395	$568,341	$655,087	$804,651	$1,109,759
1000	$357,456	$477,107	$686,496	$797,173	$976,649	$1,314,662
1500	$496,550	$641,627	$883,919	$1,034,978	$1,260,819	$1,655,665
2000	$632,653	$806,146	$1,081,342	$1,272,783	$1,546,484	$1,998,165

Table Q-8
Cost Elements for Reservoir Sites

Capital Costs	Studies and Permitting
Embankment	Environmental and archeological studies
Spillway	Permitting
Outlet works	Terrestrial mitigation tracts
Site work	Engineering and contingencies
Land	Construction management
Administrative facilities	
Supplemental pumping facilities	
Flood protection	

Table Q-9
Factors for Interest during Construction

Construction Period	Factor
6 months	0.0175
12 months	0.035
18 months	0.0525
24 months	0.07
36 month construction	0.105

Table Q-10
Supply and Costs by Water User Group for Municipal Water Conservation

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Ables Springs WSC	ABLES SPRINGS WSC	1	3	5	8	12	17	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Addison	ADDISON	80	154	247	313	387	468	$476	$291	$209	$186	$166	$146	38,091	44,839	51,587	58,335	64,161	68,500	$ -
Conservation - Aledo	ALEDO	3	8	19	27	33	40	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Allen	ALLEN	660	851	1,002	1,048	1,113	1,180	$330	$256	$203	$194	$182	$172	218,040	218,040	203,040	203,040	203,040	203,040	$ -
Conservation - Alvord	ALVORD	0	1	2	3	4	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Anna	ANNA	25	48	36	64	153	276	$1,281	$764	$0	$0	$0	$0	32,034	36,668	0	0	0	0	$ -
Conservation - Annetta	ANNETTA	1	1	2	3	5	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Annetta North	ANNETTA NORTH	0	0	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Annetta South	ANNETTA SOUTH	0	0	1	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Argyle	ARGYLE	19	45	89	99	109	118	$874	$551	$388	$348	$317	$292	16,611	24,778	34,500	34,500	34,500	34,500	$ -
Conservation - Argyle WSC	ARGYLE WSC	24	38	42	45	48	51	$583	$368	$333	$311	$292	$274	13,998	13,998	13,998	13,998	13,998	13,998	$ -
Conservation - Arlington	ARLINGTON	949	1,627	2,216	2,332	2,570	2,806	$492	$300	$196	$188	$171	$157	466,438	487,288	434,790	438,590	440,106	440,336	$ -
Conservation - Athens	ATHENS	39	69	102	125	235	388	$962	$600	$438	$391	$317	$258	37,503	41,400	44,648	48,934	74,500	100,000	$ -
Conservation - Aubrey	AUBREY	2	5	8	13	20	29	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Aurora	AURORA	0	1	2	3	4	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Azle	AZLE	6	13	21	29	44	68	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Balch Springs	BALCH SPRINGS	9	19	31	44	59	76	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bardwell	BARDWELL	1	1	1	2	3	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bartonville	BARTONVILLE	11	20	27	30	33	36	$1,139	$694	$514	$463	$421	$386	12,528	13,889	13,889	13,889	13,889	13,889	$ -
Conservation - Bedford	BEDFORD	121	208	304	357	392	428	$803	$490	$348	$307	$280	$256	97,150	101,983	105,866	109,750	109,750	109,750	$ -
Conservation - Bells	BELLS	1	1	2	3	10	16	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Benbrook	BENBROOK	69	123	184	242	389	424	$821	$508	$360	$307	$250	$229	56,667	62,500	66,250	74,250	97,143	97,143	$ -
Conservation - Bethel-ash WSC	BETHEL-ASH WSC	1	2	3	4	5	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bethesda WSC	BETHESDA WSC	25	45	69	83	99	116	$999	$622	$443	$399	$360	$329	24,977	27,969	30,571	33,102	35,639	38,121	$ -
Conservation - Blackland WSC	BLACKLAND WSC	9	16	22	27	31	36	$1,034	$622	$485	$422	$394	$364	9,310	9,947	10,671	11,404	12,220	13,086	$ -
Conservation - Blooming Grove	BLOOMING GROVE	1	3	5	7	7	10	$0	$1,002	$653	$509	$554	$421	0	3,005	3,267	3,566	3,879	4,211	$ -
Conservation - Blue Mound	BLUE MOUND	1	1	2	2	3	3	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Blue Ridge	BLUE RIDGE	0	1	4	19	54	109	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bolivar WSC	BOLIVAR WSC	4	8	14	22	33	46	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bonham	BONHAM	7	17	34	61	94	138	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Boyd	BOYD	3	5	9	5	9	12	$1,275	$825	$636	$0	$0	$0	3,825	4,124	5,722	0	0	0	$ -
Conservation - Brandon-Irene WSC	BRANDON-IRENE WSC	0	0	0	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Bridgeport	BRIDGEPORT	18	34	55	83	122	166	$1,143	$740	$537	$472	$417	$377	20,575	25,170	29,542	39,167	50,833	62,500	$ -
Conservation - Bryson	BRYSON	0	1	1	1	1	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Buena Vista -	BUENA VISTA - BETHEL SUD	16	33	53	72	114	166	$783	$462	$339	$306	$272	$241	12,528	15,250	17,972	22,056	31,000	39,927	$ -
Conservation - Burleson	BURLESON	4	9	15	27	41	55	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Caddo Basin SUD	CADDO BASIN SUD	1	2	4	7	10	14	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Carrollton	CARROLLTON	315	510	693	763	838	914	$561	$351	$259	$235	$214	$196	176,763	179,176	179,179	179,182	179,185	179,188	$ -
Conservation - Cash SUD	CASH SUD	0	1	2	3	5	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Cedar Hill	CEDAR HILL	143	277	450	575	632	690	$722	$416	$282	$242	$220	$201	103,200	115,119	127,038	138,956	138,956	138,956	$ -
Conservation - Celina	CELINA	63	214	549	1,028	1,130	1,233	$906	$453	$253	$195	$177	$162	57,075	97,000	139,000	200,000	200,000	200,000	$ -
Conservation - Chatfield WSC	CHATFIELD WSC	2	3	5	6	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Chico	CHICO	3	5	7	14	19	26	$1,046	$658	$493	$448	$416	$377	3,139	3,291	3,449	6,267	7,900	9,806	$ -
Conservation - Cockrell Hill	COCKRELL HILL	1	3	4	5	9	23	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - College Mound	COLLEGE MOUND WSC	3	7	12	20	34	51	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Colleyville	COLLEYVILLE	124	212	309	355	390	426	$485	$298	$212	$189	$172	$157	60,167	63,250	65,500	67,000	67,000	67,000	$ -
Conservation - Collin County	COUNTY-OTHER, COLLIN	5	11	16	70	124	238	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Collinsville	COLLINSVILLE	1	2	3	5	9	13	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Combine	COMBINE	1	2	4	7	10	14	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Community WSC	COMMUNITY WSC	1	2	4	6	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Cooke County	COUNTY-OTHER, COOKE	4	8	12	21	31	75	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Copeville SUD	COPEVILLE SUD	1	3	5	8	17	35	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Coppell	COPPELL	147	244	334	370	407	442	$593	$367	$268	$242	$220	$202	87,190	89,430	89,430	89,430	89,430	89,430	$ -
Conservation - Copper Canyon	COPPER CANYON	4	6	9	10	13	14	$1,035	$737	$529	$514	$429	$434	4,141	4,424	4,761	5,137	5,578	6,079	$ -
Conservation - Corbet WSC	CORBET WSC	1	2	3	4	6	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Corinth	CORINTH	57	108	149	165	181	198	$1,093	$641	$465	$420	$383	$350	62,292	69,249	69,249	69,249	69,249	69,249	$ -
Conservation - Corsicana	CORSICANA	80	140	210	254	306	364	$806	$489	$346	$305	$269	$241	64,447	68,496	72,678	77,439	82,419	87,735	$ -
Conservation - Crandall	CRANDALL	11	20	35	47	51	56	$1,088	$746	$523	$469	$432	$394	11,970	14,921	18,307	22,056	22,056	22,056	$ -
Conservation - Cresson	CRESSON	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Cross Roads	CROSS ROADS	7	13	23	25	28	30	$917	$670	$462	$425	$379	$354	6,419	8,706	10,622	10,622	10,622	10,622	$ -
Conservation - Crowley	CROWLEY	8	18	33	52	83	113	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Culleoka WSC	CULLEOKA WSC	1	2	6	10	13	20	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Dallas	DALLAS	9,441	24,719	37,456	41,876	42,608	42,020	$207	$147	$132	$129	$126	$122	1,957,589	3,627,385	4,960,115	5,405,482	5,354,557	5,118,074	$ -
Conservation - Dallas County	COUNTY-OTHER, DALLAS	6	6	6	9	11	13	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Dalworthington	DALWORTHINGTON	12	20	28	32	35	40	$547	$335	$244	$218	$203	$181	6,558	6,700	6,838	6,974	7,111	7,244	$ -
Conservation - Dawson	DAWSON	0	3	5	6	7	8	$0	$985	$644	$585	$545	$518	0	2,955	3,218	3,509	3,817	4,143	$ -
Conservation - Decatur	DECATUR	31	68	122	175	226	286	$756	$464	$326	$287	$258	$229	23,438	31,555	39,757	50,252	58,358	65,500	$ -
Conservation - Denison	DENISON	88	157	236	288	372	508	$712	$426	$301	$264	$228	$197	62,691	66,924	71,097	75,888	85,000	100,000	$ -
Conservation - Denton	DENTON	385	811	1,410	1,982	2,983	3,966	$546	$320	$218	$186	$159	$144	210,145	259,811	307,317	367,893	473,473	570,694	$ -
Conservation - Denton County	COUNTY-OTHER, DENTON	13	28	46	86	174	390	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Denton County	DENTON COUNTY FWSD #10	20	68	94	105	114	124	$1,087	$636	$460	$412	$379	$349	21,740	43,250	43,250	43,250	43,250	43,250	$ -
Conservation - Denton County	DENTON COUNTY FWSD #1A	49	140	234	259	285	310	$752	$447	$299	$270	$246	$226	36,833	62,532	70,000	70,000	70,000	70,000	$ -
Conservation - Denton County	DENTON COUNTY FWSD #7	45	74	102	113	125	136	$793	$482	$350	$316	$285	$262	35,667	35,667	35,667	35,667	35,667	35,667	$ -
Conservation - Desoto	DESOTO	126	219	326	392	465	545	$830	$502	$354	$309	$273	$244	104,617	109,903	115,330	121,222	126,963	132,718	$ -
Conservation - Double Oak	DOUBLE OAK	8	12	16	18	20	22	$1,056	$704	$528	$469	$422	$384	8,444	8,444	8,444	8,444	8,444	8,444	$ -
Conservation - Duncanville	DUNCANVILLE	20	43	63	83	103	124	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - East Cedar Creek	EAST CEDAR CREEK FWSD	2	5	10	14	19	24	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - East Fork SUD	EAST FORK SUD	2	5	9	14	22	30	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Ector	ECTOR	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Edgecliff Village	EDGECLIFF VILLAGE	7	10	15	16	17	18	$1,177	$824	$549	$515	$485	$458	8,238	8,238	8,238	8,238	8,238	8,238	$ -
Conservation - Ellis County	COUNTY-OTHER, ELLIS	2	5	8	41	110	233	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Ennis	ENNIS	55	104	163	247	436	790	$1,009	$615	$429	$351	$266	$203	55,500	64,000	70,000	86,589	116,101	160,000	$ -
Conservation - Euless	EULESS	178	274	300	119	149	178	$585	$391	$357	$0	$0	$0	104,214	107,150	107,150	0	0	0	$ -
Conservation - Eustace	EUSTACE	0	1	1	3	4	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Everman	EVERMAN	2	4	5	7	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Fairfield	FAIRFIELD	2	5	7	32	50	78	$0	$0	$0	$604	$441	$353	0	0	0	19,333	22,056	27,500	$ -
Conservation - Fairview	FAIRVIEW	68	122	219	243	266	290	$539	$339	$244	$220	$201	$184	36,650	41,317	53,342	53,342	53,342	53,342	$ -
Conservation - Fannin County	COUNTY-OTHER, FANNIN	5	9	14	25	67	130	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Farmers Branch	FARMERS BRANCH	120	205	297	348	405	464	$591	$360	$258	$229	$205	$185	70,920	73,764	76,683	79,851	82,938	86,034	$ -
Conservation - Farmersville	FARMERSVILLE	3	15	23	31	38	46	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Fate	FATE	23	53	99	138	187	312	$1,175	$699	$488	$433	$369	$296	27,024	37,027	48,323	59,749	68,935	92,500	$ -
Conservation - Ferris	FERRIS	2	4	6	10	20	44	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Files Valley WSC	FILES VALLEY WSC	0	1	2	3	5	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Flo Community	FLO COMMUNITY WSC	0	0	0	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Flower Mound	FLOWER MOUND	253	501	690	765	840	916	$496	$285	$207	$187	$170	$156	125,555	143,000	143,000	143,000	143,000	143,000	$ -
Conservation - Forest Hill	FOREST HILL	5	9	14	23	36	56	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Forney	FORNEY	11	25	48	78	140	225	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Forney Lake WSC	FORNEY LAKE WSC	12	24	41	55	99	152	$1,276	$796	$572	$514	$444	$399	15,307	19,110	23,466	28,293	43,929	60,654	$ -
Conservation - Fort Worth	FORT WORTH	5,456	8,785	12,454	14,455	16,830	19,409	$341	$204	$158	$151	$141	$132	1,859,151	1,793,019	1,967,733	2,184,023	2,373,816	2,564,931	$ -
Conservation - Freestone County	COUNTY-OTHER, FREESTONE	4	8	11	19	39	93	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Frisco	FRISCO	1,522	2,438	3,572	3,793	4,016	4,238	$280	$221	$181	$171	$161	$153	426,691	539,664	647,858	647,858	647,858	647,858	$ -
Conservation - Frost	FROST	0	0	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Gainesville	GAINESVILLE	8	17	27	37	56	93	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Garland	GARLAND	505	823	375	495	617	741	$552	$346	$0	$0	$0	$0	278,875	284,806	0	0	0	0	$ -
Conservation - Garrett	GARRETT	4	10	16	24	30	78	$772	$387	$299	$244	$237	$213	3,087	3,871	4,786	5,856	7,121	16,611	$ -
Conservation - Gastonia-Scurry	GASTONIA-SCURRY SUD	2	5	10	16	34	61	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Glenn Heights	GLENN HEIGHTS	6	17	31	51	76	123	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Grand Prarie	GRAND PRAIRIE	469	884	442	585	731	877	$565	$338	$0	$0	$0	$0	265,135	298,966	0	0	0	0	$ -
Conservation - Grapevine	GRAPEVINE	247	445	622	688	756	824	$415	$245	$177	$160	$146	$133	102,414	108,930	110,000	110,000	110,000	110,000	$ -
Conservation - Grayson County	COUNTY-OTHER, GRAYSON	9	18	26	34	58	116	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Gun Barrel City	GUN BARREL CITY	3	7	11	16	31	59	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Gunter	GUNTER	1	3	6	10	16	22	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Hackberry	HACKBERRY	4	9	15	20	28	36	$937	$528	$397	$365	$317	$297	3,746	4,756	5,962	7,309	8,885	10,685	$ -
Conservation - Haltom City	HALTOM CITY	18	35	53	76	102	133	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Haslet	HASLET	2	10	18	53	81	102	$0	$572	$364	$262	$239	$216	0	5,722	6,547	13,889	19,333	22,056	$ -
Conservation - Heath	HEATH	52	170	235	260	286	312	$623	$358	$259	$234	$213	$195	32,416	60,867	60,867	60,867	60,867	60,867	$ -
Conservation - Henderson County	COUNTY-OTHER,	1	2	2	3	3	3	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Hickory Creek	HICKORY CREEK	5	8	9	14	18	22	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Hickory Creek SUD	HICKORY CREEK SUD	2	5	9	14	18	22	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - High Point WSC	HIGH POINT WSC	2	4	7	11	22	34	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Highland Park	HIGHLAND PARK	14	28	41	55	68	82	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Highland Village	HIGHLAND VILLAGE	51	86	117	130	143	156	$864	$537	$395	$355	$323	$296	44,067	46,167	46,167	46,167	46,167	46,167	$ -
Conservation - Honey Grove	HONEY GROVE	1	2	3	4	5	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Howe	HOWE	1	2	4	5	7	9	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Hudson Oaks	HUDSON OAKS	7	13	24	27	29	32	$1,079	$793	$544	$495	$461	$418	7,554	10,306	13,059	13,366	13,366	13,366	$ -
Conservation - Hurst	HURST	185	240	293	311	332	354	$486	$381	$312	$294	$276	$259	89,889	91,512	91,512	91,512	91,512	91,512	$ -
Conservation - Hutchins	HUTCHINS	3	9	18	29	43	59	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Irving	IRVING	748	1,303	1,784	1,970	2,163	2,360	$402	$246	$180	$163	$148	$136	300,627	320,417	320,417	320,417	320,417	320,417	$ -
Conservation - Italy	ITALY	1	3	5	8	12	20	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Jack County	COUNTY-OTHER, JACK	2	3	5	7	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Jacksboro	JACKSBORO	2	5	7	10	12	15	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Johnson County	JOHNSON COUNTY SUD	1	2	4	5	7	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Josephine	JOSEPHINE	1	3	5	9	11	13	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Justin	JUSTIN	2	8	17	23	29	35	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Kaufman	KAUFMAN	3	8	14	29	46	68	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Kaufman County	COUNTY-OTHER, KAUFMAN	6	12	26	53	112	186	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Keller	KELLER	163	282	387	428	471	514	$592	$359	$262	$237	$215	$197	96,495	101,310	101,310	101,310	101,310	101,310	$ -
Conservation - Kemp	KEMP	4	9	14	18	31	48	$1,250	$688	$540	$507	$448	$403	4,998	6,190	7,557	9,130	13,889	19,333	$ -
Conservation - Kennedale	KENNEDALE	5	27	46	63	72	78	$0	$938	$640	$485	$435	$401	0	25,322	29,423	30,540	31,294	31,294	$ -
Conservation - Kentucky Town	KENTUCKY TOWN WSC	1	3	5	7	12	17	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Kerens	KERENS	1	1	2	3	5	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Krugerville	KRUGERVILLE	1	2	4	6	7	9	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Krum	KRUM	16	30	52	70	92	120	$901	$595	$422	$379	$340	$304	14,420	17,844	21,939	26,512	31,240	36,479	$ -
Conservation - Ladonia	LADONIA	0	1	2	2	4	4	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lake Dallas	LAKE DALLAS	4	8	13	18	22	27	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lake Kiowa SUD	LAKE KIOWA SUD	3	5	8	11	14	17	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lake Worth	LAKE WORTH	15	27	41	52	68	100	$960	$598	$436	$398	$356	$322	14,395	16,151	17,885	20,694	24,233	32,167	$ -
Conservation - Lakeside	LAKESIDE	1	2	2	3	4	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lakewood Village	LAKEWOOD VILLAGE	0	1	1	2	3	4	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lancaster	LANCASTER	103	212	343	422	511	608	$901	$514	$349	$302	$265	$236	92,776	108,895	119,717	127,649	135,582	143,514	$ -
Conservation - Lavon	LAVON	8	16	33	19	52	141	$1,226	$783	$576	$0	$0	$0	9,806	12,528	19,020	0	0	0	$ -
Conservation - Lavon SUD	LAVON SUD	2	5	9	15	33	78	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Leonard	LEONARD	1	2	4	5	7	9	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lewisville	LEWISVILLE	268	487	760	957	1,172	1,278	$587	$353	$249	$218	$194	$178	157,327	171,924	189,368	208,857	227,356	227,356	$ -
Conservation - Lindsay	LINDSAY	0	1	2	2	5	12	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Little Elm	LITTLE ELM	14	31	46	61	76	91	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Log Cabin	LOG CABIN	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lowry Crossing	LOWRY CROSSING	1	2	3	4	5	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Lucas	LUCAS	28	52	95	118	143	156	$710	$435	$311	$275	$248	$227	19,878	22,600	29,500	32,472	35,447	35,447	$ -
Conservation - Luella SUD	LUELLA SUD	1	3	5	7	10	14	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - M-E-N WSC	M-E-N WSC	2	3	5	8	11	14	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Mabank	MABANK	11	19	30	47	77	122	$1,003	$674	$486	$434	$387	$340	11,031	12,800	14,569	20,411	29,833	41,500	$ -

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Macbee SUD	MACBEE SUD	0	0	0	0	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Malakoff	MALAKOFF	1	2	3	4	5	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Mansfield	MANSFIELD	253	478	795	1,161	1,474	1,838	$472	$275	$186	$154	$135	$120	119,370	131,228	148,038	179,331	199,364	220,872	$ -
Conservation - Marilee SUD	MARILEE SUD	3	6	9	12	15	18	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Maypearl	MAYPEARL	0	1	1	2	2	3	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Mckinney	MCKINNEY	472	899	1,786	2,575	2,829	3,085	$451	$272	$178	$150	$137	$126	212,724	244,428	317,938	387,467	387,467	387,467	$ -
Conservation - McLendon-Chisolm	MCLENDON-CHISHOLM	4	9	15	20	26	32	$1,253	$693	$508	$452	$408	$383	5,012	6,234	7,622	9,030	10,600	12,264	$ -
Conservation - Melissa	MELISSA	39	73	122	299	532	852	$516	$385	$300	$246	$199	$157	20,126	28,125	36,619	73,667	106,112	134,168	$ -
Conservation - Mesquite	MESQUITE	74	159	264	379	511	659	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Midlothian	MIDLOTHIAN	56	117	212	287	365	440	$825	$507	$337	$285	$249	$222	46,225	59,334	71,517	81,703	90,807	97,690	$ -
Conservation - Milford	MILFORD	0	0	1	1	1	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Mineral Wells	MINERAL WELLS	4	7	3	4	5	6	$1,512	$852	$0	$0	$0	$0	6,046	5,965	0	0	0	0	$ -
Conservation - Mount Zion WSC	MOUNT ZION WSC	5	10	18	23	30	38	$1,136	$708	$481	$446	$402	$367	5,681	7,075	8,662	10,266	12,057	13,957	$ -
Conservation - Mountain Peak	MOUNTAIN PEAK SUD	6	14	26	75	126	192	$0	$0	$0	$384	$273	$213	0	0	0	28,816	34,404	40,882	$ -
Conservation - Mountain Spring	MOUNTAIN SPRING WSC	2	3	5	7	14	26	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Muenster	MUENSTER	1	2	6	7	9	10	$0	$0	$772	$662	$530	$477	0	0	4,633	4,633	4,769	4,769	$ -
Conservation - Murphy	MURPHY	71	114	157	175	191	208	$815	$507	$368	$330	$303	$278	57,833	57,833	57,833	57,833	57,833	57,833	$ -
Conservation - Mustang SUD	MUSTANG SUD	6	24	52	91	142	204	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Navarro County	COUNTY-OTHER, NAVARRO	2	4	6	14	35	74	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Navarro Mills WSC	NAVARRO MILLS WSC	1	2	4	6	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Nevada	NEVADA	0	1	1	7	22	47	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - New Fairview	NEW FAIRVIEW	1	1	2	4	6	8	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - New Hope	NEW HOPE	0	1	2	3	4	6	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Newark	NEWARK	1	2	3	6	11	17	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - North Collin WSC	NORTH COLLIN WSC	3	6	10	15	21	29	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - North Hunt SUD	NORTH HUNT SUD	0	0	0	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - North Richland Hills	NORTH RICHLAND HILLS	169	290	395	435	478	522	$720	$438	$322	$292	$266	$243	121,655	127,000	127,000	127,000	127,000	127,000	$ -
Conservation - Northlake	NORTHLAKE	12	74	186	287	403	440	$1,044	$592	$384	$312	$261	$239	12,528	43,833	71,515	89,508	105,000	105,000	$ -
Conservation - Oak Grove	OAK GROVE	0	1	1	2	4	8	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Oak Leaf	OAK LEAF	1	1	2	3	6	9	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Oak Point	OAK POINT	4	10	21	35	53	63	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Ovilla	OVILLA	15	29	51	69	92	184	$840	$553	$392	$357	$322	$276	12,596	16,042	20,011	24,631	29,640	50,833	$ -
Conservation - Palmer	PALMER	1	2	4	7	11	25	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Paloma Creek	PALOMA CREEK	35	75	104	115	127	138	$942	$579	$418	$378	$342	$315	32,979	43,458	43,458	43,458	43,458	43,458	$ -
Conservation - Pantego	PANTEGO	2	4	6	8	10	12	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Parker	PARKER	35	147	254	282	310	338	$475	$282	$200	$180	$164	$150	16,611	41,500	50,833	50,833	50,833	50,833	$ -
Conservation - Parker County	COUNTY-OTHER, PARKER	23	46	67	124	237	441	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Parker County SUD	PARKER COUNTY SUD	2	6	11	18	27	40	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Payne Springs	PAYNE SPRINGS	0	1	2	2	3	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Pecan Hill	PECAN HILL	0	1	2	3	4	8	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Pelican Bay	PELICAN BAY	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Pilot Point	PILOT POINT	3	4	14	26	44	71	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Plano	PLANO	1,115	1,790	2,640	2,457	2,698	2,941	$445	$215	$127	$137	$125	$115	496,667	385,000	335,547	337,213	337,213	337,213	$ -
Conservation - Ponder	PONDER	1	2	5	8	12	18	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Post Oak Bend City	POST OAK BEND CITY	0	1	1	3	5	11	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Pottsboro	POTTSBORO	2	4	16	28	59	116	$0	$0	$797	$593	$466	$398	0	0	12,751	16,611	27,500	46,167	$ -
Conservation - Princeton	PRINCETON	3	8	16	49	97	158	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Prosper	PROSPER	171	338	557	754	972	1,030	$322	$231	$176	$151	$131	$124	55,130	78,235	97,803	113,900	127,434	127,434	$ -
Conservation - Providnece Village	PROVIDENCE VILLAGE WCID	3	6	9	12	15	19	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Red Oak	RED OAK	6	14	28	50	77	143	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Reno	RENO	1	1	2	2	3	4	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Rhome	RHOME	5	13	22	40	58	80	$1,354	$727	$554	$483	$446	$402	6,768	9,446	12,193	19,333	25,867	32,167	$ -
Conservation - Rice	RICE	1	1	2	3	4	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Rice WSC	RICE WSC	3	6	12	19	28	40	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Richardson	RICHARDSON	472	698	941	1,054	1,146	1,240	$356	$246	$187	$171	$157	$145	167,835	171,426	176,252	180,179	180,179	180,179	$ -

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Richland Hills	RICHLAND HILLS	4	8	12	18	25	34	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - River Oaks	RIVER OAKS	3	5	8	10	13	15	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Roanoke	ROANOKE	31	61	101	112	123	134	$709	$450	$318	$287	$262	$240	21,988	27,467	32,167	32,167	32,167	32,167	$ -
Conservation - Rockett SUD	ROCKETT SUD	13	32	60	99	160	236	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Rockwall	ROCKWALL	285	446	658	834	1,045	1,286	$358	$262	$202	$178	$159	$144	102,014	117,033	132,674	148,496	166,167	184,895	$ -
Conservation - Rockwall County	COUNTY-OTHER, ROCKWALL	2	4	6	7	31	63	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Rose Hill SUD	ROSE HILL SUD	2	4	7	11	17	32	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Rowlett	ROWLETT	33	70	103	137	171	205	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Royse City	ROYSE CITY	4	11	26	66	147	199	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Runaway Bay	RUNAWAY BAY	5	9	13	17	22	28	$844	$525	$403	$369	$322	$302	4,220	4,723	5,238	6,267	7,083	8,444	$ -
Conservation - Sachse	SACHSE	69	111	153	169	185	202	$982	$610	$443	$401	$366	$335	67,749	67,749	67,749	67,749	67,749	67,749	$ -
Conservation - Saginaw	SAGINAW	10	23	39	54	68	81	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Sanger	SANGER	4	10	18	28	42	61	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Sansom Park	SANSOM PARK	2	4	6	8	11	14	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Sardis-Lone Elm	SARDIS-LONE ELM WSC	52	104	174	212	245	268	$731	$444	$319	$284	$257	$235	38,000	46,167	55,500	60,167	63,010	63,010	$ -
Conservation - Savoy	SAVOY	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Scurry	SCURRY	0	0	1	2	3	8	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Seagoville	SEAGOVILLE	7	16	28	42	60	71	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Seis Lagos UD	SEIS LAGOS UD	31	36	41	43	45	47	$196	$169	$148	$141	$135	$129	6,076	6,076	6,076	6,076	6,076	6,076	$ -
Conservation - Seven Points	SEVEN POINTS	5	9	14	20	26	32	$929	$600	$440	$386	$350	$331	4,647	5,398	6,163	7,729	9,092	10,579	$ -
Conservation - Shady Shores	SHADY SHORES	2	3	5	7	8	10	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Sherman	SHERMAN	140	236	358	458	651	992	$638	$392	$279	$236	$192	$156	89,320	92,500	100,000	108,000	125,000	155,000	$ -
Conservation - South Grayson WSC	SOUTH GRAYSON WSC	2	4	7	10	14	18	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Southlake	SOUTHLAKE	204	336	517	650	797	962	$433	$286	$210	$186	$167	$150	88,257	96,209	108,384	120,654	133,076	144,120	$ -
Conservation - Southmayd	SOUTHMAYD	0	1	1	2	3	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Southwest Fannin	SOUTHWEST FANNIN	2	4	8	12	19	28	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Springtown	SPRINGTOWN	2	5	7	10	12	15	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - St Paul	ST. PAUL	1	2	3	4	6	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Sunnyvale	SUNNYVALE	32	72	129	165	218	238	$604	$382	$267	$237	$212	$194	19,333	27,500	34,500	39,167	46,167	46,167	$ -
Conservation - Talty	TALTY	1	3	5	7	13	26	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Talty WSC	TALTY WSC	21	39	63	97	136	192	$1,266	$771	$544	$479	$425	$365	26,583	30,074	34,271	46,449	57,833	70,000	$ -
Conservation - Tarrant County	COUNTY-OTHER, TARRANT	20	39	57	125	208	344	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Teague	TEAGUE	1	3	5	8	13	18	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Terrell	TERRELL	53	155	259	355	453	574	$1,125	$581	$398	$326	$279	$241	59,628	90,105	102,959	115,689	126,235	138,473	$ -
Conservation - The Colony	THE COLONY	26	58	91	131	164	197	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Tioga	TIOGA	0	1	1	2	7	12	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Tom Bean	TOM BEAN	1	4	7	10	13	22	$0	$973	$614	$477	$440	$384	0	3,893	4,299	4,767	5,722	8,444	$ -
Conservation - Tool	TOOL	8	13	18	22	36	52	$864	$570	$434	$380	$348	$319	6,915	7,405	7,816	8,357	12,528	16,611	$ -
Conservation - Trenton	TRENTON	0	3	15	35	51	70	$0	$1,000	$654	$475	$432	$393	0	3,000	9,806	16,611	22,056	27,500	$ -
Conservation - Trinidad	TRINIDAD	0	1	1	1	2	2	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Trophy Club	TROPHY CLUB	202	252	303	322	342	362	$191	$153	$127	$120	$113	$106	38,544	38,544	38,544	38,544	38,544	38,544	$ -
Conservation - Two Way SUD	TWO WAY SUD	2	6	11	17	28	42	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - University Park	UNIVERSITY PARK	25	50	74	98	123	147	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Valley View	VALLEY VIEW	0	0	1	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Van Alstyne	VAN ALSTYNE	2	4	7	11	39	65	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Venus	VENUS	0	0	1	1	2	2	$249	$318	$399	$495	$303	$369	249	318	399	495	606	738	$ -
Conservation - Virginia Hill WSC	VIRGINIA HILL WSC	1	2	3	4	6	8	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Walnut Creek SUD	WALNUT CREEK SUD	6	14	24	40	75	117	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Watauga	WATAUGA	10	19	27	35	44	53	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Waxahachie	WAXAHACHIE	92	168	279	377	504	668	$886	$535	$368	$303	$255	$218	81,550	89,950	102,800	114,400	128,500	145,500	$ -
Conservation - Weatherford	WEATHERFORD	71	134	218	392	667	1,078	$990	$591	$410	$306	$240	$195	70,276	79,236	89,362	120,000	160,000	210,720	$ -
Conservation - West Cedar Creek	WEST CEDAR CREEK MUD	4	10	17	25	40	67	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - West Wise SUD	WEST WISE SUD	1	3	4	6	7	9	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Westlake	WESTLAKE	19	45	90	121	156	194	$187	$115	$82	$73	$66	$61	3,544	5,178	7,380	8,836	10,301	11,741	$ -
Conservation - Weston	WESTON	2	7	48	157	312	374	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation - Westover Hills	WESTOVER HILLS	13	21	30	34	38	42	$161	$102	$73	$66	$60	$56	2,094	2,145	2,196	2,247	2,298	2,346	$ -
Conservation - Westworth Village	WESTWORTH VILLAGE	1	3	4	6	8	11	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - White Settlement	WHITE SETTLEMENT	7	14	21	33	52	76	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Whitesboro	WHITESBORO	2	3	5	6	9	15	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Whitewright	WHITEWRIGHT	1	1	2	3	4	5	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Willow Park	WILLOW PARK	3	6	11	20	32	47	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Wilmer	WILMER	1	3	7	18	35	75	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Wise County	COUNTY-OTHER, WISE	12	24	35	67	108	156	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Woodbine WSC	WOODBINE WSC	2	5	8	11	15	20	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Wortham	WORTHAM	1	1	2	2	5	7	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Wylie	WYLIE	24	54	86	119	154	190	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation - Wylie Northeast	WYLIE NORTHEAST SUD	1	2	4	10	22	42	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -
Conservation – Waste Prohibition,	ARGYLE WSC	6	12	12	12	12	12	$410	$205	$154	$154	$154	$154	2,462	2,462	1,848	1,848	1,848	1,848	$ 7,334
Conservation – Waste Prohibition,	ATHENS	6	14	16	19	41	68	$976	$462	$398	$370	$295	$270	5,853	6,465	6,362	7,036	12,101	18,335	$ 7,334
Conservation – Waste Prohibition,	BENBROOK	13	29	33	42	68	68	$682	$337	$306	$287	$259	$259	8,865	9,781	10,084	12,040	17,637	17,637	$ 7,334
Conservation – Waste Prohibition,	CEDAR HILL	16	44	55	66	66	66	$1,288	$568	$514	$494	$494	$494	20,614	24,985	28,250	32,621	32,621	32,621	$ 13,210
Conservation – Waste Prohibition,	ENNIS	5	13	17	28	52	94	$1,736	$781	$647	$538	$466	$429	8,681	10,148	11,001	15,057	24,240	40,338	$ 7,334
Conservation – Waste Prohibition,	EULESS	14	30	29	0	0	0	$1,508	$740	$723	$0	$0	$0	21,108	22,185	20,957	0	0	0	$ 14,668
Conservation – Waste Prohibition,	FARMERS BRANCH	8	19	23	27	31	35	$1,491	$664	$549	$497	$457	$426	11,929	12,624	12,635	13,409	14,164	14,921	$ 8,395
Conservation – Waste Prohibition,	HASLET	0	3	8	19	27	31	$614	$449	$106	$97	$95	$95	614	1,347	845	1,834	2,567	2,934	$ 7,334
Conservation – Waste Prohibition,	HUDSON OAKS	1	3	4	4	4	4	$1,594	$655	$431	$441	$441	$441	1,594	1,965	1,722	1,763	1,763	1,763	$ 7,334
Conservation – Waste Prohibition,	MIDLOTHIAN	15	41	57	71	84	93	$482	$226	$200	$195	$192	$191	7,224	9,284	11,372	13,862	16,088	17,771	$ 7,334
Conservation – Waste Prohibition,	MURPHY	27	53	53	53	53	53	$335	$171	$159	$159	$159	$159	9,048	9,048	8,434	8,434	8,434	8,434	$ 7,334
Conservation – Waste Prohibition,	WEATHERFORD	19	49	62	114	192	289	$615	$283	$254	$225	$210	$204	11,689	13,879	15,735	25,670	40,338	58,937	$ 7,407
Conservation – Waste Prohibition,	WESTOVER HILLS	7	15	15	16	16	16	$124	$58	$18	$17	$18	$18	870	876	268	275	281	287	$ 7,334
Conservation, Irrigation	BENBROOK	4	8	10	12	20	20	$2,216	$1,223	$1,008	$1,003	$882	$882	8,865	9,781	10,084	12,040	17,637	17,637	$ 7,334
Conservation, Irrigation	CORINTH	5	13	13	13	13	13	$1,950	$879	$832	$832	$832	$832	9,749	11,431	10,818	10,818	10,818	10,818	$ 7,334
Conservation, Irrigation	DENTON COUNTY FWSD #10	1	7	7	7	7	7	$3,505	$965	$877	$877	$877	$877	3,505	6,756	6,142	6,142	6,142	6,142	$ 7,334
Conservation, Irrigation	DENTON COUNTY FWSD #7	4	8	8	8	8	8	$1,391	$696	$619	$619	$619	$619	5,564	5,564	4,951	4,951	4,951	4,951	$ 7,334
Conservation, Irrigation	DESOTO	6	15	17	19	21	24	$3,539	$1,545	$1,409	$1,375	$1,344	$1,264	21,233	23,171	23,957	26,118	28,223	30,333	$ 14,389
Conservation, Irrigation	ENNIS	1	4	5	8	15	28	$8,681	$2,537	$2,200	$1,882	$1,616	$1,441	8,681	10,148	11,001	15,057	24,240	40,338	$ 7,334
Conservation, Irrigation	FARMERS BRANCH	2	6	7	8	9	10	$5,965	$2,104	$1,805	$1,676	$1,574	$1,492	11,929	12,624	12,635	13,409	14,164	14,921	$ 8,395
Conservation, Irrigation	HEATH	6	28	28	28	28	28	$842	$340	$318	$318	$318	$318	5,053	9,525	8,911	8,911	8,911	8,911	$ 7,334
Conservation, Irrigation	LANCASTER	4	12	15	17	20	22	$4,366	$1,874	$1,704	$1,675	$1,569	$1,559	17,462	22,490	25,566	28,474	31,384	34,292	$ 10,667
Conservation, Irrigation	LEWISVILLE	13	32	39	47	55	55	$3,122	$1,436	$1,310	$1,239	$1,183	$1,183	40,585	45,938	51,107	58,254	65,038	65,038	$ 14,668
Conservation, Irrigation	LUCAS	3	7	10	11	13	13	$1,085	$517	$398	$404	$378	$378	3,254	3,621	3,981	4,449	4,916	4,916	$ 7,334
Conservation, Irrigation	MIDLOTHIAN	4	12	17	21	24	27	$1,806	$774	$669	$660	$670	$658	7,224	9,284	11,372	13,862	16,088	17,771	$ 7,334
Conservation, Irrigation	ROANOKE	2	6	7	7	7	7	$1,769	$713	$629	$629	$629	$629	3,538	4,276	4,400	4,400	4,400	4,400	$ 7,334
Conservation, Irrigation	WAXAHACHIE	4	9	12	16	20	26	$3,638	$1,845	$1,614	$1,476	$1,439	$1,347	14,552	16,606	19,362	23,616	28,787	35,021	$ 8,690
Conservation, Water Loss Control -	ABLES SPRINGS WSC	2	2	0	0	0	0	$580	$580	$0	$0	$0	$0	1,159	1,159	0	0	0	0	$ 13,856
Conservation, Water Loss Control -	ADDISON	30	30	0	0	0	0	$3,031	$3,031	$0	$0	$0	$0	90,923	90,923	0	0	0	0	$ 1,086,563
Conservation, Water Loss Control -	ALEDO	4	4	0	0	0	0	$458	$458	$0	$0	$0	$0	1,831	1,831	0	0	0	0	$ 21,877
Conservation, Water Loss Control -	ALLEN	103	103	0	0	0	0	$969	$969	$0	$0	$0	$0	99,762	99,762	0	0	0	0	$ 1,192,200
Conservation, Water Loss Control -	ALVORD	1	1	0	0	0	0	$135	$135	$0	$0	$0	$0	135	135	0	0	0	0	$ 1,611
Conservation, Water Loss Control -	ANNA	54	163	0	0	0	0	$1,124	$413	$0	$0	$0	$0	60,683	67,347	0	0	0	0	$ 71,750
Conservation, Water Loss Control -	ANNETTA	1	1	0	0	0	0	$227	$227	$0	$0	$0	$0	227	227	0	0	0	0	$ 2,716
Conservation, Water Loss Control -	ANNETTA NORTH	0	0	0	0	0	0	$95	$95	$0	$0	$0	$0	95	95	0	0	0	0	$ 1,136
Conservation, Water Loss Control -	ANNETTA SOUTH	0	0	0	0	0	0	$86	$86	$0	$0	$0	$0	86	86	0	0	0	0	$ 1,026
Conservation, Water Loss Control -	ARGYLE	18	55	69	69	69	69	$2,836	$1,016	$844	$844	$844	$844	51,051	55,867	58,226	58,226	58,226	58,226	$ 111,288
Conservation, Water Loss Control -	ARGYLE WSC	5	5	0	0	0	0	$1,180	$1,180	$0	$0	$0	$0	5,900	5,900	0	0	0	0	$ 70,513
Conservation, Water Loss Control -	ARLINGTON	335	335	0	0	0	0	$766	$766	$0	$0	$0	$0	256,598	256,598	0	0	0	0	$ 3,066,441
Conservation, Water Loss Control -	ATHENS	15	15	0	0	0	0	$1,312	$1,312	$0	$0	$0	$0	19,684	19,684	0	0	0	0	$ 235,228
Conservation, Water Loss Control -	AUBREY	3	3	0	0	0	0	$378	$378	$0	$0	$0	$0	1,135	1,135	0	0	0	0	$ 13,559
Conservation, Water Loss Control -	AURORA	1	1	0	0	0	0	$195	$195	$0	$0	$0	$0	195	195	0	0	0	0	$ 2,325
Conservation, Water Loss Control -	AZLE	9	9	0	0	0	0	$2,018	$2,018	$0	$0	$0	$0	18,165	18,165	0	0	0	0	$ 217,081

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Water Loss Control -	BALCH SPRINGS	14	14	0	0	0	0	$506	$506	$0	$0	$0	$0	7,081	7,081	0	0	0	0	$ 84,625
Conservation, Water Loss Control -	BARDWELL	0	0	0	0	0	0	$97	$97	$0	$0	$0	$0	97	97	0	0	0	0	$ 1,157
Conservation, Water Loss Control -	BARTONVILLE	4	4	0	0	0	0	$720	$720	$0	$0	$0	$0	2,878	2,878	0	0	0	0	$ 34,394
Conservation, Water Loss Control -	BEDFORD	914	914	0	0	0	0	$8,376	$8,376	$0	$0	$0	$0	7,656,116	7,656,116	0	0	0	0	$ 91,493,519
Conservation, Water Loss Control -	BELLS	1	1	0	0	0	0	$20,920	$20,920	$0	$0	$0	$0	20,920	20,920	0	0	0	0	$ 250,000
Conservation, Water Loss Control -	BENBROOK	26	26	0	0	0	0	$657	$657	$0	$0	$0	$0	17,071	17,071	0	0	0	0	$ 204,001
Conservation, Water Loss Control -	BETHEL-ASH WSC	1	1	0	0	0	0	$397	$397	$0	$0	$0	$0	397	397	0	0	0	0	$ 4,744
Conservation, Water Loss Control -	BETHESDA WSC	10	10	0	0	0	0	$1,164	$1,164	$0	$0	$0	$0	11,640	11,640	0	0	0	0	$ 139,100
Conservation, Water Loss Control -	BLACKLAND WSC	3	3	0	0	0	0	$3,870	$3,658	$0	$0	$0	$0	11,610	10,973	0	0	0	0	$ 257,334
Conservation, Water Loss Control -	BLOOMING GROVE	1	1	0	0	0	0	$844	$844	$0	$0	$0	$0	844	844	0	0	0	0	$ 10,087
Conservation, Water Loss Control -	BLUE MOUND	1	1	0	0	0	0	$343	$343	$0	$0	$0	$0	343	343	0	0	0	0	$ 4,100
Conservation, Water Loss Control -	BLUE RIDGE	0	0	0	0	0	0	$129	$129	$0	$0	$0	$0	129	129	0	0	0	0	$ 1,541
Conservation, Water Loss Control -	BOLIVAR WSC	6	6	0	0	0	0	$312	$312	$0	$0	$0	$0	1,873	1,873	0	0	0	0	$ 22,380
Conservation, Water Loss Control -	BONHAM	28	10	0	0	0	0	$2,306	$767	$0	$0	$0	$0	64,561	7,668	0	0	0	0	$ 98,964
Conservation, Water Loss Control -	BOYD	6	17	22	0	0	0	$5,793	$2,055	$1,605	$0	$0	$0	34,757	34,933	35,317	0	0	0	$ 6,674
Conservation, Water Loss Control -	BRANDON-IRENE WSC	0	0	0	0	0	0	$8	$8	$0	$0	$0	$0	8	8	0	0	0	0	$ 98
Conservation, Water Loss Control -	BRIDGEPORT	6	6	0	0	0	0	$1,174	$1,174	$0	$0	$0	$0	7,044	7,044	0	0	0	0	$ 84,181
Conservation, Water Loss Control -	BRYSON	0	0	0	0	0	0	$364	$364	$0	$0	$0	$0	364	364	0	0	0	0	$ 4,352
Conservation, Water Loss Control -	BUENA VISTA - BETHEL SUD	6	6	0	0	0	0	$607	$607	$0	$0	$0	$0	3,644	3,644	0	0	0	0	$ 58,210
Conservation, Water Loss Control -	BURLESON	7	7	0	0	0	0	$450	$450	$0	$0	$0	$0	3,150	3,150	0	0	0	0	$ 37,638
Conservation, Water Loss Control -	CADDO BASIN SUD	1	1	0	0	0	0	$436	$436	$0	$0	$0	$0	436	436	0	0	0	0	$ 5,212
Conservation, Water Loss Control -	CARROLLTON	118	118	0	0	0	0	$1,830	$1,830	$0	$0	$0	$0	215,925	215,925	0	0	0	0	$ 2,580,390
Conservation, Water Loss Control -	CASH SUD	1	1	0	0	0	0	$161	$161	$0	$0	$0	$0	161	161	0	0	0	0	$ 1,928
Conservation, Water Loss Control -	CEDAR HILL	53	53	0	0	0	0	$2,307	$2,307	$0	$0	$0	$0	122,286	122,286	0	0	0	0	$ 1,461,366
Conservation, Water Loss Control -	CELINA	24	24	0	0	0	0	$2,791	$2,791	$0	$0	$0	$0	66,987	66,987	0	0	0	0	$ 800,520
Conservation, Water Loss Control -	CHATFIELD WSC	2	2	0	0	0	0	$535	$535	$0	$0	$0	$0	1,069	1,069	0	0	0	0	$ 12,778
Conservation, Water Loss Control -	CHICO	1	1	0	0	0	0	$370	$370	$0	$0	$0	$0	370	370	0	0	0	0	$ 4,423
Conservation, Water Loss Control -	COCKRELL HILL	2	2	0	0	0	0	$1,092	$1,092	$0	$0	$0	$0	2,184	2,184	0	0	0	0	$ 26,094
Conservation, Water Loss Control -	COLLEGE MOUND WSC	4	4	0	0	0	0	$323	$323	$0	$0	$0	$0	1,291	1,291	0	0	0	0	$ 15,432
Conservation, Water Loss Control -	COLLEYVILLE	47	47	0	0	0	0	$751	$751	$0	$0	$0	$0	35,306	35,306	0	0	0	0	$ 421,926
Conservation, Water Loss Control -	COUNTY-OTHER, COLLIN	8	8	0	0	0	0	$406	$406	$0	$0	$0	$0	3,251	3,251	0	0	0	0	$ 38,848
Conservation, Water Loss Control -	COLLINSVILLE	1	1	0	0	0	0	$381	$381	$0	$0	$0	$0	381	381	0	0	0	0	$ 4,551
Conservation, Water Loss Control -	COMBINE	2	2	0	0	0	0	$920	$920	$0	$0	$0	$0	1,840	1,840	0	0	0	0	$ 21,983
Conservation, Water Loss Control -	COMMUNITY WSC	2	2	0	0	0	0	$350	$350	$0	$0	$0	$0	699	699	0	0	0	0	$ 8,353
Conservation, Water Loss Control -	COUNTY-OTHER, COOKE	6	6	0	0	0	0	$341	$341	$0	$0	$0	$0	2,044	2,044	0	0	0	0	$ 24,421
Conservation, Water Loss Control -	COPEVILLE SUD	2	2	0	0	0	0	$679	$679	$0	$0	$0	$0	1,357	1,357	0	0	0	0	$ 16,214
Conservation, Water Loss Control -	COPPELL	55	55	0	0	0	0	$2,758	$2,758	$0	$0	$0	$0	151,664	151,664	0	0	0	0	$ 1,812,438
Conservation, Water Loss Control -	COPPER CANYON	1	1	0	0	0	0	$647	$647	$0	$0	$0	$0	647	647	0	0	0	0	$ 7,738
Conservation, Water Loss Control -	CORBET WSC	1	1	0	0	0	0	$336	$336	$0	$0	$0	$0	336	336	0	0	0	0	$ 4,009
Conservation, Water Loss Control -	CORINTH	21	21	0	0	0	0	$2,427	$2,427	$0	$0	$0	$0	50,969	50,969	0	0	0	0	$ 609,100
Conservation, Water Loss Control -	CORSICANA	30	30	0	0	0	0	$672	$672	$0	$0	$0	$0	20,160	20,160	0	0	0	0	$ 248,252
Conservation, Water Loss Control -	CRANDALL	4	4	0	0	0	0	$423	$423	$0	$0	$0	$0	1,691	1,691	0	0	0	0	$ 20,209
Conservation, Water Loss Control -	CRESSON	0	0	0	0	0	0	$436	$436	$0	$0	$0	$0	436	436	0	0	0	0	$ 5,210
Conservation, Water Loss Control -	CROSS ROADS	2	2	0	0	0	0	$679	$679	$0	$0	$0	$0	1,357	1,357	0	0	0	0	$ 16,218
Conservation, Water Loss Control -	CROWLEY	12	12	0	0	0	0	$2,385	$2,385	$0	$0	$0	$0	28,623	28,623	0	0	0	0	$ 342,055
Conservation, Water Loss Control -	CULLEOKA WSC	2	2	0	0	0	0	$667	$667	$0	$0	$0	$0	1,333	1,333	0	0	0	0	$ 15,924
Conservation, Water Loss Control -	DALLAS	1,376	1,376	0	0	0	0	$190	$190	$0	$0	$0	$0	261,452	261,452	0	0	0	0	$ 3,124,457
Conservation, Water Loss Control -	COUNTY-OTHER, DALLAS	9	9	0	0	0	0	$447	$447	$0	$0	$0	$0	4,027	4,027	0	0	0	0	$ 48,123
Conservation, Water Loss Control -	DALWORTHINGTON	5	5	0	0	0	0	$598	$598	$0	$0	$0	$0	2,991	2,991	0	0	0	0	$ 35,744
Conservation, Water Loss Control -	DAWSON	1	1	0	0	0	0	$251	$251	$0	$0	$0	$0	251	251	0	0	0	0	$ 2,995
Conservation, Water Loss Control -	DECATUR	12	12	0	0	0	0	$1,661	$1,661	$0	$0	$0	$0	19,936	19,936	0	0	0	0	$ 238,239
Conservation, Water Loss Control -	DENISON	144	397	395	433	510	637	$874	$338	$293	$289	$281	$272	125,866	134,325	115,669	125,244	143,455	173,433	$ 322,613
Conservation, Water Loss Control -	DENTON	145	145	0	0	0	0	$1,119	$1,119	$0	$0	$0	$0	162,207	162,207	0	0	0	0	$ 1,938,438
Conservation, Water Loss Control -	COUNTY-OTHER, DENTON	19	19	0	0	0	0	$409	$409	$0	$0	$0	$0	7,776	7,776	0	0	0	0	$ 92,932
Conservation, Water Loss Control -	DENTON COUNTY FWSD #10	7	7	0	0	0	0	$525	$525	$0	$0	$0	$0	3,677	3,677	0	0	0	0	$ 43,942

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Water Loss Control -	DENTON COUNTY FWSD #1A	18	18	0	0	0	0	$762	$762	$0	$0	$0	$0	13,721	13,721	0	0	0	0	$ 163,972
Conservation, Water Loss Control -	DENTON COUNTY FWSD #7	17	17	0	0	0	0	$3,327	$3,327	$0	$0	$0	$0	56,565	56,565	0	0	0	0	$ 675,975
Conservation, Water Loss Control -	DESOTO	94	199	163	176	190	204	$2,178	$1,103	$1,326	$1,321	$1,308	$1,297	204,739	219,458	216,119	232,524	248,510	264,534	$ 220,487
Conservation, Water Loss Control -	DOUBLE OAK	3	3	0	0	0	0	$483	$483	$0	$0	$0	$0	1,450	1,450	0	0	0	0	$ 17,324
Conservation, Water Loss Control -	DUNCANVILLE	30	30	0	0	0	0	$2,290	$2,290	$0	$0	$0	$0	68,704	68,704	0	0	0	0	$ 821,033
Conservation, Water Loss Control -	EAST CEDAR CREEK FWSD	4	4	0	0	0	0	$602	$602	$0	$0	$0	$0	2,409	2,409	0	0	0	0	$ 28,785
Conservation, Water Loss Control -	EAST FORK SUD	3	3	0	0	0	0	$12,552	$12,552	$0	$0	$0	$0	37,656	37,656	0	0	0	0	$ 450,000
Conservation, Water Loss Control -	ECTOR	0	0	0	0	0	0	$433	$433	$0	$0	$0	$0	433	433	0	0	0	0	$ 5,171
Conservation, Water Loss Control -	EDGECLIFF VILLAGE	3	3	0	0	0	0	$1,925	$1,925	$0	$0	$0	$0	5,774	5,774	0	0	0	0	$ 69,007
Conservation, Water Loss Control -	COUNTY-OTHER, ELLIS	4	4	0	0	0	0	$318	$318	$0	$0	$0	$0	1,272	1,272	0	0	0	0	$ 15,199
Conservation, Water Loss Control -	ENNIS	99	292	308	418	672	1,117	$982	$378	$368	$351	$325	$303	97,224	110,287	113,478	146,630	218,265	338,159	$ 105,170
Conservation, Water Loss Control -	EULESS	45	45	0	0	0	0	$2,389	$2,389	$0	$0	$0	$0	107,502	107,502	0	0	0	0	$ 1,284,690
Conservation, Water Loss Control -	EUSTACE	1	1	0	0	0	0	$422	$422	$0	$0	$0	$0	422	422	0	0	0	0	$ 5,043
Conservation, Water Loss Control -	EVERMAN	3	3	0	0	0	0	$1,739	$1,739	$0	$0	$0	$0	5,216	5,216	0	0	0	0	$ 62,329
Conservation, Water Loss Control -	FAIRFIELD	3	3	0	0	0	0	$1,363	$1,363	$0	$0	$0	$0	4,089	4,089	0	0	0	0	$ 56,204
Conservation, Water Loss Control -	FAIRVIEW	23	23	0	0	0	0	$807	$807	$0	$0	$0	$0	18,562	18,562	0	0	0	0	$ 221,824
Conservation, Water Loss Control -	COUNTY-OTHER, FANNIN	7	7	0	0	0	0	$358	$358	$0	$0	$0	$0	2,503	2,503	0	0	0	0	$ 29,907
Conservation, Water Loss Control -	FARMERS BRANCH	84	168	129	136	144	151	$1,670	$869	$983	$979	$968	$964	140,304	145,988	126,833	133,164	139,334	145,521	$ 298,626
Conservation, Water Loss Control -	FARMERSVILLE	5	5	0	0	0	0	$424	$424	$0	$0	$0	$0	2,122	2,122	0	0	0	0	$ 25,355
Conservation, Water Loss Control -	FATE	9	9	0	0	0	0	$1,080	$1,080	$0	$0	$0	$0	9,724	9,724	0	0	0	0	$ 116,210
Conservation, Water Loss Control -	FERRIS	2	2	0	0	0	0	$1,787	$1,787	$0	$0	$0	$0	3,573	3,573	0	0	0	0	$ 42,703
Conservation, Water Loss Control -	FILES VALLEY WSC	1	1	0	0	0	0	$168	$168	$0	$0	$0	$0	168	168	0	0	0	0	$ 2,010
Conservation, Water Loss Control -	FLO COMMUNITY WSC	0	0	0	0	0	0	$45	$45	$0	$0	$0	$0	45	45	0	0	0	0	$ 539
Conservation, Water Loss Control -	FLOWER MOUND	95	95	0	0	0	0	$936	$936	$0	$0	$0	$0	88,928	88,928	0	0	0	0	$ 1,062,719
Conservation, Water Loss Control -	FOREST HILL	7	7	0	0	0	0	$1,907	$1,907	$0	$0	$0	$0	13,346	13,346	0	0	0	0	$ 159,491
Conservation, Water Loss Control -	FORNEY	16	16	0	0	0	0	$1,613	$1,613	$0	$0	$0	$0	25,802	25,802	0	0	0	0	$ 308,348
Conservation, Water Loss Control -	FORNEY LAKE WSC	4	4	0	0	0	0	$935	$935	$0	$0	$0	$0	3,741	3,741	0	0	0	0	$ 44,705
Conservation, Water Loss Control -	FORT WORTH	18,776	20,583	8,540	6,310	3,430	0	$357	$326	$0	$0	$0	$0	6,709,080	6,709,080	0	0	0	0	$ 238,000,000
Conservation, Water Loss Control -	COUNTY-OTHER, FREESTONE	6	6	0	0	0	0	$341	$341	$0	$0	$0	$0	2,047	2,047	0	0	0	0	$ 24,466
Conservation, Water Loss Control -	FRISCO	208	208	0	0	0	0	$736	$736	$0	$0	$0	$0	153,100	153,100	0	0	0	0	$ 1,829,608
Conservation, Water Loss Control -	FROST	0	0	0	0	0	0	$381	$381	$0	$0	$0	$0	381	381	0	0	0	0	$ 4,559
Conservation, Water Loss Control -	GAINESVILLE	12	12	0	0	0	0	$1,575	$1,575	$0	$0	$0	$0	18,905	18,905	0	0	0	0	$ 225,921
Conservation, Water Loss Control -	GARLAND	189	189	0	0	0	0	$1,042	$1,042	$0	$0	$0	$0	196,856	196,856	0	0	0	0	$ 2,352,502
Conservation, Water Loss Control -	GARRETT	2	2	0	0	0	0	$389	$389	$0	$0	$0	$0	778	778	0	0	0	0	$ 9,298
Conservation, Water Loss Control -	GASTONIA-SCURRY SUD	3	3	0	0	0	0	$340	$340	$0	$0	$0	$0	1,021	1,021	0	0	0	0	$ 12,199
Conservation, Water Loss Control -	GLENN HEIGHTS	9	9	0	0	0	0	$673	$673	$0	$0	$0	$0	6,056	6,056	0	0	0	0	$ 72,376
Conservation, Water Loss Control -	GRAND PRAIRIE	176	176	0	0	0	0	$980	$980	$0	$0	$0	$0	172,392	172,392	0	0	0	0	$ 2,060,148
Conservation, Water Loss Control -	GRAPEVINE	92	92	0	0	0	0	$2,945	$2,945	$0	$0	$0	$0	270,935	270,935	0	0	0	0	$ 3,237,778
Conservation, Water Loss Control -	COUNTY-OTHER, GRAYSON	14	14	0	0	0	0	$366	$366	$0	$0	$0	$0	5,122	5,122	0	0	0	0	$ 61,207
Conservation, Water Loss Control -	GUN BARREL CITY	5	5	0	0	0	0	$352	$352	$0	$0	$0	$0	1,761	1,761	0	0	0	0	$ 28,375
Conservation, Water Loss Control -	GUNTER	2	17	0	0	0	0	$847	$2,271	$0	$0	$0	$0	1,693	38,615	0	0	0	0	$ 20,228
Conservation, Water Loss Control -	HACKBERRY	2	2	0	0	0	0	$457	$457	$0	$0	$0	$0	913	913	0	0	0	0	$ 10,906
Conservation, Water Loss Control -	HALTOM CITY	26	26	0	0	0	0	$2,122	$2,122	$0	$0	$0	$0	55,168	55,168	0	0	0	0	$ 659,284
Conservation, Water Loss Control -	HASLET	3	3	0	0	0	0	$550	$550	$0	$0	$0	$0	1,649	1,649	0	0	0	0	$ 19,711
Conservation, Water Loss Control -	HEATH	20	20	0	0	0	0	$2,846	$2,846	$0	$0	$0	$0	56,916	56,916	0	0	0	0	$ 680,172
Conservation, Water Loss Control -	COUNTY-OTHER,	2	2	0	0	0	0	$228	$228	$0	$0	$0	$0	456	456	0	0	0	0	$ 5,449
Conservation, Water Loss Control -	HICKORY CREEK	3	3	0	0	0	0	$500	$500	$0	$0	$0	$0	1,501	1,501	0	0	0	0	$ 17,941
Conservation, Water Loss Control -	HICKORY CREEK SUD	0	0	0	0	0	0	$46	$46	$0	$0	$0	$0	46	46	0	0	0	0	$ 555
Conservation, Water Loss Control -	HIGH POINT WSC	2	2	0	0	0	0	$404	$404	$0	$0	$0	$0	808	808	0	0	0	0	$ 9,661
Conservation, Water Loss Control -	HIGHLAND PARK	20	20	0	0	0	0	$367	$367	$0	$0	$0	$0	7,348	7,348	0	0	0	0	$ 87,810
Conservation, Water Loss Control -	HIGHLAND VILLAGE	19	19	0	0	0	0	$2,397	$2,397	$0	$0	$0	$0	45,550	45,550	0	0	0	0	$ 544,339
Conservation, Water Loss Control -	HONEY GROVE	19	19	0	0	0	0	$17	$17	$0	$0	$0	$0	320	320	0	0	0	0	$ 3,829
Conservation, Water Loss Control -	HOWE	1	1	0	0	0	0	$120	$120	$0	$0	$0	$0	120	120	0	0	0	0	$ 1,436
Conservation, Water Loss Control -	HUDSON OAKS	2	2	0	0	0	0	$484	$484	$0	$0	$0	$0	968	968	0	0	0	0	$ 11,573
Conservation, Water Loss Control -	HURST	34	34	0	0	0	0	$2,305	$2,305	$0	$0	$0	$0	78,386	78,386	0	0	0	0	$ 936,745

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Water Loss Control -	HUTCHINS	5	5	0	0	0	0	$2,168	$2,168	$0	$0	$0	$0	10,838	10,838	0	0	0	0	$ 129,514
Conservation, Water Loss Control -	IRVING	281	281	0	0	0	0	$2,350	$2,350	$0	$0	$0	$0	660,247	660,247	0	0	0	0	$ 7,904,869
Conservation, Water Loss Control -	ITALY	2	2	0	0	0	0	$268	$268	$0	$0	$0	$0	536	536	0	0	0	0	$ 6,406
Conservation, Water Loss Control -	COUNTY-OTHER, JACK	2	2	0	0	0	0	$397	$397	$0	$0	$0	$0	794	794	0	0	0	0	$ 9,485
Conservation, Water Loss Control -	JACKSBORO	3	3	0	0	0	0	$462	$462	$0	$0	$0	$0	1,387	1,387	0	0	0	0	$ 16,571
Conservation, Water Loss Control -	JOHNSON COUNTY SUD	1	1	0	0	0	0	$374	$374	$0	$0	$0	$0	374	374	0	0	0	0	$ 4,470
Conservation, Water Loss Control -	JOSEPHINE	1	1	0	0	0	0	$550	$550	$0	$0	$0	$0	550	550	0	0	0	0	$ 6,573
Conservation, Water Loss Control -	JUSTIN	3	3	0	0	0	0	$476	$476	$0	$0	$0	$0	1,428	1,428	0	0	0	0	$ 17,064
Conservation, Water Loss Control -	KAUFMAN	5	5	0	0	0	0	$213	$213	$0	$0	$0	$0	1,067	1,067	0	0	0	0	$ 12,755
Conservation, Water Loss Control -	COUNTY-OTHER, KAUFMAN	9	9	0	0	0	0	$348	$348	$0	$0	$0	$0	3,131	3,131	0	0	0	0	$ 37,415
Conservation, Water Loss Control -	KELLER	61	61	0	0	0	0	$2,483	$2,483	$0	$0	$0	$0	151,485	151,485	0	0	0	0	$ 1,810,304
Conservation, Water Loss Control -	KEMP	7	22	24	29	45	63	$5,185	$1,682	$1,517	$1,287	$892	$688	36,293	36,996	36,399	37,327	40,133	43,344	$ 31,428
Conservation, Water Loss Control -	KENNEDALE	7	7	0	0	0	0	$599	$599	$0	$0	$0	$0	4,196	4,196	0	0	0	0	$ 50,144
Conservation, Water Loss Control -	KENTUCKY TOWN WSC	2	2	0	0	0	0	$314	$314	$0	$0	$0	$0	627	627	0	0	0	0	$ 7,487
Conservation, Water Loss Control -	KERENS	1	1	0	0	0	0	$320	$320	$0	$0	$0	$0	320	320	0	0	0	0	$ 3,823
Conservation, Water Loss Control -	KRUGERVILLE	1	1	0	0	0	0	$621	$621	$0	$0	$0	$0	621	621	0	0	0	0	$ 7,419
Conservation, Water Loss Control -	KRUM	6	6	0	0	0	0	$427	$427	$0	$0	$0	$0	2,563	2,563	0	0	0	0	$ 30,634
Conservation, Water Loss Control -	LADONIA	1	1	0	0	0	0	$510	$510	$0	$0	$0	$0	510	510	0	0	0	0	$ 6,099
Conservation, Water Loss Control -	LAKE DALLAS	5	5	0	0	0	0	$569	$569	$0	$0	$0	$0	2,847	2,847	0	0	0	0	$ 34,026
Conservation, Water Loss Control -	LAKE KIOWA SUD	4	4	0	0	0	0	$2,259	$2,259	$0	$0	$0	$0	9,034	9,034	0	0	0	0	$ 107,958
Conservation, Water Loss Control -	LAKE WORTH	6	6	0	0	0	0	$28,440	$28,440	$0	$0	$0	$0	170,642	170,642	0	0	0	0	$ 2,039,240
Conservation, Water Loss Control -	LAKESIDE	1	1	0	0	0	0	$1,888	$1,888	$0	$0	$0	$0	1,888	1,888	0	0	0	0	$ 22,567
Conservation, Water Loss Control -	LAKEWOOD VILLAGE	0	0	0	0	0	0	$176	$176	$0	$0	$0	$0	176	176	0	0	0	0	$ 2,105
Conservation, Water Loss Control -	LANCASTER	38	38	0	0	0	0	$2,289	$2,289	$0	$0	$0	$0	86,975	86,975	0	0	0	0	$ 1,039,386
Conservation, Water Loss Control -	LAVON	3	3	0	0	0	0	$385	$385	$0	$0	$0	$0	1,156	1,156	0	0	0	0	$ 13,820
Conservation, Water Loss Control -	LAVON SUD	3	3	0	0	0	0	$400	$400	$0	$0	$0	$0	1,201	1,201	0	0	0	0	$ 14,354
Conservation, Water Loss Control -	LEONARD	2	2	0	0	0	0	$690	$690	$0	$0	$0	$0	1,380	1,380	0	0	0	0	$ 16,497
Conservation, Water Loss Control -	LEWISVILLE	101	101	0	0	0	0	$961	$961	$0	$0	$0	$0	97,103	97,103	0	0	0	0	$ 1,160,420
Conservation, Water Loss Control -	LINDSAY	1	1	0	0	0	0	$894	$894	$0	$0	$0	$0	894	894	0	0	0	0	$ 10,685
Conservation, Water Loss Control -	LITTLE ELM	21	21	0	0	0	0	$1,240	$1,240	$0	$0	$0	$0	26,048	26,048	0	0	0	0	$ 311,279
Conservation, Water Loss Control -	LOG CABIN	0	0	0	0	0	0	$112	$112	$0	$0	$0	$0	112	112	0	0	0	0	$ 1,340
Conservation, Water Loss Control -	LOWRY CROSSING	1	1	0	0	0	0	$345	$345	$0	$0	$0	$0	345	345	0	0	0	0	$ 4,120
Conservation, Water Loss Control -	LUCAS	50	145	176	196	217	217	$966	$344	$290	$282	$275	$275	48,288	49,893	51,035	55,310	59,588	59,588	$ 55,245
Conservation, Water Loss Control -	LUELLA SUD	2	2	0	0	0	0	$904	$904	$0	$0	$0	$0	1,808	1,808	0	0	0	0	$ 21,603
Conservation, Water Loss Control -	M-E-N WSC	2	2	0	0	0	0	$403	$403	$0	$0	$0	$0	806	806	0	0	0	0	$ 9,629
Conservation, Water Loss Control -	MABANK	4	4	0	0	0	0	$712	$712	$0	$0	$0	$0	2,846	2,846	0	0	0	0	$ 48,679
Conservation, Water Loss Control -	MACBEE SUD	0	0	0	0	0	0	$20	$20	$0	$0	$0	$0	20	20	0	0	0	0	$ 243
Conservation, Water Loss Control -	MALAKOFF	1	1	0	0	0	0	$1,575	$1,575	$0	$0	$0	$0	1,575	1,575	0	0	0	0	$ 18,817
Conservation, Water Loss Control -	MANSFIELD	95	95	0	0	0	0	$2,044	$2,044	$0	$0	$0	$0	194,193	194,193	0	0	0	0	$ 2,320,683
Conservation, Water Loss Control -	MARILEE SUD	5	5	0	0	0	0	$16,736	$16,736	$0	$0	$0	$0	83,679	83,679	0	0	0	0	$ 1,000,000
Conservation, Water Loss Control -	MAYPEARL	1	1	0	0	0	0	$170	$170	$0	$0	$0	$0	170	170	0	0	0	0	$ 2,030
Conservation, Water Loss Control -	MCKINNEY	284	572	578	752	751	751	$2,242	$1,255	$1,278	$1,237	$1,239	$1,239	636,748	717,606	738,908	930,482	930,482	930,482	$ 2,138,094
Conservation, Water Loss Control -	MCLENDON-CHISHOLM	2	2	0	0	0	0	$461	$461	$0	$0	$0	$0	922	922	0	0	0	0	$ 11,013
Conservation, Water Loss Control -	MELISSA	8	8	0	0	0	0	$587	$587	$0	$0	$0	$0	4,697	4,697	0	0	0	0	$ 56,132
Conservation, Water Loss Control -	MESQUITE	112	112	0	0	0	0	$2,371	$2,371	$0	$0	$0	$0	265,597	265,597	0	0	0	0	$ 3,173,984
Conservation, Water Loss Control -	MIDLOTHIAN	21	21	0	0	0	0	$2,060	$2,060	$0	$0	$0	$0	43,265	43,265	0	0	0	0	$ 517,036
Conservation, Water Loss Control -	MILFORD	0	0	0	0	0	0	$373	$373	$0	$0	$0	$0	373	373	0	0	0	0	$ 4,460
Conservation, Water Loss Control -	MINERAL WELLS	2	2	0	0	0	0	$268	$268	$0	$0	$0	$0	535	535	0	0	0	0	$ 13,723
Conservation, Water Loss Control -	MOUNT ZION WSC	2	2	0	0	0	0	$1,311	$1,311	$0	$0	$0	$0	2,622	2,622	0	0	0	0	$ 38,667
Conservation, Water Loss Control -	MOUNTAIN PEAK SUD	8	8	0	116	425	516	$378	$378	$0	$431	$137	$131	3,026	3,026	0	50,052	58,088	67,402	$ 43,492
Conservation, Water Loss Control -	MOUNTAIN SPRING WSC	2	2	0	0	0	0	$468	$468	$0	$0	$0	$0	936	936	0	0	0	0	$ 11,183
Conservation, Water Loss Control -	MUENSTER	1	1	0	0	0	0	$1,772	$1,772	$0	$0	$0	$0	1,772	1,772	0	0	0	0	$ 21,182
Conservation, Water Loss Control -	MURPHY	26	26	0	0	0	0	$674	$674	$0	$0	$0	$0	17,527	17,527	0	0	0	0	$ 209,452
Conservation, Water Loss Control -	MUSTANG SUD	9	9	0	0	0	0	$1,733	$1,733	$0	$0	$0	$0	15,598	15,598	0	0	0	0	$ 186,398
Conservation, Water Loss Control -	COUNTY-OTHER, NAVARRO	3	3	0	0	0	0	$342	$342	$0	$0	$0	$0	1,026	1,026	0	0	0	0	$ 12,260

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Water Loss Control -	NAVARRO MILLS WSC	2	2	0	0	0	0	$448	$448	$0	$0	$0	$0	896	896	0	0	0	0	$ 10,706
Conservation, Water Loss Control -	NEVADA	0	0	0	0	0	0	$136	$136	$0	$0	$0	$0	136	136	0	0	0	0	$ 1,628
Conservation, Water Loss Control -	NEW FAIRVIEW	1	1	0	0	0	0	$248	$248	$0	$0	$0	$0	248	248	0	0	0	0	$ 2,968
Conservation, Water Loss Control -	NEW HOPE	1	1	0	0	0	0	$279	$279	$0	$0	$0	$0	279	279	0	0	0	0	$ 3,332
Conservation, Water Loss Control -	NEWARK	1	1	0	0	0	0	$333	$333	$0	$0	$0	$0	333	333	0	0	0	0	$ 3,978
Conservation, Water Loss Control -	NORTH COLLIN WSC	4	4	0	0	0	0	$362	$362	$0	$0	$0	$0	1,446	1,446	0	0	0	0	$ 17,277
Conservation, Water Loss Control -	NORTH HUNT SUD	0	0	0	0	0	0	$36	$36	$0	$0	$0	$0	36	36	0	0	0	0	$ 432
Conservation, Water Loss Control -	NORTH RICHLAND HILLS	64	64	0	0	0	0	$2,329	$2,329	$0	$0	$0	$0	149,061	149,061	0	0	0	0	$ 1,781,337
Conservation, Water Loss Control -	NORTHLAKE	5	5	0	0	0	0	$2,874	$2,874	$0	$0	$0	$0	14,369	14,369	0	0	0	0	$ 171,715
Conservation, Water Loss Control -	OAK GROVE	0	0	0	0	0	0	$106	$106	$0	$0	$0	$0	106	106	0	0	0	0	$ 1,272
Conservation, Water Loss Control -	OAK LEAF	1	1	0	0	0	0	$323	$323	$0	$0	$0	$0	323	323	0	0	0	0	$ 3,857
Conservation, Water Loss Control -	OAK POINT	5	5	0	0	0	0	$688	$688	$0	$0	$0	$0	3,441	3,441	0	0	0	0	$ 41,117
Conservation, Water Loss Control -	OAKWOOD	0	0	0	0	0	0	$9	$9	$0	$0	$0	$0	9	9	0	0	0	0	$ 108
Conservation, Water Loss Control -	OVILLA	5	5	0	0	0	0	$677	$677	$0	$0	$0	$0	3,383	3,383	0	0	0	0	$ 40,424
Conservation, Water Loss Control -	PALMER	1	1	0	0	0	0	$2,590	$2,590	$0	$0	$0	$0	2,590	2,590	0	0	0	0	$ 30,952
Conservation, Water Loss Control -	PALOMA CREEK	13	13	0	0	0	0	$708	$708	$0	$0	$0	$0	9,206	9,206	0	0	0	0	$ 110,011
Conservation, Water Loss Control -	PANTEGO	3	3	0	0	0	0	$611	$611	$0	$0	$0	$0	1,834	1,834	0	0	0	0	$ 21,919
Conservation, Water Loss Control -	PARKER	13	13	0	0	0	0	$768	$768	$0	$0	$0	$0	9,981	9,981	0	0	0	0	$ 119,273
Conservation, Water Loss Control -	COUNTY-OTHER, PARKER	35	35	0	0	0	0	$428	$428	$0	$0	$0	$0	14,982	14,982	0	0	0	0	$ 179,036
Conservation, Water Loss Control -	PARKER COUNTY SUD	3	3	0	0	0	0	$994	$994	$0	$0	$0	$0	2,982	2,982	0	0	0	0	$ 35,633
Conservation, Water Loss Control -	PAYNE SPRINGS	1	1	0	0	0	0	$184	$184	$0	$0	$0	$0	184	184	0	0	0	0	$ 2,203
Conservation, Water Loss Control -	PECAN HILL	1	1	0	0	0	0	$181	$181	$0	$0	$0	$0	181	181	0	0	0	0	$ 2,168
Conservation, Water Loss Control -	PELICAN BAY	1	1	0	0	0	0	$846	$846	$0	$0	$0	$0	846	846	0	0	0	0	$ 10,113
Conservation, Water Loss Control -	PILOT POINT	4	4	0	0	0	0	$791	$791	$0	$0	$0	$0	3,163	3,163	0	0	0	0	$ 37,796
Conservation, Water Loss Control -	PLANO	345	345	0	0	0	0	$410	$410	$0	$0	$0	$0	141,375	141,375	0	0	0	0	$ 1,689,481
Conservation, Water Loss Control -	PONDER	1	1	0	0	0	0	$1,760	$1,760	$0	$0	$0	$0	1,760	1,760	0	0	0	0	$ 21,028
Conservation, Water Loss Control -	POST OAK BEND CITY	0	0	0	0	0	0	$144	$144	$0	$0	$0	$0	144	144	0	0	0	0	$ 1,726
Conservation, Water Loss Control -	POTTSBORO	2	2	0	0	0	0	$1,795	$1,795	$0	$0	$0	$0	3,589	3,589	0	0	0	0	$ 50,227
Conservation, Water Loss Control -	PRINCETON	5	5	0	0	0	0	$354	$354	$0	$0	$0	$0	1,772	1,772	0	0	0	0	$ 21,181
Conservation, Water Loss Control -	PROSPER	27	27	0	0	0	0	$760	$760	$0	$0	$0	$0	20,510	20,510	0	0	0	0	$ 245,098
Conservation, Water Loss Control -	PROVIDENCE VILLAGE WCID	5	5	0	0	0	0	$532	$532	$0	$0	$0	$0	2,660	2,660	0	0	0	0	$ 31,785
Conservation, Water Loss Control -	RED OAK	9	9	0	0	0	0	$591	$591	$0	$0	$0	$0	5,317	5,317	0	0	0	0	$ 63,535
Conservation, Water Loss Control -	RENO	1	1	0	0	0	0	$117	$117	$0	$0	$0	$0	117	117	0	0	0	0	$ 1,404
Conservation, Water Loss Control -	RHOME	2	2	0	0	0	0	$164	$164	$0	$0	$0	$0	328	328	0	0	0	0	$ 3,921
Conservation, Water Loss Control -	RICE	1	1	0	0	0	0	$212	$212	$0	$0	$0	$0	212	212	0	0	0	0	$ 2,533
Conservation, Water Loss Control -	RICE WSC	4	4	0	0	0	0	$602	$602	$0	$0	$0	$0	2,407	2,407	0	0	0	0	$ 28,765
Conservation, Water Loss Control -	RICHARDSON	132	132	0	0	0	0	$503	$503	$0	$0	$0	$0	66,346	66,346	0	0	0	0	$ 792,858
Conservation, Water Loss Control -	RICHLAND HILLS	6	6	0	0	0	0	$2,006	$2,006	$0	$0	$0	$0	12,033	12,033	0	0	0	0	$ 143,796
Conservation, Water Loss Control -	RIVER OAKS	4	4	0	0	0	0	$2,099	$2,099	$0	$0	$0	$0	8,396	8,396	0	0	0	0	$ 100,337
Conservation, Water Loss Control -	ROANOKE	11	11	0	0	0	0	$705	$705	$0	$0	$0	$0	7,752	7,752	0	0	0	0	$ 92,645
Conservation, Water Loss Control -	ROCKETT SUD	19	19	0	0	0	0	$2,202	$2,202	$0	$0	$0	$0	41,840	41,840	0	0	0	0	$ 500,000
Conservation, Water Loss Control -	ROCKWALL	45	45	0	0	0	0	$761	$761	$0	$0	$0	$0	34,265	34,265	0	0	0	0	$ 409,483
Conservation, Water Loss Control -	COUNTY-OTHER, ROCKWALL	3	3	0	0	0	0	$340	$340	$0	$0	$0	$0	1,021	1,021	0	0	0	0	$ 12,200
Conservation, Water Loss Control -	ROSE HILL SUD	2	2	0	0	0	0	$927	$927	$0	$0	$0	$0	1,853	1,853	0	0	0	0	$ 22,139
Conservation, Water Loss Control -	ROWLETT	49	49	0	0	0	0	$2,513	$2,513	$0	$0	$0	$0	123,128	123,128	0	0	0	0	$ 1,471,425
Conservation, Water Loss Control -	ROYSE CITY	6	6	0	0	0	0	$369	$369	$0	$0	$0	$0	2,216	2,216	0	0	0	0	$ 26,487
Conservation, Water Loss Control -	RUNAWAY BAY	2	2	0	0	0	0	$274	$274	$0	$0	$0	$0	547	547	0	0	0	0	$ 6,539
Conservation, Water Loss Control -	SACHSE	26	26	0	0	0	0	$1,664	$1,664	$0	$0	$0	$0	43,252	43,252	0	0	0	0	$ 516,882
Conservation, Water Loss Control -	SAGINAW	16	16	0	0	0	0	$5,230	$5,230	$0	$0	$0	$0	83,679	83,679	0	0	0	0	$ 1,000,000
Conservation, Water Loss Control -	SANGER	6	6	0	0	0	0	$404	$404	$0	$0	$0	$0	2,422	2,422	0	0	0	0	$ 28,949
Conservation, Water Loss Control -	SANSOM PARK	3	3	0	0	0	0	$405	$405	$0	$0	$0	$0	1,216	1,216	0	0	0	0	$ 14,529
Conservation, Water Loss Control -	SARDIS-LONE ELM WSC	20	20	0	0	0	0	$467	$467	$0	$0	$0	$0	9,335	9,335	0	0	0	0	$ 126,220
Conservation, Water Loss Control -	SAVOY	0	0	0	0	0	0	$120	$120	$0	$0	$0	$0	120	120	0	0	0	0	$ 1,433
Conservation, Water Loss Control -	SCURRY	0	0	0	0	0	0	$72	$72	$0	$0	$0	$0	72	72	0	0	0	0	$ 864
Conservation, Water Loss Control -	SEAGOVILLE	10	10	0	0	0	0	$639	$639	$0	$0	$0	$0	6,393	6,393	0	0	0	0	$ 76,397

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Water Loss Control -	SEIS LAGOS UD	3	3	0	0	0	0	$4,200	$4,200	$0	$0	$0	$0	12,601	12,601	0	0	0	0	$ 150,585
Conservation, Water Loss Control -	SEVEN POINTS	2	2	0	0	0	0	$358	$358	$0	$0	$0	$0	715	715	0	0	0	0	$ 8,550
Conservation, Water Loss Control -	SHADY SHORES	2	2	0	0	0	0	$584	$584	$0	$0	$0	$0	1,168	1,168	0	0	0	0	$ 13,964
Conservation, Water Loss Control -	SHERMAN	53	53	0	0	0	0	$1,632	$1,632	$0	$0	$0	$0	86,480	86,480	0	0	0	0	$ 1,044,775
Conservation, Water Loss Control -	SOUTH GRAYSON WSC	3	3	0	0	0	0	$905	$905	$0	$0	$0	$0	2,716	2,716	0	0	0	0	$ 32,462
Conservation, Water Loss Control -	SOUTHLAKE	58	58	0	0	0	0	$2,450	$2,450	$0	$0	$0	$0	142,090	142,090	0	0	0	0	$ 1,698,028
Conservation, Water Loss Control -	SOUTHMAYD	0	0	0	0	0	0	$442	$442	$0	$0	$0	$0	442	442	0	0	0	0	$ 5,277
Conservation, Water Loss Control -	SOUTHWEST FANNIN	3	3	0	0	0	0	$339	$339	$0	$0	$0	$0	1,018	1,018	0	0	0	0	$ 12,165
Conservation, Water Loss Control -	SPRINGTOWN	3	3	0	0	0	0	$192	$192	$0	$0	$0	$0	575	575	0	0	0	0	$ 6,872
Conservation, Water Loss Control -	ST. PAUL	1	1	0	0	0	0	$699	$699	$0	$0	$0	$0	699	699	0	0	0	0	$ 8,349
Conservation, Water Loss Control -	SUNNYVALE	12	12	0	0	0	0	$1,182	$1,182	$0	$0	$0	$0	14,183	14,183	0	0	0	0	$ 169,489
Conservation, Water Loss Control -	TALTY	2	2	0	0	0	0	$129	$129	$0	$0	$0	$0	258	258	0	0	0	0	$ 3,079
Conservation, Water Loss Control -	TALTY WSC	8	8	0	0	0	0	$285	$285	$0	$0	$0	$0	2,278	2,278	0	0	0	0	$ 27,225
Conservation, Water Loss Control -	COUNTY-OTHER, TARRANT	30	30	0	0	0	0	$441	$441	$0	$0	$0	$0	13,233	13,233	0	0	0	0	$ 158,141
Conservation, Water Loss Control -	TEAGUE	2	2	0	0	0	0	$295	$295	$0	$0	$0	$0	590	590	0	0	0	0	$ 7,053
Conservation, Water Loss Control -	TERRELL	20	20	0	0	0	0	$553	$553	$0	$0	$0	$0	11,059	11,059	0	0	0	0	$ 132,163
Conservation, Water Loss Control -	THE COLONY	39	39	0	0	0	0	$682	$682	$0	$0	$0	$0	26,591	26,591	0	0	0	0	$ 317,769
Conservation, Water Loss Control -	TIOGA	1	1	0	0	0	0	$705	$705	$0	$0	$0	$0	705	705	0	0	0	0	$ 8,424
Conservation, Water Loss Control -	TOM BEAN	1	19	57	64	77	115	$175	$1,811	$605	$543	$459	$321	175	34,414	34,478	34,754	35,317	36,923	$ 16,765
Conservation, Water Loss Control -	TOOL	3	3	0	0	0	0	$381	$381	$0	$0	$0	$0	1,144	1,144	0	0	0	0	$ 13,672
Conservation, Water Loss Control -	TRENTON	1	1	0	0	0	0	$557	$557	$0	$0	$0	$0	557	557	0	0	0	0	$ 6,658
Conservation, Water Loss Control -	TRINIDAD	0	0	0	0	0	0	$352	$352	$0	$0	$0	$0	352	352	0	0	0	0	$ 4,211
Conservation, Water Loss Control -	TROPHY CLUB	31	31	0	0	0	0	$914	$914	$0	$0	$0	$0	28,331	28,331	0	0	0	0	$ 338,556
Conservation, Water Loss Control -	TWO WAY SUD	4	4	0	0	0	0	$721	$721	$0	$0	$0	$0	2,884	2,884	0	0	0	0	$ 34,470
Conservation, Water Loss Control -	UNIVERSITY PARK	38	38	0	0	0	0	$8,808	$8,808	$0	$0	$0	$0	334,717	334,717	0	0	0	0	$ 4,000,000
Conservation, Water Loss Control -	VALLEY VIEW	0	0	0	0	0	0	$63	$63	$0	$0	$0	$0	63	63	0	0	0	0	$ 755
Conservation, Water Loss Control -	VAN ALSTYNE	3	3	0	0	0	0	$988	$988	$0	$0	$0	$0	2,963	2,963	0	0	0	0	$ 35,411
Conservation, Water Loss Control -	VENUS	0	0	0	0	0	0	$63	$63	$0	$0	$0	$0	63	63	0	0	0	0	$ 740
Conservation, Water Loss Control -	VIRGINIA HILL WSC	1	1	0	0	0	0	$372	$372	$0	$0	$0	$0	372	372	0	0	0	0	$ 4,442
Conservation, Water Loss Control -	WALNUT CREEK SUD	9	9	0	0	0	0	$705	$705	$0	$0	$0	$0	6,343	6,343	0	0	0	0	$ 75,798
Conservation, Water Loss Control -	WATAUGA	14	14	0	0	0	0	$2,371	$2,371	$0	$0	$0	$0	33,191	33,191	0	0	0	0	$ 396,643
Conservation, Water Loss Control -	WAXAHACHIE	34	34	0	0	0	0	$3,670	$3,670	$0	$0	$0	$0	124,792	124,791	0	0	0	0	$ 1,491,310
Conservation, Water Loss Control -	WEATHERFORD	52	116	1,005	170	266	389	$7,483	$3,509	$151	$1,348	$1,271	$1,202	389,133	407,039	152,173	229,122	338,159	467,515	$ 3,287,593
Conservation, Water Loss Control -	WEST CEDAR CREEK MUD	7	7	0	0	0	0	$651	$651	$0	$0	$0	$0	4,560	4,560					$ 54,495
Conservation, Water Loss Control -	WEST WISE SUD	2	2	0	0	0	0	$968	$968	$0	$0	$0	$0	1,935	1,935	0	0	0	0	$ 23,121
Conservation, Water Loss Control -	WESTLAKE	7	7	0	0	0	0	$486	$486	$0	$0	$0	$0	3,403	3,402	0	0	0	0	$ 40,661
Conservation, Water Loss Control -	WESTON	3	3	0	0	0	0	$1,086	$1,086	$0	$0	$0	$0	3,259	3,259	0	0	0	0	$ 38,948
Conservation, Water Loss Control -	WESTOVER HILLS	19	49	45	46	47	48	$1,792	$696	$740	$724	$709	$695	34,055	34,083	33,282	33,309	33,336	33,362	$ 9,899
Conservation, Water Loss Control -	WESTWORTH VILLAGE	2	2	0	0	0	0	$470	$470	$0	$0	$0	$0	939	939	0	0	0	0	$ 11,224
Conservation, Water Loss Control -	WHITE SETTLEMENT	10	10	0	0	0	0	$541	$541	$0	$0	$0	$0	5,406	5,406	0	0	0	0	$ 64,606
Conservation, Water Loss Control -	WHITESBORO	2	2	0	0	0	0	$514	$514	$0	$0	$0	$0	1,028	1,028	0	0	0	0	$ 12,279
Conservation, Water Loss Control -	WHITEWRIGHT	1	1	0	0	0	0	$954	$954	$0	$0	$0	$0	954	954	0	0	0	0	$ 11,395
Conservation, Water Loss Control -	WILLOW PARK	4	4	0	0	0	0	$839	$839	$0	$0	$0	$0	3,357	3,357	0	0	0	0	$ 40,117
Conservation, Water Loss Control -	WILMER	2	2	0	0	0	0	$481	$481	$0	$0	$0	$0	962	962	0	0	0	0	$ 11,495
Conservation, Water Loss Control -	COUNTY-OTHER, WISE	18	18	0	0	0	0	$408	$408	$0	$0	$0	$0	7,352	7,352	0	0	0	0	$ 87,859
Conservation, Water Loss Control -	WOODBINE WSC	3	3	0	0	0	0	$662	$662	$0	$0	$0	$0	1,986	1,986	0	0	0	0	$ 23,732
Conservation, Water Loss Control -	WORTHAM	0	1	0	0	0	0	$569	$569	$0	$0	$0	$0	569	569	0	0	0	0	$ 6,800
Conservation, Water Loss Control -	WYLIE	37	37	0	0	0	0	$2,557	$2,557	$0	$0	$0	$0	94,616	94,616	0	0	0	0	$ 1,130,695
Conservation, Water Loss Control -	WYLIE NORTHEAST SUD	1	1	0	0	0	0	$12,553	$12,553	$0	$0	$0	$0	12,553	12,553	0	0	0	0	$ 150,000
Conservation, Water Waste	BLACKLAND WSC	0	1	1	1	1	1	$0	$0	$0	$0	$0	$0	0	0	0	0	0	0	$ -

Table Q-11
Supply and Costs by Water User Group for Non-Municipal Water Conservation

Strategy Name	Entity Name	2020 Volume	2030 Volume	2040 Volume	2050 Volume	2060 Volume	2070 Volume	2020 Unit Cost	2030 Unit Cost	2040 Unit Cost	2050 Unit Cost	2060 Unit Cost	2070 Unit Cost	2020 Annual Cost	2030 Annual Cost	2040 Annual Cost	2050 Annual Cost	2060 Annual Cost	2070 Annual Cost	Captial Cost
Conservation, Irrigation - Collin County	IRRIGATION, COLLIN	5	83	159	199	237	275	$310	$310	$310	$310	$310	$310	$1,550	$25,730	$49,290	$61,690	$73,470	$85,250	$ -
Conservation, Irrigation - Dallas County	IRRIGATION, DALLAS	18	294	565	708	841	975	$310	$310	$310	$310	$310	$310	$5,580	$91,140	$175,150	$219,480	$260,710	$302,250	$ -
Conservation, Irrigation - Denton County	IRRIGATION, DENTON	2	37	72	90	107	124	$310	$310	$310	$310	$310	$310	$620	$11,470	$22,320	$27,900	$33,170	$38,440	$ -
Conservation, Irrigation - Freestone County	IRRIGATION, FREESTONE	0	0	0	0	1	1	$310	$310	$310	$310	$310	$310	$0	$0	$0	$0	$310	$310	$ -
Conservation, Irrigation - Grayson County	IRRIGATION, GRAYSON	0	4	9	12	16	19	$310	$310	$310	$310	$310	$310	$0	$1,240	$2,790	$3,720	$4,960	$5,890	$ -
Conservation, Irrigation - Jack County	IRRIGATION, JACK	0	3	6	8	10	11	$310	$310	$310	$310	$310	$310	$0	$930	$1,860	$2,480	$3,100	$3,410	$ -
Conservation, Irrigation - Navarro County	IRRIGATION, NAVARRO	0	2	4	5	5	6	$310	$310	$310	$310	$310	$310	$0	$620	$1,240	$1,550	$1,550	$1,860	$ -
Conservation, Irrigation - Rockwall County	IRRIGATION, ROCKWALL	1	12	24	30	35	41	$310	$310	$310	$310	$310	$310	$310	$3,720	$7,440	$9,300	$10,850	$12,710	$ -
Conservation, Irrigation - Tarrant County	IRRIGATION, TARRANT	8	138	266	334	396	459	$310	$310	$310	$310	$310	$310	$2,480	$42,780	$82,460	$103,540	$122,760	$142,290	$ -
Conservation, Irrigation - Wise County	IRRIGATION, WISE	0	0	1	1	1	1	$310	$310	$310	$310	$310	$310	$0	$0	$310	$310	$310	$310	$ -
Conservation, Manufacturing - Collin County	MANUFACTURING, COLLIN	0	8	90	133	145	157	$310	$310	$310	$310	$310	$310	$0	$2,480	$27,900	$41,230	$44,950	$48,670	$ -
Conservation, Manufacturing - Cooke County	MANUFACTURING, COOKE	0	0	5	8	8	9	$310	$310	$310	$310	$310	$310	$0	$0	$1,550	$2,480	$2,480	$2,790	$ -
Conservation, Manufacturing - Dallas County	MANUFACTURING, DALLAS	0	80	917	1,316	1,367	1,379	$310	$310	$310	$310	$310	$310	$0	$24,800	$284,270	$407,960	$423,770	$427,490	$ -
Conservation, Manufacturing - Denton County	MANUFACTURING, DENTON	0	3	38	57	62	68	$310	$310	$310	$310	$310	$310	$0	$930	$11,780	$17,670	$19,220	$21,080	$ -
Conservation, Manufacturing - Ellis County	MANUFACTURING, ELLIS	0	6	63	88	90	90	$310	$310	$310	$310	$310	$310	$0	$1,860	$19,530	$27,280	$27,900	$27,900	$ -
Conservation, Manufacturing - Grayson County	MANUFACTURING, GRAYSON	0	11	122	175	187	203	$310	$310	$310	$310	$310	$310	$0	$3,410	$37,820	$54,250	$57,970	$62,930	$ -
Conservation, Manufacturing - Kaufman County	MANUFACTURING, KAUFMAN	0	2	20	28	30	32	$310	$310	$310	$310	$310	$310	$0	$620	$6,200	$8,680	$9,300	$9,920	$ -
Conservation, Manufacturing - Parker County	MANUFACTURING, PARKER	0	1	17	25	28	31	$310	$310	$310	$310	$310	$310	$0	$310	$5,270	$7,750	$8,680	$9,610	$ -
Conservation, Manufacturing - Rockwall County	MANUFACTURING, ROCKWALL	0	0	1	1	2	2	$310	$310	$310	$310	$310	$310	$0	$0	$310	$310	$620	$620	$ -
Conservation, Manufacturing - Tarrant County	MANUFACTURING, TARRANT	0	47	556	834	919	999	$310	$310	$310	$310	$310	$310	$0	$14,570	$172,360	$258,540	$284,890	$309,690	$ -
Conservation, Manufacturing - Wise County	MANUFACTURING, WISE	0	0	1	1	1	1	$310	$310	$310	$310	$310	$310	$0	$0	$310	$310	$310	$310	$ -
TOTAL Non-Municipal Conservation		34	731	2,936	4,053	4,488	4,883							$10,540	$226,610	$910,160	$1,256,430	$1,391,280	$1,513,730	

Table Q-12
Cost Estimates for New Water Treatment Plants

WUG	Water Management Strategy	County	MGD	Capital Costs						Annual Cost	Unit Cost with Debt Service ($/ac-ft)	Unit Cost without Debt Service ($/ac-ft)
				2020	2030	240	2050	2060	2070			
Corsicana	Halbert/Richland-Chambers WTP	Navarro	8	$37,370,000						$4,463,487	$1,991	$596
Denison	New Water Treatment Plant	Grayson	4					$19,888,000		$2,375,363	$1,059	$316
Sherman	New Desalination Plant	Grayson	10				$34,657,000			$5,152,611	$919	$401
Walnut Creek SUD*	New Water Treatment Plant	Parker	6		$9,245,000.00					$1,797,388	$534	$303
Walnut Creek SUD	Eagle Mountain WTP	Parker	12						$53,337,000	$6,368,825	$948	$283
Weatherford	New Water Treatment Plant	Parker	14				$60,521,000			$7,226,538	$922	$277

*More detailed cost estimate provided by engineer

Table Q-13
Water Treatment Plant Expansions

WUG	Water Management Strategies	County	Number of Expansions	MGD	Capital Cost 2020	Capital Cost 2030	Capital Cost 2040	Capital Cost 2050	Capital Cost 2060	Capital Cost 2070	Annual Cost	Unit Cost with Debt Service ($/1000 gal)	Unit Cost without Debt Service ($/1000 gal)
Azle	Water treatment plant expansion	Tarrant	1	3	$11,046,000						$1,318,852	$2.47	$0.74
Benbrook	Water treatment plant expansion	Tarrant	1	4.25					$13,715,000		$1,637,362	$2.15	$0.64
Bridgeport	Water treatment plant expansion	Wise	1	2				$8,911,000			$1,064,044	$2.91	$0.87
Bridgeport	Water treatment plant expansion	Wise	1	1.5						$7,844,000	$936,640	$5.88	$1.76
Corsicana	Water Treatment Plant Expansion	Navarro	1	8				$21,689,000			$2,590,229	$1.77	$0.53
Corsicana	Navarro Mills Water Treatment Plant Expansion**	Navarro	1	10				$25,951,000			$3,099,180	$1.70	$0.51
Dallas	Water treatment plant expansion	Dallas	See Q-40 DWU - Infrastructure to Treat and Deliver to Customers										
Denison	Water treatment plant expansion	Grayson	1	4		$13,168,000					$1,572,550	$2.15	$0.64
Denison	Water treatment plant expansion	Grayson	1	4						$13,168,000	$1,572,550	$2.15	$0.64
Denton	30 mgd Ray Roberts Plant Expansion	Denton	1	30	$59,881,000						$7,149,412	$1.30	$0.39
Denton	30 mgd Ray Roberts Plant Expansion	Denton	1	30				$59,881,000			$7,149,412	$1.30	$0.39
Denton	20 mgd Ray Roberts Plant Expansion	Denton	1	20			$42,922,000				$5,124,729	$1.40	$0.42
Denton	Water treatment plant expansion	Denton	1	25					$51,402,000		$6,137,112	$1.34	$0.40
Denton	Water treatment plant expansion	Denton	1	25						$51,402,000	$6,137,112	$1.66	$0.50
East Cedar Creek	Water treatment plant expansion	Henderson	1	2						$8,904,000	$1,063,438	$2.91	$0.87
Ennis	Water treatment plant expansion	Ellis	1	6			$17,433,000				$2,081,748	$1.90	$0.57
Ennis	Water treatment plant expansion	Ellis	1	8					$21,697,000		$2,590,855	$1.77	$0.53
Ennis	Water treatment plant expansion	Ellis	1	16						$36,138,000	$4,314,872	$1.47	$0.44
Fort Worth	Eagle Mountain 35 mgd expansion	Tarrant	1	35		$68,472,000					$8,171,040	$1.28	$0.38
Fort Worth	West Plant 23 mgd expansion	Tarrant	1	23		$48,082,000					$5,738,164	$1.37	$0.41
Fort Worth	Rolling Hills 50 mgd expansion	Tarrant	1	50		$93,960,000					$11,212,092	$1.23	$0.37
Fort Worth	West Plant 35 mgd expansion	Tarrant	1	35			$68,472,000				$8,171,040	$1.28	$0.38
Fort Worth	Eagle Mountain 30 mgd expansion	Tarrant	1	30			$59,977,000				$7,157,383	$1.31	$0.39
Fort Worth	50 mgd expansion	Tarrant	1	50				$93,960,000			$11,212,092	$1.23	$0.37
Fort Worth	50 mgd expansion	Tarrant	1	50				$93,960,000			$11,212,092	$1.23	$0.37
Fort Worth	50 mgd expansion	Tarrant	1	50					$93,960,000		$11,212,092	$1.23	$0.37
Fort Worth	50 mgd expansion	Tarrant	1	50						$93,960,000	$11,212,092	$1.23	$0.37
Fort Worth	50 mgd expansion	Tarrant	1	50						$93,960,000	$11,212,092	$1.23	$0.37
Gainesville	Water treatment plant expansion	Cooke	1	2.5					$9,970,000		$1,190,755	$2.61	$0.78
Gainesville	Water treatment plant expansion	Cooke	1	6						$17,431,000	$2,081,611	$1.94	$0.58
Lewisville	Water treatment plant expansion	Denton	1	6		$17,433,000					$2,081,748	$1.90	$0.57
Lewisville	Water treatment plant expansion	Denton	1	6			$17,433,000				$2,081,748	$1.90	$0.57
Lewisville	Water treatment plant expansion	Denton	1	7				$19,565,000			$2,336,302	$1.85	$0.55
Mabank	Water treatment plant expansion	Kaufman	1	2		$8,905,000					$1,063,535	$2.91	$0.87
Mabank	Water treatment plant expansion	Kaufman	1	3					$11,037,000		$1,318,089	$3.08	$0.92
Mansfield	Water treatment plant expansion	Tarrant	1	20	$42,984,000						$5,129,987	$1.40	$0.42
Mansfield	Water treatment plant expansion	Tarrant	1	20				$42,984,000			$5,129,987	$1.40	$0.42
Mansfield	Water treatment plant expansion	Tarrant	1	15	$34,489,000						$4,116,331	$1.50	$0.45
Mansfield	Water treatment plant expansion	Tarrant	1	16					$36,188,000		$4,319,028	$1.48	$0.44
Midlothian	Water treatment plant expansion	Ellis	1	6	$17,433,000						$2,081,748	$1.90	$0.57
Midlothian	Water treatment plant expansion	Ellis	1	6			$17,433,000				$2,081,748	$1.90	$0.57
Midlothian	Water treatment plant expansion	Ellis	1	6					$17,433,000		$2,081,748	$1.90	$0.57
Parker County SUD	Additional BRA with Treatment Plant	Parker	1	1	$6,776,000						$809,237	$4.60	$1.38
Rockett Special	Water treatment plant expansion	Ellis	4	10	$25,961,000	$25,961,000		$25,961,000		$25,961,000	$3,099,962	$1.70	$0.51
Runaway Bay	Water treatment plant expansion	Wise	1	0.5						$4,078,000	$487,061	$14.90	$4.46
Sherman	Desal Water treatment plant expansion	Grayson	1	10	$17,328,500						$5,152,611	$2.82	$1.23
Sherman	Desal Water treatment plant expansion	Grayson	1	20						$29,478,000	$8,764,458	$2.40	$1.05
Waxahachie	Howard Rd. Water treatment plant	Ellis	1	8		$21,697,000					$2,590,855	$1.77	$0.53
Waxahachie	Howard Rd. Water treatment plant	Ellis	1	10				$25,961,000			$3,099,962	$1.70	$0.51
Waxahachie	Howard Rd. Water treatment plant	Ellis	1	12						$29,353,000	$3,504,932	$1.60	$0.48
Weatherford	Water treatment plant expansion*	Parker	1	8	$36,408,000						$4,597,545	$3.15	$1.06
Weatherford	Water treatment plant expansion	Parker	1	24						$49,781,000	$5,940,946	$1.47	$0.44
West Cedar Creek	Water treatment plant expansion	Henderson	1	6				$17,429,000			$2,081,455	$1.96	$0.59
West Wise SUD	Water treatment plant expansion	Wise	1	0.8				$5,697,000			$680,350	$6.78	$2.03
Wise County WSD	Water treatment plant expansion	Wise	1	10	$25,992,000						$3,102,591	$1.70	$0.51
Wise County WSD	Water treatment plant expansion	Wise	1	10				$25,992,000			$3,102,591	$1.99	$0.59

*More detailed cost estimate provided by city engineer
**Date to be developed is unknown. Assumed 2050. Alternative WMS.

Table Q-14
Gulf of Mexico with Desalination

Probable Owner:	Multiple				
Amount:	200,000				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural (2 pipelines)	78 in.	1,465,625	LF	$541	$1,586,420,000
Pipeline Urban (2 pipelines)	78 in.	65,625	LF	$758	$99,460,000
Right of Way Easements (Rural)		2,931,250	LF	$26	$75,258,000
Right of Way Easements (Urban)		131,250	LF	$65	$8,498,000
Engineering and Contingencies (30%)					$505,764,000
Subtotal of Pipeline					**$2,275,400,000**
Pump Station(s)					
Intake and Pump Station at Gulf	535 MGD	1	EA	$2,615,442	$2,615,000.00
Booster Pump Station	33478 HP	5	EA	$32,270,000	$161,350,000
Ground Storage Tanks (covered)	8 MG	20	EA	$3,195,000	$63,900,000
Engineering and Contingencies (35%)					$79,753,000
Subtotal of Pump Station(s)					**$307,618,000**
Terminal Storage in North Texas					
Ground Storage Tanks (covered)	10 MG	12	EA	$3,998,000	**$47,976,000**
Permitting and Mitigation		1	LS		$15,252,000
WATER TREATMENT FACILITIES					
Additonal water treatment capacity in North Texas		110	MGD		$141,034,000
Treatment Plant with RO		250	MGD		$781,860,000
Engineering and Contingencies (35%)					$323,013,000
Subtotal of Water Treatment					**$1,245,907,000**
Permitting of treatment plant and reject stream					$9,229,000
CONSTRUCTION TOTAL					**$3,901,382,000**
Interest During Construction			**36**	**months**	**$409,645,000**
TOTAL CAPITAL COST					**$4,311,027,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$360,744,000
Raw water purchase					NA
Electricity ($0.09 per kWh)					$56,582,000
Facility Operation & Maintenance					$23,755,000
Water Treatment ($1.24/1,000 gal finished water)					$80,811,000
Reject water disposal ($0.35/1,000 gal)					$22,810,000
Total Annual Costs					**$544,702,000**

Table Q-14, Continued	
UNIT COSTS (During Amortization)	
Per Acre-Foot of treated water	$2,724
Per 1,000 Gallons of treated water	$8.36
UNIT COSTS (After Amortization)	
Per Acre-Foot of treated water	$920
Per 1,000 Gallons of treated water	$2.82

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Multiple - Q-15 Toledo Bend to NMTWD, TRWD and UTRWD				
Cost based on ENR CCI 9552 for Sep-13 and a PPI of 187 for Sep-13				
Item	*Estimated Costs for Facilities*	*TRWD Share*	*NTMWD Share*	*UTRWD Share*
CAPITAL COST				
Intake Pump Stations	$58,672,000	$33,719,540	$16,859,770	$8,092,690
Transmission Pipelines	$3,279,838,000	$2,034,952,138	$769,274,231	$475,611,631
Transmission Pump Station(s) & Storage Tank(s)	$354,420,000	$209,085,080	$88,322,243	$57,012,677
TOTAL COST OF FACILITIES	**$3,692,930,000**	**$2,277,756,759**	**$874,456,244**	**$540,716,997**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,128,534,000	$695,467,701	$267,596,148	$165,470,151
Environmental & Archaeology Studies and Mitigation	$9,406,000	$5,226,207	$2,317,428	$1,862,365
Land Acquisition and Surveying (1312 acres)	$25,696,000	$11,712,011	$4,727,019	$9,256,969
Interest During Construction (4% for 2 years with a 1% ROI)	$282,028,000	$185,127,195	$61,370,814	$35,529,991
TOTAL COST OF PROJECT	**$5,138,594,000**	**$3,175,289,874**	**$1,210,467,653**	**$752,836,473**
ANNUAL COST				
Debt Service (5.5 percent, 20 years)	$432,143,768	$266,685,572	$101,686,895	$63,771,301
Reservoir Debt Service (5.5 percent, 40 years)	$0	$0	$0	$0
Operation and Maintenance				
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$41,812,000	$25,640,069	$9,986,440	$6,185,491
Dam and Reservoir (1.5% of Cost of Facilities)	$0	$0	$0	$0
Water Treatment Plant (2.5% of Cost of Facilities)	$0	$0	$0	$0
Pumping Energy Costs (153352608 kW-hr @ 0.09 $/kW-hr)	$62,106,000	$37,034,299	$15,645,744	$9,425,957
Purchase of Water (174000 acft/yr @ 32.59 $/acft)	$11,342,000	$6,518,391	$3,259,195	$1,564,414
TOTAL ANNUAL COST	**$547,403,768**	**$335,878,330**	**$130,578,274**	**$80,947,163**
Available Project Yield (acft/yr), based on a Peaking Factor of 1.5	348,000	200,000	100,000	48,000
Annual Cost of Water until Amortized ($ per acft)	$1,573	$1,679	$1,306	$1,686
Annual Cost of Water until Amortized ($ per 1,000 gallons)	$4.83	$5.15	$4.01	$5.17
Annual Cost of Water after Amortization ($ per acft)	$331	$346	$289	$358
Annual Cost of Water after Amortization ($ per 1,000 gallons)	$1.02	$1.06	$0.89	$1.10
Note: One or more cost element has been calculated externally				
JSA	*10/20/2015*			

Table Q-16
Marvin Nichols Alternative Strategy for NTMWD, TRWD, UTRWD, Irving

Probable Owner:	NTMWD	160,300 AF/Y	32.8%	
	TRWD	268,700 AF/Y	54.9%	81.7%
	UTRWD	35,000 AF/Y	7.2%	11%
	Irving	25,000 AF/Y	5.1%	8%
	Total	489,000 AF/Y	100.0%	

CONSTRUCTION COSTS					
DAM & RESERVOIR	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Dam and Spillway					$304,790,000
Land Acquisition					$142,889,000
Conflicts					$142,851,000
Mitigation (including land acquisition)					$336,972,000
Permitting					$24,383,000
Total Dam and Reservoir					**$951,885,000**
Total Dam and Reservoir (Including Interest During Construction)					**$1,067,701,000**
Subtotal for Region C Part of Dam & Reservoir					**$1,067,701,000**
NTMWD Portion of Dam & Reservoir	*32.8%*				*$350,206,000*
UTRWD Portion of Dam & Reservoir	*7.2%*				*$76,874,000*
TRWD Portion of Dam & Reservoir	*54.9%*				*$586,168,000*
Irving Portion of Dam & Reservoir	*5.1%*				*$54,453,000*
Subtotal Check					***$1,067,701,000***
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural (Reservoir to Lk. Lavon) x 2	130	419,200	LF	$1,429	$1,197,937,000
Pipeline Urban (Reservoir to Lk. Lavon) x 2	130	10,000	LF	$2,000	$40,000,000
Right of Way Easements Rural (ROW)		419,200	LF	$25	$10,480,000
Right of Way Easements Urban (ROW)		10,000	LF	$150	$1,500,000
Engineering and Contingencies (30%)					$371,381,000
Permitting & Mitigation					$12,379,000
Subtotal of Pipeline (Reservoir to Lake Lavon)					**$1,633,677,000**
Pipeline Rural (Lake Lavon to Lewisville) x 2	102	69,000	LF	$954	$131,677,000
Pipeline Urban (Lake Lavon to Lewisville) x 2	102	103,500	LF	$1,336	$276,552,000
Right of Way Easements Rural (ROW)		69,000	LF	$25	$1,725,000
Right of Way Easements Urban (ROW)		103,500	LF	$150	$15,525,000
Engineering and Contingencies (30%)					$122,469,000
Permitting & Mitigation					$4,082,000
Subtotal of Pipeline (Lake Lavon to Lake Lewisville)					**$552,030,000**
Pipeline Rural (Lake Lewisville to Eagle	96	136,290	LF	$852	$232,294,000
Pipeline Urban (Lake Lewisville to Eagle	96	58,410	LF	$1,193	$139,364,000
Right of Way Easements Rural (ROW)		136,290	LF	$25	$3,407,000
Right of Way Easements Urban (ROW)		58,410	LF	$150	$8,762,000
Engineering and Contingencies (30%)					$111,497,000
Permitting & Mitigation					$3,717,000
Subtotal of Pipeline (Lake Lewisville to Eagle Mountain Lake)					**$499,041,000**
Total Pipeline Cost					**$2,684,748,000**
NTMWD Portion of Pipeline	*32.8% (Res to Lavon)*				*$535,846,000*
TRWD Portion of Pipeline	*54.9% (Res to Lavon) & 81.7% (Lavon to Lewisville) & 100% (Lewisville to*				*$1,846,938,000*
Upper Trinity RWD Portion of Pipeline	*7.2% (Res to Lavon) & 11% (Lavon to Lewisville)*				*$178,348,000*
Irving Portion of Pipeline	*5.1% (Res to Lavon) & 8% (Lavon to Lewisville)*				*$127,480,000*
Total Check					*$2,688,612,000*
Pump Station(s)	**Size (per PS)**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pump Stations with Intake (Reservoir to Lake	42676 HP	2	LS	$50,922,000	$101,844,000
Ground Storage Tanks at booster station	10 MG	7	EA	$3,071,316	$21,499,000
Engineering and Contingencies (35%)					$43,170,000
Permitting & Mitigation					$1,233,000
Subtotal of Pump Station(s) (Reservoir to Lake Lavon)					**$167,746,000**

Table Q-16, Continued					
Pump Station (Lake Lavon to Lake Lewisville)	7955 HP	2	LS	$11,082,000	$22,164,000
Ground Storage Tanks	10 MG	4	EA	$3,071,316	$12,285,265
Engineering and Contingencies (35%)					$12,057,000
Permitting & Mitigation					$344,000
Subtotal of Pump Station(s) (Lake Lavon to Lake Lewisville)					**$46,850,000**
Pump Stations (Lewisville to Eagle Mountain	7563 HP	2	LS	$10,637,000	$21,274,000
Ground Storage Tanks	10 MG	4	EA	$3,071,316	$12,285,000
Engineering and Contingencies (35%)					$11,746,000
Permitting & Mitigation					$336,000
Subtotal of Pump Station(s) (Lake Lewisville to Eagle Mountain Lake)					**$45,641,000**
Total Pump Station Costs (Including Storage Tanks)					**$260,237,000**
NTMWD	*32.8% (Res to Lavon)*				*$55,021,000*
TRWD	*54.9% (Res to Lavon) & 81.7% (Lavon to Lewisville) & 100% (Lewisville to Eagle Mountain)*				*$176,010,000*
UTRWD	*7.2% (Res to Lavon) & 11% (Lavon to Lewisville)*				*$17,231,000*
Irving	*5.1% (Res to Lavon) & 8% (Lavon to Lewisville)*				*$12,303,000*
Total Check					*$260,565,000*
CONSTRUCTION TOTAL					**$4,012,686,000**
Interest During Construction			**36**	**months**	**$309,223,000**
TOTAL CAPITAL COST					**$4,321,909,000**
Capital Cost by User:					
NTMWD					*$1,042,498,000*
TRWD					*$2,778,879,000*
Upper Trinity RWD					*$294,717,000*
Irving					*$210,006,000*
Total Check					*$4,326,100,000*
TOTAL COST ANALYSIS					
NTMWD					**Cost**
Debt Service (5.5% for 20 years)					$57,931,000
Debt Service (5.5% for 40 years) (Reservoirs)					$21,825,000
Electricity ($0.09 kWh)					$15,924,000
Operation & Maintenance					$11,137,000
Total Annual Costs (NTMWD)					**$106,817,000**
TRWD					
Debt Service (5.5% for 20 years)					$183,485,000
Debt Service (5.5% for 40 years) (Reservoirs)					$36,530,000
Electricity ($0.09 kWh)					$46,028,000
Operation & Maintenance					$28,649,000
Total Annual Costs (TRWD)					**$294,692,000**
Upper Trinity RWD					
Debt Service (5.5% for 20 years)					$17,480,000
Debt Service (5.5% for 40 years) (Reservoirs)					$4,791,000
Electricity ($0.09 kWh)					$4,455,000
Operation & Maintenance					$3,058,000
Total Annual Costs (Upper Trinity RWD)					**$29,784,000**
Irving					
Debt Service (5.5% for 20 years)					$12,482,000
Debt Service (5.5% for 40 years) (Reservoirs)					$3,394,000
Electricity ($0.09 kWh)					$1,332,000
Operation & Maintenance					$1,798,000
Total Annual Costs (Irving)					**$19,006,000**
TOTAL ANNUAL					
Debt Service (5% for 20 years)					$271,378,000
Debt Service (5.5% for 40 years) (Reservoirs)					$66,540,000
Electricity ($0.09 kWh)					$67,739,000
Operation & Maintenance					$44,642,000
Total Annual Costs (All Users)					**$450,299,000**
UNIT COSTS (During Amortization)					
NTMWD					
Per Acre-Foot					$666
Per 1,000 Gallons					$2.04

Table Q-16, Continued	
TRWD	
Per Acre-Foot	$1,097
Per 1,000 Gallons	$3.36
Upper Trinity RWD	
Per Acre-Foot	$851
Per 1,000 Gallons	$2.61
Irving	$760
Per Acre-Foot	$2.33
Per 1,000 Gallons	
TOTAL ALL USERS	
Per Acre-Foot	$970
Per 1,000 Gallons	$2.98
ANNUAL COSTS (After Amortization)	
NTMWD	**Cost**
Electricity ($0.09 kWh)	$15,924,000
Operation & Maintenance	$11,137,000
Total Annual Costs (NTMWD)	**$27,061,000**
TRWD	
Electricity ($0.09 kWh)	$46,028,000
Operation & Maintenance	$28,649,000
Total Annual Costs (TRWD)	**$74,677,000**
Upper Trinity RWD	
Electricity ($0.09 kWh)	$4,455,000
Operation & Maintenance	$3,058,000
Total Annual Costs (Upper Trinity RWD)	**$7,513,000**
Irving	
Electricity ($0.09 kWh)	$1,332,000
Operation & Maintenance	$1,798,000
Total Annual Costs (Irving)	**$3,130,000**
TOTAL ALL USERS	
Electricity ($0.09 kWh)	$67,739,000
Operation & Maintenance	$44,642,000
Total Annual Costs	**$112,381,000**
UNIT COSTS (After Amortization)	
NTMWD	
Per Acre-Foot	$169
Per 1,000 Gallons	$0.52
TRWD	
Per Acre-Foot	$278
Per 1,000 Gallons	$0.85
Upper Trinity RWD	
Per Acre-Foot	$215
Per 1,000 Gallons	$0.66
Irving	
Per Acre-Foot	$125
Per 1,000 Gallons	$0.38
TOTAL ALL USERS	
Per Acre-Foot	$242
Per 1,000 Gallons	$0.74

Table Q-17
Sulphur Basin Strategy - TRWD, NTMWD,Dallas UTRWD, & Irving

Probable Owner:	TRWD	157,329 AF/Y	32.2%		
	NTMWD	157,329 AF/Y	32.2%		
	DWU	114,342 AF/Y	23.4%		
	UTRWD	35,000 AF/Y	7.2%		
	Irving	25,000 AF/Y	5.1%		
	Total	489,000 AF/Y	100.0%		
CONSTRUCTION COSTS					
DAM & RESERVOIR	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Dam and Spillway					$328,427,000
Land Acquisition					$82,402,000
Conflicts					$92,404,000
Mitigation (including land acquisition)					$429,021,000
Permitting					$26,274,000
Total Dam and Reservoir					**$958,528,000**
Total Dam and Reservoir (Including Interest During Construction)					**$1,075,151,000**
Subtotal for Region C Part of Dam & Reservoir					**$1,075,151,000**
TRWD Portion of Dam & Reservoir	*32.2%*				*$345,914,500*
NTMWD Portion of Dam & Reservoir	*32.2%*				*$345,914,500*
DWU Portion of Dam & Reservoir	*23.4%*				*$251,401,000*
UTRWD Portion of Dam & Reservoir	*7.2%*				*$76,954,000*
Irving Portion of Dam & Reservoir	*5.1%*				*$54,967,000*
Subtotal Check					***$1,075,151,000***
TRANSMISSION FACILITIES					
Pipeline					**Cost**
TRWD Portion of Pipeline					$919,874,000
NTMWD Portion of Pipeline					$672,790,000
Dallas Portion of Pipeline					$575,502,000
Upper Trinity RWD Portion of Pipeline					$146,791,000
Irving Portion of Pipeline					$54,857,000
Total Pipeline Cost					**$2,369,814,000**
Pump Station(s)					**Cost**
TRWD Portion of Pump Stations					$231,073,000
NTMWD Portion of Pump Stations					$135,369,000
Dallas Portion of Pump Stations					$142,722,000
Upper Trinity RWD Portion of Pump Stations					$36,404,000
Irving Portion of Pump Stations					$51,217,000
Total Pump Station Cost					**$596,785,000**
Interest During Construction					**$716,937,000**
TOTAL TRANSMISSION FACILITY COST (Interest Included)					**$3,683,534,000**
TOTAL CAPITAL COST					**$4,758,685,000**
TRWD					$1,531,041,000
NTMWD					$1,531,041,000
Dallas					$1,112,715,000
Upper Trinity RWD					$340,601,000
Irving					$243,287,000
Total Check					**$4,758,685,000**

Table Q-17, Continued	
ANNUAL COST ANALYSIS	
TRWD	**Cost**
Debt Service (5.5% for20 years)	$128,116,000
Debt Service (5.5% for 40 years) (Reservoirs)	$21,558,000
Electricity ($0.09 kWh)	$29,866,000
Operation & Maintenance	$18,577,000
Total Annual Costs (TRWD)	**$198,117,000**
NTMWD	
Debt Service (5.5% for20 years)	$128,116,000
Debt Service (5.5% for 40 years) (Reservoirs)	$21,558,000
Electricity ($0.09 kWh)	$19,001,000
Operation & Maintenance	$14,233,000
Total Annual Costs (NTMWD)	**$182,908,000**
DWU	
Debt Service (5.5% for20 years)	$93,111,000
Debt Service (5.5% for 40 years) (Reservoirs)	$15,667,000
Electricity ($0.09 kWh)	$18,774,000
Operation & Maintenance	$12,115,000
Total Annual Costs (DWU)	**$139,667,000**
UTRWD	
Debt Service (5.5% for20 years)	$28,501,000
Debt Service (5.5% for 40 years) (Reservoirs)	$4,796,000
Electricity ($0.09 kWh)	$4,789,000
Operation & Maintenance	$3,282,000
Total Annual Costs (UTRWD)	**$41,368,000**
Irving	
Debt Service (5.5% for20 years)	$20,358,000
Debt Service (5.5% for 40 years) (Reservoirs)	$3,426,000
Electricity ($0.09 kWh)	$3,686,339
Operation & Maintenance	$2,448,000
Total Annual Costs (UTRWD)	**$29,918,339**
TOTAL ANNUAL	
Debt Service (5.5% for20 years)	$398,202,000
Debt Service (5.5% for 40 years) (Reservoirs)	$67,005,000
Electricity ($0.09 kWh)	$76,116,339
Operation & Maintenance	$50,655,000
Total Annual Costs (All Users)	**$591,978,000**
UNIT COSTS (During Amortization)	
TRWD	
Per Acre-Foot	$1,259
Per 1,000 Gallons	$3.86
NTMWD	
Per Acre-Foot	$1,163
Per 1,000 Gallons	$3.57
DWU	
Per Acre-Foot	$1,221
Per 1,000 Gallons	$3.75
UTRWD	
Per Acre-Foot	$1,182
Per 1,000 Gallons	$3.63
IRVING	
Per Acre-Foot	$1,197
Per 1,000 Gallons	$3.67

Table Q-17, Continued	
TOTAL ALL USERS	
Per Acre-Foot	$1,211
Per 1,000 Gallons	$3.72
UNIT COSTS (After Amortization)	
TRWD	
Per Acre-Foot	$308
Per 1,000 Gallons	$0.95
NTMWD	
Per Acre-Foot	$211
Per 1,000 Gallons	$0.65
DWU	
Per Acre-Foot	$270
Per 1,000 Gallons	$0.83
UTRWD	
Per Acre-Foot	$231
Per 1,000 Gallons	$0.71
IRVING	
Per Acre-Foot	$245
Per 1,000 Gallons	$0.75
TOTAL ALL USERS	
Per Acre-Foot	$259
Per 1,000 Gallons	$0.79

Table Q-18
Sulphur Basin Supply - TRWD, NTMWD, UTRWD

Probable Owner:	NTMWD	174,800 AF/Y	35.7%	
	TRWD	280,000 AF/Y	57.2%	88.9%
	UTRWD	35,000 AF/Y	7.1%	11.1%
	Total	489,800 AF/Y	100.0%	

CONSTRUCTION COSTS

DAM & RESERVOIR*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Dam and Spillway					$328,427,000
Land Acquisition for reservoir					$82,402,000
Conflicts					$92,404,000
Mitigation (including land purchase)					$429,021,000
Permitting					$26,274,000
Total Dam and Reservoir					**$958,528,000**
Total Dam and Reservoir (Including Interest During Construction)					**$1,075,151,000**
Subtotal for Region C Part of Dam & Reservoir					**$1,075,151,000**
NTMWD Portion of Dam & Reservoir	*35.7%*				*$383,829,000*
UTRWD Portion of Dam & Reservoir	*7.1%*				*$76,336,000*
TRWD Portion of Dam & Reservoir	*57.2%*				*$614,986,000*
Subtotal Check					***$1,075,151,000***

TRANSMISSION FACILITIES

Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural - Patman Intake LPS to BPS #1/MN Tie-in	84	261,944	LF	$628	$164,501,000
Pipeline Urban - Patman Intake LPS to BPS #1/MN Tie-in	84	2,797	LF	$879	$2,459,000
Pipeline Rural (Reservoir to Lk. Lavon) x 2	124	419,200	LF	$1,334	$1,118,150,000
Pipeline Urban (Reservoir to Lk. Lavon) x 2	124	10,000	LF	$1,867	$37,340,000
Right of Way Easements Rural (ROW)		419,200	LF	$25	$10,480,000
Right of Way Easements Urban (ROW)		10,000	LF	$150	$1,500,000
Right of Way Easements Rural (ROW)		261,944	LF	$16	$4,143,000
Right of Way Easements Urban (ROW)		2,797	LF	$94	$262,000
Engineering and Contingencies (30%)					$396,735,000
Permitting & Mitigation					$13,225,000
Subtotal of Pipeline (WP to Lake Lavon)					**$1,748,795,000**
Pipeline Rural (Lake Lavon to Lewisville) x 2	102	69,000	LF	$954	$131,677,000
Pipeline Urban (Lake Lavon to Lewisville) x 2	102	103,500	LF	$1,336	$276,552,000
Right of Way Easements Rural (ROW)		138,000	LF	$25	$3,450,000
Right of Way Easements Urban (ROW)		103,500	LF	$93	$9,589,000
Engineering and Contingencies (30%)				$150.00	$122,469,000
Permitting & Mitigation					$4,082,000
Subtotal of Pipeline (Lake Lavon to Lake Lewisville)					**$547,819,000**
Pipeline Rural (Lake Lewisville to Eagle Mountain	96	136,290	LF	$852	$232,294,000
Pipeline Urban (Lake Lewisville to Eagle Mountain	96	58,410	LF	$1,193	$139,364,000
Right of Way Easements Rural (ROW)		136,290	LF	$25	$3,407,000
Right of Way Easements Urban (ROW)		58,410	LF	$150	$8,762,000
Engineering and Contingencies (30%)					$111,497,000
Permitting & Mitigation					$3,717,000
Subtotal of Pipeline (Lake Lewisville to Eagle Mountain Lake)					**$499,041,000**
Total Pipeline Cost					**$2,795,655,000**
NTMWD Portion of Pipeline	*35.7% (WP to Lavon)*				*$624,320,000*
TRWD Portion of Pipeline	*57.2% (Res to Lavon) & 88.9% (Lavon to Lewisville) & 100% (Lewisville*				*$1,986,363,000*
Upper Trinity RWD Portion of Pipeline	*7.1% (Res to Lavon) & 11.1% (Lavon to Lewisville)*				*$184,972,000*
Total Check					*$2,795,655,000*

Table Q-18, Continued					
Pump Station(s)	**Size (per PS)**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Wright Patman Intake	16219 HP	1	LS	$42,019,000	$42,019,000
Marvin Nichols Pump Stations with Intake (Reservoir to Lake Lavon)	45946 HP	2	LS	$53,956,000	$107,912,000
Ground Storage Tanks at booster station	10 MG	6	EA	$3,071,316	$18,428,000
Engineering and Contingencies (35%)					$58,926,000
Permitting & Mitigation					$1,684,000
Subtotal of Pump Station(s) (Reservoir to Lake Lavon)					**$228,969,000**
Pump Station (Lake Lavon to Lake Lewisville)	6540 HP	2	LS	$9,477,000	$18,954,000
Ground Storage Tanks	10 MG	4	EA	$3,071,316	$12,285,000
Engineering and Contingencies (35%)					$10,934,000
Permitting & Mitigation					$312,000
Subtotal of Pump Station(s) (Lake Lavon to Lake Lewisville)					**$42,485,000**
Pump Stations (Lewisville to Eagle Mountain Lake)	8093 HP	2	LS	$11,238,000	$22,476,000
Ground Storage Tanks	10 MG	4	EA	$3,071,316	$12,285,000
Engineering and Contingencies (35%)					$12,166,000
Permitting & Mitigation					$348,000
Subtotal of Pump Station(s) (Lake Lewisville to Eagle Mountain Lake)					**$47,275,000**
Total Pump Station Costs (Including Storage Tanks)					**$318,729,000**
NTMWD	*21.7% (Res to Lavon)*				*$81,742,000*
TRWD	*69.9% (Res to Lavon) & 88.8% (Lavon to Lewisville) & 100% (Lewisville to Eagle Mountain)*				*$216,014,000*
UTRWD	*8.7% (Res to Lavon) & 11.1% (Lavon to Lewisville)*				*$20,973,000*
Total Check					*$318,729,000*
CONSTRUCTION TOTAL					**$4,189,535,000**
Interest During Construction			**36**	**months**	**$327,010,000**
TOTAL CAPITAL COST					**$4,516,545,000**
Capital Cost by User:					
NTMWD					*$1,206,634,000*
TRWD					*$3,004,413,000*
Upper Trinity RWD					*$305,499,000*
Total Check					*$4,516,545,000*
TOTAL COST ANALYSIS					
NTMWD					**Cost**
Debt Service (5.5% for20 years)					$68,852,000
Debt Service (5.5% for 40 years) (Reservoirs)					$23,920,000
Electricity ($0.09 kWh)					$19,232,000
Operation & Maintenance					$11,981,000
Total Annual Costs (NTMWD)					**$123,985,000**
TRWD					
Debt Service (5.5% for 20 years)					$199,946,000
Debt Service (5.5% for 40 years) (Reservoirs)					$38,326,000
Electricity ($0.09 kWh)					$50,956,000
Operation & Maintenance					$27,237,000
Total Annual Costs (TRWD)					**$316,465,000**
Upper Trinity RWD					
Debt Service (5.5% for 20 years)					$19,176,000
Debt Service (5.5% for 40 years) (Reservoirs)					$4,757,000
Electricity ($0.09 kWh)					$4,826,000
Operation & Maintenance					$2,923,000
Total Annual Costs (Upper Trinity RWD)					**$31,682,000**

Table Q-18, Continued	
TOTAL ANNUAL	
Debt Service (5.5% for 20 years)	$287,974,000
Debt Service (5.5% for 40 years)	$67,003,000
Electricity ($0.09 kWh)	$75,014,000
Operation & Maintenance	$42,141,000
Total Annual Costs (All Users)	**$472,132,000**
UNIT COSTS (During Amortization)	
NTMWD	
Per Acre-Foot	$709
Per 1,000 Gallons	$2.18
TRWD	
Per Acre-Foot	$1,130
Per 1,000 Gallons	$3.47
Upper Trinity RWD	
Per Acre-Foot	$905
Per 1,000 Gallons	$2.78
TOTAL ALL USERS	
Per Acre-Foot	$964
Per 1,000 Gallons	$2.96
ANNUAL COSTS (After Amortization)	
NTMWD	**Cost**
Electricity ($0.09 kWh)	$17,365,000
Operation & Maintenance	$11,981,000
Total Annual Costs (NTMWD)	**$29,346,000**
TRWD	
Electricity ($0.09 kWh)	$47,964,000
Operation & Maintenance	$27,237,000
Total Annual Costs (TRWD)	**$75,201,000**
Upper Trinity RWD	
Electricity ($0.09 kWh)	$4,455,000
Operation & Maintenance	$2,923,000
Total Annual Costs (Upper Trinity RWD)	**$7,378,000**
TOTAL ALL USERS	
Electricity ($0.09 kWh)	$75,014,000
Operation & Maintenance	$42,141,000
Total Annual Costs	**$117,155,000**
UNIT COSTS (After Amortization)	
NTMWD	
Per Acre-Foot	$168
Per 1,000 Gallons	$0.51
TRWD	
Per Acre-Foot	$269
Per 1,000 Gallons	$0.82
Upper Trinity RWD	
Per Acre-Foot	$211
Per 1,000 Gallons	$0.65
TOTAL ALL USERS	
Per Acre-Foot	$239
Per 1,000 Gallons	$0.73

* Cost includes construction of dam at Marvin Nichols and costs associated with Wright Patman reallocation.

Table Q-19
NTMWD - Removal of Chapman Silt Barrier

Probable Owner:	North Texas MWD	NTMWD	3,620 AF/Y
Amount:	8036 Acre-Feet/Year	UTRWD	998 AF/Y
		IRVING	3418 AF/Y

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Channel	**Quantity**		**Unit Cost**	**Total Cost**
Mobilization	1	LS	$108,077	$108,000
Disposal Systems Design and Construction	1	LS	$374,000	$374,000
Sediment Material Dredging and Disposal from Intake Ch	46000	CY	$24.00	$1,104,000
Sefiment Material Removal and Disposal from Inside Stru	300	CY	$25.00	$7,500
In-Lake Tree Stump Removal	25	EA	$100.00	$2,500
In-Lake Log Removal	25	EA	$100.00	$2,500
Storm Water Pollution Prevention Plan	1	LS	$3,000	$3,000
Trench Safety System	300	LF	$25.00	$7,500
Seeding	43	AC	$63.95	$2,750
Native Grass Seeding	2	AC	$75.00	$150
Permanent Gates	3	EA	$300	$900
Permanent Barbed Wire Fencing	4930	LF	$3.41	$16,800
Permanent 8" Flexbase Road	2140	SY	$35.05	$75,000
TSS Portable Monitoring Kit	1	EA	$2,500	$2,500
36-hr Shutdown	5	EA	$0.00	$0
Rapid Dewatering and Disposal	46300	CY	$0.00	$0
Odor Control	1	EA	$5,000	$5,000
Additional Price for Dreding below 423'	0	CY	$50,000	$50,000
Total				**$1,762,000**
Interest During Construction		**6**	**months**	**$31,000**
TOTAL CAPITAL COST				**$1,793,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$150,000
Total Annual Costs				**$150,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot of raw water				$19
Per 1,000 Gallons of raw water				$0.06
UNIT COSTS (After Amortization)				
Per Acre-Foot of raw water				NA
Per 1,000 Gallons of raw water				NA

Table Q-20
NTMWD - Dredge Lake Lavon

Probable Owner: North Texas MWD
Amount: 7959 Acre-Feet/Year

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Channel	**Quantity**		**Unit Cos**	**Total Cost**
Mobilization	1	LS	270,000	$270,000
Disposal Systems Design and Construction	1	LS	350,000	$350,000
Sediment Material Dredging and Disposal from Intake Channel	34,500	CY	29.60	$1,021,200
Mobilixation for Sediment Removal and Disposal from Inside Structures	1	LS	35,000	$35,000
Sefiment Material Removal and Disposal from Inside Structures	600	CY	37.50	$22,500
In-Lake Tree Stump Removal	25	EA	1,000	$25,000
In-Lake Log Removal	25	EA	150	$3,750
Storm Water Pollution Prevention Plan	1	LS	5,000	$5,000
Trench Safety System	120	LF	35.00	$4,200
Seeding	3	AC	1,500	$4,500
Native Grass Seeding	1	AC	1,750	$1,750
Permanent Gates	1	EA	1,500	$1,500
Permanent Barbed Wire Fencing	3,400	LF	22.00	$74,800
Permanent 8" Flexbase Road	200	SY	30.00	$6,000
TSS Portable Monitoring Kit	1	EA	3,000	$3,000
36-hr Shutdown	5	EA	15,000	$75,000
Odor Control	1	EA	30,000	$30,000
Total				**$1,933,000**
Interest During Construction		**6**	**months**	**$34,000**
TOTAL CAPITAL COST				**$1,967,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$165,000
Total Annual Costs				**$165,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot of raw water				$21
Per 1,000 Gallons of raw water				$0.06
UNIT COSTS (After Amortization)				
Per Acre-Foot of raw water				NA
Per 1,000 Gallons of raw water				NA

Table Q-21
NTMWD - Additional Measures to Access Full Lake Lavon Yield

Owner:	NTMWD		
Amount:	14,461 Ac-Ft/Yr		
Total Construction Costs, Including Easements			$20,465,000
Interest During Construction	Months	6	$358,000
TOTAL CAPITAL COST			**$20,823,000**
ANNUAL COSTS			
Debt Service (5.5 percent for 20 years)			$1,742,000
Electricity			$707,000
Operation and Maintenance			$512,000
Total Annual Costs			**$2,961,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot			$205
Per 1,000 Gallons			$0.63
UNIT COSTS (After Amortization)			
Per Acre-Foot			$84
Per 1,000 Gallons			$0.26

Table Q-22 NTMWD - Main Stem Pump Station					
Owner:	NTMWD				
Total Project	90,801 AF/Y			MGD	90 MGD Capacity
NTMWD Share of the Project	**56,050 AF/Y**			**MGD**	90,800 AFY Supply
Item	**Size**	**Quantity**	**Unit**	**Total Project Cost**	**NTMWD Share**
Intake Pump Station Facilities			LS	$37,426,000	$23,102,000
NTMWD Transmission System			LS	$54,193,000	$33,452,000
Conveyance Pump Station Expansion			LS	$7,098,000	$4,381,000
Total Cost of Facilities				**$98,717,000**	**$60,936,000**
Engineering, permitting and contingencies			LS	$5,925,000	$3,657,000
CONSTRUCTION TOTAL				**$104,642,000**	**$64,594,000**
Power to Site			LS	$1,000,000	$617,000
Land Acquisition and Surveying			LS	$3,427,000	$2,115,000
Lock and Dam Structure			LS	$1,551,000	$957,000
Wetlands Phosphorous Removal			LS	$1,674,000	$1,033,000
TOTAL CAPITAL COST				**$112,294,000**	**$69,317,000**
Interest During Construction		**12**	**M**	$3,930,000	$2,426,000
TOTAL COST				**$116,224,000**	**$71,743,000**
Annual Costs					
Debt Service (5.5 percent for 20 years)				$9,726,000	$6,004,000
Electricity				$2,530,000	$1,562,000
Operation and Maintenance				$1,655,000	$1,022,000
Total Annual Cost				**$13,911,000**	**$8,587,000**
Available Project Yield (ac-ft/yr)				90,801	56,000
UNIT COSTS (During Amortization)					
Water Cost ($ per ac-ft)				**$153**	**$153**
Water Cost ($ per 1,000 gallons)				**$0.47**	**$0.47**
UNIT COSTS (After Amortization)					
Water Cost ($ per ac-ft)				**$46.09**	**$46.14**
Water Cost ($ per 1,000 gallons)				**$0.14**	**$0.14**
*Planned capacity of facilities is greater than the available supply.					

Table Q-23
NTMWD - Lower Bois d'Arc Creek Reservoir Site

Owner: NTMWD
Quantity 120,200 AF/Y

CONSTRUCTION COSTS					
Dam & Reservoir	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Clearing and Grubbing		115	Ac	$6,940	$798,000
Care of Water During Construction		1	LS	$822,000	$822,000
Trench Safety		3,000	LF	$10.00	$30,000
Stormwater Pollution Protection Plan		1	LS	$250,000	$250,000
Required Excavation		3,335,000	CY	$2.80	$9,338,000
Borrow Excavation		1,814,100	CY	$2.10	$3,810,000
Random Compacted Fill		1,942,000	CY	$2.80	$5,438,000
Core Compacted Fill		2,739,000	CY	$2.80	$7,669,000
Soil Bentonite Slurry Trench		421,500	SF	$14.00	$5,901,000
Soil Cement		184,000	CY	$76.00	$13,984,000
Flex Base Roadway		11,000	CY	$36.00	$396,000
Sand Filter Drain		191,000	CY	$42.00	$8,022,000
Grassing		139	AC	$5,560	$773,000
Service Spillway Reinforced Concrete		14,100	CY	$440	$6,204,000
Service Spillway Roller Compacted Concrete		16,300	CY	$95.00	$1,549,000
Service Spillway Bridge		2,000	SF	$176	$352,000
Service Spillway Outlet Works (Gates, Operators, Trashrac		1	LS	$1,500,000	$1,500,000
Barrier and Warning Systems		1	LS	$58,000	$58,000
Embankment Instrumentation		1	LS	$290,000	$290,000
Timber Guard Posts and Guard Rail		1	LS	$64,000	$64,000
Misc. Internal Drainage (Embankment and Service Spillwa		1	LS	$350,000	$350,000
Lake Bonham Dam Modifications		1	LS	$426,700	$427,000
Mobilization		1	LS	$4,168,700	$4,169,000
Subtotal for Construction					**$72,194,000**
Contingency, Engineering, Permitting, Surveying					$13,466,000
Land and Surveying					$83,160,000
Construction Inspection					$4,176,000
Subtotal for Dam & Reservoir					**$172,996,000**
Conflicts					**$14,075,000**
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline to Leonard WTP					
Pipe (installed)	90 in.	186,074	LF	$150,727,000	$150,727,000
Right of Way Easements (ROW)		35.2	LF	$189,000	$6,672,000
Contingency, Engineering, Permitting, Surveying					$25,850,000
Subtotal of Pipeline					**$183,249,000**
Raw Water Intake					
Intake		1	LS	$14,147,000	$14,147,000
Mobilization		1	LS	$707,000	$707,000
Contingency, Engineering, Permitting, Surveying, Inspection					$4,449,000
Subtotal of Intake					**$19,303,000**

Table Q-23, Continued				
Raw Water Pump Station				
Pump Station	1	LS	$28,318,000	$28,318,000
Contingency, Engineering, Permitting, Surveying, Inspectio	1	LS	$8,482,000	$8,482,000
Subtotal of Pump Station				**$36,800,000**
Terminal Storage at Leonard WTP*				
Construction	1	LS	$22,304,000	$22,304,000
Contingency, Engineering, Permitting, Surveying, Inspectio	1	LS	$6,870,000	$6,870,000
Land and Survey	1	LS	$1,500,000	$1,500,000
Subtotal Terminal Storage				**$30,674,000**
CONSTRUCTION TOTAL				**$457,097,000**
Permitting and Mitigation of reservoir and terminal storage				
Permitting	1 LS		$61,638,000	$61,638,000
Contingency,Engineering, Permitting Surveying, Inspection	1 LS		$19,354,000	$19,354,000
Land and Easement	1 LS		$39,526,000	$39,526,000
Subtotal Reservoir Permitting and Mitigation				**$120,518,000**
Interest During Construction (36 months)			**36 months**	**$47,995,000**
TOTAL CAPITAL COST				**$625,610,000**
ANNUAL COSTS				**Cost**
Debt Service (5.5% for 20 years)				$52,351,000
Electricity ($0.09 kWh)				$4,561,000
Operation & Maintenance				$3,924,000
Total Annual Costs				**$60,836,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$506
Per 1,000 Gallons				$1.55
UNIT COSTS (After Amortization)				
Per Acre-Foot				$71
Per 1,000 Gallons				$0.22
* Preliminary cost esimtates for modification of existing structure.				

Table Q-24
NTMWD & Irving - Lake Chapman Pump Station Expansion

Owner: North Texas Municipal Water District and Irving
Amount: 0 Ac-Ft/Yr

Pump Station Expansion at Lake Chapman (225 MGD capacity)					
		Quantity	**Unit**	**Unit Price**	**Total Price**
New 4,000 HP Vertical Centrifugal Pumps		6	EA	$ 1,451,000	$ 8,706,000
Piping, Values and Misc. Equipment		1	LS	$ 8,934,000	$ 8,934,000
Electrical and Instrumentation		1	LS	$ 4,030,000	$ 4,030,000
Ground Storage Tanks	10 MG	2	EA	$ 682,095	$ 1,364,000
Construction Sub Total					**$23,034,000**
Engineering & Contingencies (35%)					**$8,062,000**
Capital Cost Subtotal					**$31,096,000**
Interest During Construction			12	Months	$1,088,000
Power Supply					$2,000,000
Total Capital Costs					**$34,184,000**
Irving Share (25%)					**$8,546,000**
NTMWD Share (75%)					**$25,638,000**
ANNUAL COSTS					
Debt Service					$2,483,000
Operation and Maintenance					$691,000
Total Annual Cost					**$3,174,000**
Irving Share (25%)					**$857,000**
NTMWD Share (75%)					**$2,317,000**

Table Q-25
NTMWD - Additional Lake Texoma Supply Blend with Lower Bois D'arc

Probable Owner: North Texas MWD		35.3 Average MGD			
Amount: 39,571 Acre-Feet/Year		70.6 Peak MGD			
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline (Rural)	66 in.	274,791	LF	$395	$108,626,000
Right of Way Easements (ROW)	40 ft.	274,791	LF	$16	$4,294,000
Engineering and Contingencies (30%)					$32,588,000
Subtotal of Pipeline					**$145,508,000**
Pump Station(s)					
Add 2 Pumps to existing Facility	2600 HP	1	EA	$9,461,000	$9,461,000
Engineering and Contingencies (35%)					$3,311,000
Subtotal of Pump Station(s)					**$12,772,000**
Two Day Terminal Storage (140 MG)					
Compacted Fill		401,745	CY	$7.37	$2,960,000
12" Soil Cement		28,148	CY	$73.45	$2,068,000
HDPE Liner		84,445	SY	$4.63	$391,000
Roads		3,968	SY	$22.33	$89,000
Grassing		7	AC	$5,023.26	$35,000
Control structures		1	EA	$367,256	$514,000
Fencing		2,449	LF	$22.33	$55,000
Mobilization		0	LS	$0.05	$306,000
Engineering and Contingencies (35%)					$2,246,000
Subtotal Terminal Storage					**$8,664,000**
Permitting and Mitigation					**$1,345,000**
CONSTRUCTION TOTAL					**$168,289,000**
Interest During Construction			**12**	**Months**	**$5,890,000**
TOTAL CAPITAL COST (NTMWD)					**$174,179,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$14,575,000
Raw water purchase					$3,379,000
Electricity ($0.09 per kWh)					$844,000
Facility Operation & Maintenance					$1,697,000
Total Annual Costs					**$20,495,000**
UNIT COSTS (During Amortization) (NTMWD)					
Per Acre-Foot of raw water					$518
Per 1,000 Gallons of raw water					$1.59
UNIT COSTS (After Amortization) (NTMWD)					
Per Acre-Foot of raw water					$150
Per 1,000 Gallons of raw water					$0.46

Table Q-26
NTMWD - Additional Lake Texoma Blend with Sulphur Basin Water

Probable Owner: NTMWD
Amount: 58,267 Acre-Feet/Year
Peak Delivery 104.0 MGD

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline (rural)	78 in.	223,959	LF	$541	$121,209,000
Pipeline (urban)	78 in.	109,375	LF	$758	$82,884,000
Right of Way Easements (Rural)	100 ft.	223,959	LF	$65	$14,500,000
Right of Way Easements (Urban)	100 ft.	109,375	LF	$154	$16,849,000
Engineering and Contingencies (30%)					$61,228,000
Subtotal of Pipeline					**$296,670,000**
Pump Station(s)					
Lakeside Pump Station	11000 HP	1	EA	$18,655,000	$18,655,000
Engineering and Contingencies (35%)					$6,529,000
Subtotal of Pump Station(s)					**$25,184,000**
Terminal Storage (200 MG)					
Compacted Fill		573,922	CY	$7.37	$4,228,000
12" Soil Cement		40,212	CY	$73.45	$2,954,000
HDPE Liner		120,636	SY	$4.63	$559,000
Roads		5,668	SY	$22.33	$127,000
Grassing		10	AC	$5,023.26	$50,000
Control structures		2	EA	$367,255.81	$735,000
Fencing		3,498	LF	$22.33	$78,000
Mobilization		1	LS	5.00%	$437,000
Engineering and Contingencies (35%)					$3,209,000
Subtotal Terminal Storage					**$12,377,000**
Permitting and Mitigation					**$1,611,000**
CONSTRUCTION TOTAL					**$335,842,000**
Interest During Construction			**12 Months**		$11,754,000
TOTAL CAPITAL COST (NTMWD)					**$347,596,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$29,087,000
Raw water purchase					$3,379,000
Electricity ($0.09 per kWh)					$1,734,000
Facility Operation & Maintenance					$3,166,000
Total Annual Costs					**$37,366,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of raw water					$641
Per 1,000 Gallons of raw water					$1.97
UNIT COSTS (After Amortization) (NTMWD)					
Per Acre-Foot of treated water					$142
Per 1,000 Gallons of treated water					$0.44

Q-26A
UTRWD - Lake Texoma Blend with Sulphur Basin Water

Probable Owner: UTRWD
Amount: 25,000 Acre-Feet/Year
Peak Delivery 44.6 MGD

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline (rural)	54 in.	223,959	LF	$301	$67,388,000
Pipeline (urban)	54 in.	109,375	LF	$421	$45,997,000
Right of Way Easements (Rural)	100 ft.	223,959	LF	$38	$8,500,000
Right of Way Easements (Urban)	100 ft.	109,375	LF	$93	$10,134,000
Engineering and Contingencies (30%)					$34,016,000
Subtotal of Pipeline					**$166,035,000**
Pump Station(s)					
Lakeside Pump Station	5000 HP	1	EA	$12,368,000	$12,368,000
Engineering and Contingencies (35%)					$4,329,000
Subtotal of Pump Station(s)					**$16,697,000**
Terminal Storage (100 MG)					
Compacted Fill		286,961	CY	$7.37	$2,114,000
12" Soil Cement		20,106	CY	$73.45	$1,477,000
HDPE Liner		60,318	SY	$4.63	$279,000
Roads		2,834	SY	$22.33	$63,000
Grassing		5	AC	$5,023.26	$25,000
Control structures		1	EA	$367,255.81	$367,000
Fencing		1,749	LF	$22.33	$39,000
Mobilization		1	LS	5.00%	$218,000
Engineering and Contingencies (35%)					$1,604,000
Subtotal Terminal Storage					**$6,186,000**
Permitting and Mitigation					**$1,611,000**
CONSTRUCTION TOTAL					**$190,529,000**
Interest During Construction			**12 Months**		$6,669,000
TOTAL CAPITAL COST (UTRWD)					**$197,198,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$16,501,000
Raw water purchase					$3,379,000
Electricity ($0.09 per kWh)					$808,000
Facility Operation & Maintenance					$1,811,000
Total Annual Costs					**$22,499,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of raw water					$900
Per 1,000 Gallons of raw water					$2.76
Q-26A, Continued					
UNIT COSTS (After Amortization)					
Per Acre-Foot of treated water					$240
Per 1,000 Gallons of treated water					$0.74

Table Q-27
NTMWD - Oklahoma Water

Probable Owner:	NTMWD				
Quantity:	50,000 AF/Y				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural	60	274,560	LF	$338	$92,733,000
30-ft Right of Way Easements (ROW)		274,560	LF	$16	$4,291,000
Red River Tunnel		1,000	LF	$994	$994,000
Engineering and Contingencies (30%)					$29,405,000
Subtotal of Pipeline					**$127,423,000**
Pump Station(s)					
Pumps with intake & building	6800 HP	1	LS	$14,223,000	$14,223,000
Chapman Pump Station Expansion					$791,000
Booster on Chapman-Lavon Line					$9,506,000
Engineering and Contingencies (35%)					$8,582,000
Subtotal of Pump Station(s)					**$33,102,000**
CONSTRUCTION TOTAL					**$160,525,000**
Permitting and Mitigation					**$1,398,000**
Interest During Construction				**12 Months**	$5,618,000
TOTAL CAPITAL COST					**$167,541,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$14,020,000
Electricity ($0.09 per kWh)					$7,148,000
Operation & Maintenance					$1,861,000
Raw Water Purchase					$2,444,000
Total Annual Costs					**$25,473,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$509
Per 1,000 Gallons					$1.56
UNIT COSTS (After Amortization)					
Per Acre-Foot					$229
Per 1,000 Gallons					$0.70

Note: Cost for buying raw water is assumed to be $0.15 per 1,000 gallons

Table Q-28 NTMWD Treatment & Treated Water Distribution Improvements		
Probable Amount	**554,189**	**AF/Y**
OWNER:	NTMWD	
Construction Costs (Including Engineering and Contingencies)		**Cost**
2010-2020		
Water Distribution System Improvements - Pipelines		319,522,000
Water Distribution System Improvements - Pump Stations		136,376,000
WTP Construction and Expansion (180 MGD)		481,474,000
Storage Tanks		43,223,000
Other		534,000
Subtotal		**$981,129,000**
Interest during Construction (12 months)	12	$34,340,000
Total 2010-2020 Cost		**$1,015,469,000**
Annual Costs (2010-2020 Improvements)		
Debt Service (20 years at 5.5%)		$84,974,000
Facility Operation and Maintenance		$6,605,000
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)		$20,454,000
Total Pre-Amortization		**$112,033,000**
Total After Amortization		**$27,059,000**
2020-2030		
Water Distribution System Improvements - Pipelines		293,673,000
Water Distribution System Improvements - Pump Stations		99,831,000
WTP Construction and Expansion (210 MGD)		664,884,000
Storage Tanks		3,751,000
Subtotal		**$1,062,139,000**
Interest during Construction (12 months)	12	$37,175,000
Total 2020-2030 Cost		**$1,099,314,000**
Annual Costs (2020-2030 Improvements)		
Debt Service (20 years at 5.5%)		$91,990,000
Facility Operation and Maintenance		$5,433,000
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)		$23,863,000
Total Pre-Amortization		**$121,286,000**
Total After Amortization		**$29,296,000**
2030-2040		
Water Distribution System Improvements - Pipelines		402,130,000
Water Distribution System Improvements - Pump Stations		41,251,000
WTP Construction and Expansion (140 MGD)		$197,230,000
		$640,611,000

Table Q-28 Continued		
Interest during Construction (12 months)	12	$22,421,000
Total 2030-2040 Cost		**$663,032,000**
Annual Costs (2030-2040 Improvements)		
Debt Service (20 years at 5.5%)		$55,482,000
Facility Operation and Maintenance		$5,053,000
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)		$15,909,000
Total Pre-Amortization		**$76,444,000**
Total After Amortization		**$20,962,000**
2040-2050		
Water Distribution System Improvements - Pipelines		327,821,000
Water Distribution System Improvements - Pump Stations		111,439,000
WTP Construction and Expansion (210 MGD)		$241,786,000
		$681,046,000
Interest during Construction (12 months)	12	$23,837,000
Total 2040-2050 Cost		**$704,883,000**
Annual Costs (2040-2050 Improvements)		
Debt Service (20 years at 5.5%)		$58,984,000
Facility Operation and Maintenance		$6,064,000
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)		$23,863,000
Total Pre-Amortization		**$88,911,000**
Total After Amortization		**$29,927,000**
2050-2060		
Water Distribution System Improvements - Pipelines		327,821,000
Water Distribution System Improvements - Pump Stations		111,439,000
WTP Construction and Expansion (140 MGD)		$161,191,000
		$600,451,000
Interest during Construction (12 months)	12	$21,016,000
Total 2050-2060 Cost		**$621,467,000**
Annual Costs (2050-2060 Improvements)		
Debt Service (20 years at 5.5%)		$52,004,000
Facility Operation and Maintenance		$5,155,000
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)		$15,909,000
		$73,068,000
2060-2070		
WTP Construction and Expansion (140 MGD)		$161,191,000
		$161,191,000
Interest during Construction (12 months)	12	$5,642,000
Total 2060-2070 Cost		**$166,833,000**

Table Q-28 Continued	
Annual Costs (2060-2070 Improvements)	
Debt Service (20 years at 5.5%)	$13,960,000
Facility Operation and Maintenance	$0
WTP Operation and Maintenance (@ $0.70/1000 gal - 2.25 Peak)	$15,909,000
	$29,869,000
Total Capital Costs	**$4,270,998,000**
ANNUAL COSTS	
Debt Service (5.5% for 20 years)	$357,394,000
Electricity ($0.09 per kWh)	$0
Facility Operation & Maintenance	$107,346,000
Total Annual Costs	**$464,740,000**
UNIT COSTS (During Amortization)	
Per Acre-Foot of raw water	$839
Per 1,000 Gallons of raw water	$2.57
UNIT COSTS (After Amortization)	
Per Acre-Foot of raw water	$194
Per 1,000 Gallons of raw water	$0.59

Table Q-29
NTMWD - Lake of the Pines (From Lake of the Pines to New WTP at Farmersville)

Probable Owner: NTMWD
Quantity: 87,900 AF/Y

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural (from LOTP to Chapman)	72	451,700	LF	$462	$208,889,000
Pipeline Rural (end of existing Chapman line to new WTP at Farmersville)	72	11,000	LF	$462	$5,087,000
30-ft Right of Way Easements (ROW)		462,700	LF	$16	$7,231,000
Engineering and Contingencies (30%)					$64,193,000
Subtotal of Pipeline					**$285,400,000**
Pump Station(s)					
Pump at LOTP with intake & building	7500 HP	1	LS	$14,944,325	$14,944,000
Booster Pump Station	5000 HP	1	LS	$7,731,111	$7,731,000
Pump Station at Lake Chapman	12000 HP	1	LS	$19,788,347	$19,788,000
Engineering and Contingencies (35%)					$14,862,000
Subtotal of Pump Station(s)					**$57,325,000**
Ground Storage					
Ground Storage Tanks at Booster	6 MG	2	LS	$1,752,093	$3,504,000
Engineering and Contingencies (35%)					$1,226,000
Subtotal of Ground Storage					**$4,730,000**
CONSTRUCTION TOTAL					**$347,455,000**
Permitting and Mitigation					**$2,260,000**
Interest During Construction			**Months**	12	$12,161,000
TOTAL CAPITAL COST					**$361,876,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$26,290,000
Electricity ($0.09 per kWh)					$8,748,000
Operation & Maintenance					$3,947,000
Raw Water Purchase					$8,593,000
Total Annual Costs					**$47,578,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of Raw water					$541
Per 1,000 Gallons					$1.66
UNIT COSTS (After Amortization)					
Per Acre-Foot					$242
Per 1,000 Gallons					$0.74

Table Q-30			
NTMWD - Lake Texoma Already Authorized with Desal at Sherman			
Probable Owner: North Texas MWD		35 Average MGD	
Amount: 39,235 Acre-Feet/Year p		70 Peak MGD	
CONSTRUCTION COSTS			
Desalination Treatment			$330,530,000
Desalination Treatment Power			$7,165,000
84-Inch Raw Water Pipeline - Lake Texoma to Sherman			$49,822,000
60-Inch Treated Water - Sherman to Hwy 5			$113,347,000
24-Inch Brine Effluent Pipeline - Sherman to Red River			$24,967,000
71-Inch N Mckinney Pipeline Phase III - Hwy 5 to Mckinney No. 1			$19,752,000
Brine Disposal Pump Station (10 MGD)			$4,068,000
Sherman to Hwy 5 High Service Pump Station			$23,397,000
Texoma Pump Station Modifications			$8,814,000
TOTAL COST			$581,862,000
Interest During Construction	**24**	**Months**	$40,730,000
TOTAL CAPITAL COST			**$622,592,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$54,280,000
Facility Operation & Maintenance			$8,051,000
Electricity			$29,722,000
Total Annual Costs			**$92,053,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot of treated water			$2,346
Per 1,000 Gallons of treated water			$7.20
UNIT COSTS (After Amortization)			
Per Acre-Foot of treated water			$963
Per 1,000 Gallons of treated water			$2.96

Table Q-31
NTMWD - Freestone/Anderson County Groundwater (Forestar)

Owner:	NTMWD					
Quantity:	42,000 AF/Y					
Peak Flow:	46.8 MGD					
Average Flow	37.5 AMGD					

Item	Size		Quantity	Unit	Unit Price	Cost
Capital Costs						
Transmission Pipeline	60	306,240	1	LS	$338	$103,433,000
Transmission ROW	100	306,240	1	LS	$26	$7,863,000
Well Fields (Wells, Pumps, and Piping)			1	LS	$42,118,008	$42,118,000
Storage Tanks		3.125	3	LS	$1,494,432	$4,483,000
Transmission Pump station & Storage Tank		2069 HP	3	LS	$4,407,000	$13,221,000
Total Cost of Facilities						**$171,118,000**
Engineering and Contingencies (35% for pump stations, 30% for other items)						**$49,638,000**
Environmental & Mitigation & Surveying						**$1,508,000**
Total Construction Costs						$222,264,000
Interest During Construction				**12**	**Months**	$7,779,000
TOTAL CAPITAL COST						**$230,043,000**
Annual Costs						
Debt Service (5.5 percent for 20 years)						$19,250,000
Pumping Costs						$1,878,000
Operation and Maintenance						$2,197,000
Purchase of Water (100,000 acft/yr @ $50 per ac-ft)						$2,100,000
Total Annual Cost						**$25,425,000**
UNIT COSTS (During Amortization)						
Water Cost ($ per ac-ft)						**$605**
Water Cost ($ per 1,000 gallons)						**$1.86**
UNIT COSTS (After Amortization)						
Water Cost ($ per ac-ft)						**$147**
Water Cost ($ per 1,000 gallons)						**$0.45**

Table Q-32
NTMWD - George Parkhouse Reservoir (North)

Probable Owner: NTMWD — Total yield = 148,700 AF/Y
Quantity: 118,960 AF/Y

CONSTRUCTION COSTS

Dam & Reservoir	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Excavation					
Approach Channel		107,400	CY	$2.94	$316,000
Discharge Channel		114,600	CY	$2.94	$337,000
Spillway		472,200	CY	$2.94	$1,387,000
Fill				$0.00	$0
Random Compacted Fill		4,790,900	CY	$2.94	$14,077,000
Impervious Fill		1,107,200	CY	$3.67	$4,066,000
Filter		558,600	CY	$44.07	$24,619,000
Bridge		390	LF	$1,616.02	$630,000
Roadway		96,067	SY	$26.44	$2,540,000
Slurry Trench		1,092,500	SF	$17.63	$19,260,000
Soil Cement		324,340	CY	$95.49	$30,972,000
Elevator		1	LS	$146,910.84	$147,000
Barrier Warning System		936	LF	$132.22	$124,000
Gates				$0.00	$0
Gate & Anchor		4,480	SF	$345.24	$1,547,000
Stop Gate & Lift		160	LF	$2,350.57	$376,000
Hoist		8	Ea	$330,549.39	$2,644,000
Electrical		1	LS	$734,554.20	$735,000
Power Drop		1	LS	$293,821.68	$294,000
Spillway Low-Flow System		1	LS	$514,187.94	$514,000
Stop Gate Monorail System		390	LF	$1,175.29	$458,000
Embankment Internal Drainage		39,300	LF	$78.39	$3,081,000
Guardrail		780	LF	$37.12	$29,000
Grassing		28	Ac	$5,876.43	$165,000
Concrete (mass)		97,000	CY	$183.64	$17,813,000
Concrete (walls)		7,000	CY	$697.83	$4,885,000
Mobilization (5% of subtotal)					$6,551,000
Clearing/Grubbing, care of water (6% of subtotal)					$7,861,000
Land Clearing		950	Ac	$1,101.83	$1,047,000
Engineering and Contingencies (35%)					$51,266,000
Subtotal for Dam & Reservoir					**$197,741,000**
Conflicts					$14,608,000
Engineering and Contingencies (35%)					$5,113,000
Subtotal of Conflicts					**$19,721,000**
Land Acquisition					**$21,217,000**
Permitting and Mitigation of Reservoir					$42,434,000
Total Reservoir Construction Cost					**$281,113,000**
Interest during construction (36 months)			36 months		**$29,517,000**

Table Q-32, Continued

Total Reservoir Cost					**$310,630,000**
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	72.0 in	503,515	LF	$462	$232,851,000
Right of Way Easements (ROW)		503,515	LF	$16	$7,869,000
Discharge Structure	18 MGD	1	LS	$75,639	$76,000
Engineering and Contingencies (30%)					$69,878,000
Subtotal of Pipeline					**$310,674,000**
Intake Pump Station					
Pump Station (at Parkhouse)	8440 HP	1	LS	$15,913,000	$31,826,000
Booster Pump Station	14970 HP	1	LS	$19,037,000	$19,037,000
Storage at Booster PS	28 MG	1	LS	$6,610,890	$6,611,000
Engineering and Contingencies (35%)					$20,116,000
Subtotal of Pump Station					**$77,590,000**
Total Transmission Facility Costs					**$388,264,000**
Permitting and Mitigation - Conveyance System					**$3,485,000**
Interest During Construction			**24 months**		**$27,178,000**
TOTAL CAPITAL COST					**$729,557,000**
ANNUAL COSTS					**Cost**
Debt Service (5.5% for 20 years)					$35,056,000
Debt Service (5.5% for 40 years for reservoirs)					$19,359,000
Electricity ($0.09 per kWh)					$7,627,000
Operation & Maintenance					$5,963,000
Total Annual Costs					**$68,005,000**
UNIT COSTS (During Amortization) (NTMWD)					
Per Acre-Foot					$572
Per 1,000 Gallons					$1.76
UNIT COSTS (After Amortization) (NTMWD)					
Per Acre-Foot					$114
Per 1,000 Gallons					$0.35

Table Q-32A
UTRWD - George Parkhouse Reservoir (North)

Probable Owner: UTRWD — Total yield = 148,700 AF/Y
Quantity: 35,000 AF/Y

CONSTRUCTION COSTS

Dam & Reservoir	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Excavation					
Approach Channel		107,400	CY	$2.94	$316,000
Discharge Channel		114,600	CY	$2.94	$337,000
Spillway		472,200	CY	$2.94	$1,387,000
Fill				$0.00	$0
Random Compacted Fill		4,790,900	CY	$2.94	$14,077,000
Impervious Fill		1,107,200	CY	$3.67	$4,066,000
Filter		558,600	CY	$44.07	$24,619,000
Bridge		390	LF	$1,616.02	$630,000
Roadway		96,067	SY	$26.44	$2,540,000
Slurry Trench		1,092,500	SF	$17.63	$19,260,000
Soil Cement		324,340	CY	$95.49	$30,972,000
Elevator		1	LS	$146,910.84	$147,000
Barrier Warning System		936	LF	$132.22	$124,000
Gates				$0.00	$0
Gate & Anchor		4,480	SF	$345.24	$1,547,000
Stop Gate & Lift		160	LF	$2,350.57	$376,000
Hoist		8	Ea	$330,549.39	$2,644,000
Electrical		1	LS	$734,554.20	$735,000
Power Drop		1	LS	$293,821.68	$294,000
Spillway Low-Flow System		1	LS	$514,187.94	$514,000
Stop Gate Monorail System		390	LF	$1,175.29	$458,000
Embankment Internal Drainage		39,300	LF	$78.39	$3,081,000
Guardrail		780	LF	$37.12	$29,000
Grassing		28	Ac	$5,876.43	$165,000
Concrete (mass)		97,000	CY	$183.64	$17,813,000
Concrete (walls)		7,000	CY	$697.83	$4,885,000
Mobilization (5% of subtotal)					$6,551,000
Clearing/Grubbing, care of water (6% of subtotal)					$7,861,000
Land Clearing		950	Ac	$1,101.83	$1,047,000
Engineering and Contingencies (35%)					$51,266,000
Subtotal for Dam & Reservoir					**$197,741,000**
Conflicts					$14,608,000
Engineering and Contingencies (35%)					$5,113,000
Subtotal of Conflicts					**$19,721,000**
Land Acquisition					**$21,217,000**
Permitting and Mitigation of Reservoir					$42,434,000
Total Reservoir Construction Cost					**$281,113,000**
Interest during construction (36 months)			36 months		**$29,517,000**

Table Q-32A, Continued					
TOTAL COST*					**$310,630,000**
Total Cost (UTRWD)					**$91,392,000**
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	48.0 in	523,196	LF	$263	$137,617,000
Right of Way Easements (ROW)		523,196	LF	$16	$8,176,000
Discharge Structure	13 MGD	2	LS	$66,039	$132,000
Engineering and Contingencies (30%)					$41,325,000
Subtotal of Pipeline					**$187,250,000**
Intake Pump Station					
Pump Station (at Parkhouse)	2150 HP	1	LS	$8,858,000	$8,858,000
Booster Pump Station	3940 HP	1	LS	$6,529,000	$6,529,000
Booster Pump Station	1540 HP	1	LS	$3,808,000	$3,808,000
Storage Reservoir at Booster 1	8 MG	1	LS	$2,370,479	$2,370,479
Storage Reservoir at Booster 2	6 MG	1	LS	$1,752,093	$1,752,093
Engineering and Contingencies (35%)					$8,161,000
Subtotal of Pump Station					**$31,478,572**
Total Cost of Transmission Facilities					**$218,728,572**
Permitting and Mitigation - Conveyance System					**$1,912,000**
Interest During Construction			**24 months**		**$15,311,000**
TOTAL TRANSMISSION COST					**$235,952,000**
TOTAL CAPITAL COST FOR UTRWD					**$327,344,000**
ANNUAL COSTS					**Cost**
Debt Service (5.5% for 20 years)					$19,744,000
Debt Service (5.5% for 40 years for reservoirs)					$5,696,000
Electricity ($0.09 per kWh)					$2,472,000
Operation & Maintenance					$4,157,000
Total Annual Costs					**$32,069,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$916
Per 1,000 Gallons					$2.81
UNIT COSTS (After Amortization)					
Per Acre-Foot					$189
Per 1,000 Gallons					$0.58

*The total cost is for a reservoir size larger than needed for the yield UTRWD desires to pursue. The cost applied to UTRWD is prorated based on the amount of supply they would plan to use.

Table Q-33
NTMWD - George Parkhouse Reservoir (South)

Probable Owner: NTMWD — Total yield = 135,600 AF/Y
Quantity: 108,480 AF/Y
Peak: 121.0 MGD

CONSTRUCTION COSTS					
Dam & Reservoir	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Excavation					
Approach Channel		140,200	CY	$2.94	$412,000
Discharge Channel		123,000	CY	$2.94	$361,000
Spillway		289,300	CY	$2.94	$849,000
Emergency Spillway		434,300	CY	$2.94	$1,275,000
Fill					
Random Compacted Fill		7,169,400	CY	$2.94	$21,048,000
Impervious Fill		1,567,800	CY	$3.67	$5,758,000
Filter		668,200	CY	$44.09	$29,463,000
Bridge		190	LF	$1,619	$308,000
Roadway		63,067	SY	$26.46	$1,668,000
Slurry Trench		800,000	SF	$17.64	$14,110,000
Soil Cement		394,130	CY	$95.44	$37,617,000
Elevator		1	LS	$147,349	$147,000
Barrier Warning System		456	LF	$131.72	$60,000
Gates					
Gate & Anchor		2,240	SF	$440.93	$988,000
Stop Gate & Lift		160	LF	$2,355	$377,000
Hoist		8	Ea	$330,419	$2,643,000
Electrical		1	LS	$734,512	$735,000
Power Drop		1	LS	$293,581	$294,000
Spillway Low-Flow System		1	LS	$514,605	$515,000
Stop Gate Monorail System		390	LF	$1,172	$457,000
Embankment Internal Drainage		39,300	LF	$78	$3,080,000
Guardrail		780	LF	$37	$29,000
Grassing		28	Ac	$5,023	$141,000
Concrete (mass)		52,000	CY	$184	$9,578,000
Concrete (walls)		5,600	CY	$698	$3,907,000
Subtotal				$0	$135,408,000
Mobilization (5% of subtotal)					$6,770,000
Clearing/Grubbing, care of water (6% of subtotal)					$8,124,000
Land Clearing		950	AC	$1,102	$1,047,000
Engineering and Contingencies (35%)					$52,972,000
Subtotal for Dam & Reservoir					**$204,733,000**
Conflicts					$54,154,000
Engineering and Contingencies (35%)					$18,954,000
Subtotal of Conflicts					**$73,108,000**
Land Acquisition		31,741	AC	$1,201	$38,121,000

Table Q-33 Continued					
Permitting and Mitigation of Reservoir					$94,443,000
Total Reservoir Construction Cost					**$410,405,000**
Interest during construction			36 months		**$43,093,000**
Total Reservoir Cost					**$453,498,000**
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline to Wylie WTP	72	505,950	LF	$462	$233,977,000
Right of Way Easements (ROW)		505,950	LF	$16	$7,907,000
Discharge Structure	17 MGD	1	LS	$73,719	$74,000
Engineering and Contingencies (30%)					$70,215,000
Subtotal of Pipeline					**$312,173,000**
Intake Pump Station					
Intake Pump Station (at Parkhouse)	7300 HP	1	LS	$14,738,000	$14,738,000
Booster Pump Station	12600 HP	1	LS	$16,349,000	$16,349,000
Storage Tanks	26 MG	1	EA	$6,244,755	$6,245,000
Engineering and Contingencies (35%)					$13,066,000
Subtotal of Pump Station					**$50,398,000**
Construction Total for Transmission Facilities					**$362,571,000**
Permitting and Mitigation - Conveyance System					**$3,257,000**
Interest During Construction			**36 months**		**$38,070,000**
TOTAL CAPITAL COST FOR NTMWD					**$857,396,000**
ANNUAL COSTS					**Cost**
Debt Service (5.5% for 40 years for Reservoirs and 20 yrs for Others)					$62,060,000
Electricity ($0.09 per kWh)					$6,624,000
Operation & Maintenance					$5,550,000
Total Annual Costs					**$74,234,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$684
Per 1,000 Gallons					$2.10
UNIT COSTS (After Amortization)					
Per Acre-Foot					$112
Per 1,000 Gallons					$0.34

Table Q-33A
UTRWD - George Parkhouse Reservoir (South)

Probable Owner: UTRWD — Total yield = 135,600 AF/Y
Quantity: 35,000 AF/Y
Peak: 39.0 MGD

CONSTRUCTION COSTS					
Dam & Reservoir	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Excavation					
Approach Channel		140,200	CY	$2.94	$412,000
Discharge Channel		123,000	CY	$2.94	$361,000
Spillway		289,300	CY	$2.94	$849,000
Emergency Spillway		434,300	CY	$2.94	$1,275,000
Fill					
Random Compacted Fill		7,169,400	CY	$2.94	$21,048,000
Impervious Fill		1,567,800	CY	$3.67	$5,758,000
Filter		668,200	CY	$44.09	$29,463,000
Bridge		190	LF	$1,619	$308,000
Roadway		63,067	SY	$26.46	$1,668,000
Slurry Trench		800,000	SF	$17.64	$14,110,000
Soil Cement		394,130	CY	$95.44	$37,617,000
Elevator		1	LS	$147,349	$147,000
Barrier Warning System		456	LF	$131.72	$60,000
Gates					
Gate & Anchor		2,240	SF	$440.93	$988,000
Stop Gate & Lift		160	LF	$2,355	$377,000
Hoist		8	Ea	$330,419	$2,643,000
Electrical		1	LS	$734,512	$735,000
Power Drop		1	LS	$293,581	$294,000
Spillway Low-Flow System		1	LS	$514,605	$515,000
Stop Gate Monorail System		390	LF	$1,172	$457,000
Embankment Internal Drainage		39,300	LF	$78	$3,080,000
Guardrail		780	LF	$37	$29,000
Grassing		28	Ac	$5,023	$141,000
Concrete (mass)		52,000	CY	$184	$9,578,000
Concrete (walls)		5,600	CY	$698	$3,907,000
Subtotal				$0	$135,408,000
Mobilization (5% of subtotal)					$6,770,000
Clearing/Grubbing, care of water (6% of subtotal)					$8,124,000
Land Clearing		950	AC	$1,102	$1,047,000
Engineering and Contingencies (35%)					$52,972,000
Subtotal for Dam & Reservoir					**$204,733,000**
Conflicts					$54,154,000
Engineering and Contingencies (35%)					$18,954,000
Subtotal of Conflicts					**$73,108,000**
Land Acquisition		31,741	AC	$1,201	$38,121,000

Table Q-33A Continued					
Permitting and Mitigation of Reservoir					$94,443,000
Total Reservoir Construction Cost					**$410,405,000**
Interest during construction			36 months		**$43,093,000**
Total Cost*					**$453,498,000**
Total Cost for UTRWD					**$146,316,648**
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	48.0 in	525,631	LF	$263	$138,258,000
Right of Way Easements (ROW)		525,631	LF	$16	$8,215,000
Discharge Structure	13 MGD	2	LS	$66,039	$132,000
Engineering and Contingencies (30%)					$41,517,000
Subtotal of Pipeline					**$188,122,000**
Intake Pump Station					
Intake Pump Station (at Parkhouse)	2250 HP	1	LS	$8,992,000	$8,992,000
Booster Pump Station	3900 HP	1	LS	$6,484,000	$6,484,000
Booster Pump Station	1500 HP	1	LS	$3,762,000	$3,762,000
Storage Tanks	8 MG	1	EA	$2,370,479	$2,370,000
Storage Tanks	6 MG	1	EA	$1,752,093	$1,752,000
Engineering and Contingencies (35%)					$8,176,000
Subtotal of Pump Station					**$31,536,000**
Construction Total for Transmission Facilities					**$219,658,000**
Permitting and Mitigation - Conveyance System					**$1,941,000**
Interest During Construction			**36 months**		**$23,064,000**
TOTAL CAPITAL COST FOR UTRWD					**$390,980,000**
ANNUAL COSTS					**Cost**
Debt Service (5.5% for 40 years for Reservoirs and 20 yrs for Others)					$29,592,000
Electricity ($0.09 per kWh)					$2,512,000
Operation & Maintenance					$2,702,000
Total Annual Costs					**$34,806,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$994
Per 1,000 Gallons					$3.05
UNIT COSTS (After Amortization)					
Per Acre-Foot					$149
Per 1,000 Gallons					$0.46

*The total cost is for a reservoir size larger than needed for the yield UTRWD desires to pursue. The cost applied to UTRWD is prorated based on the amount of supply they would plan to use.

Table Q-34
DWU - Main Stem Pump Station

Owner:	NTMWD				
Total Project	90,801 AF/Y			MGD	
DWU Share of the Project	**34,751 AF/Y**			**MGD**	
Item	**Size**	**Quantity**	**Unit**	**Total Project Cost**	**DWU Share**
Intake Pump Station Facilities			LS	$37,426,000	$14,324,000
NTMWD Transmission System			LS	$54,193,000	$20,741,000
Conveyance Pump Station Expansion			LS	$7,098,000	$2,717,000
Total Cost of Facilities				**$98,717,000**	**$37,781,000**
Engineering, permitting and contingencies			LS	$5,925,000	$2,268,000
CONSTRUCTION TOTAL				**$104,642,000**	**$40,048,000**
Power to Site			LS	$1,000,000	$383,000
Land Acquisition and Surveying			LS	$3,427,000	$1,312,000
Lock and Dam Structure			LS	$1,551,000	$594,000
Wetlands Phosphorous Removal			LS	$1,674,000	$641,000
TOTAL CAPITAL COST				**$112,294,000**	**$42,977,000**
Interest During Construction		**12**	**M**	$3,930,000	$1,504,000
TOTAL COST				**$116,224,000**	**$44,481,000**
Annual Costs					
Debt Service (5.5 percent for 20 years)				$9,726,000	$3,722,000
Electricity				$2,530,000	$968,000
Operation and Maintenance				$1,655,000	$633,000
Total Annual Cost				**$13,911,000**	**$5,324,000**
Available Project Yield (ac-ft/yr)				90,801	34,751
UNIT COSTS (During Amortization)					
Water Cost ($ per ac-ft)				**$153**	**$153**
Water Cost ($ per 1,000 gallons)				**$0.47**	**$0.47**
UNIT COSTS (After Amortization)					
Water Cost ($ per ac-ft)				**$46.09**	**$46.07**
Water Cost ($ per 1,000 gallons)				**$0.14**	**$0.14**

Table Q-35
DWU - Main Stem Balancing Reservoir

Owner:	Dallas		
Quantity:	114,342	AF/Y	
Item	**Quantity/Size**		**Cost**
Off-Channel Storage/Ring Dike	4,337 Acres		$199,834,000
Intake Pumpstations	102 MGD		$21,041,000
Transmission Pipeline	40 miles		$163,304,000
Booster Pump station			$44,023,000
Irrigation and Relocation and Other			$5,761,000
TOTAL CONSTRUCTION COST			**$433,963,000**
Engineering & Contingencies			$143,722,000
Environmental & Archaeology & Mitigation			$16,263,000
Land Acquisition & Surveying			$16,425,000
Interest During Construction		36 months	$64,090,000
TOTAL CAPITAL COST			**$674,463,000**
Annual Costs			
Debt Service (5.5 percent for 20 years for other items)			$28,653,000
Debt Service (5.5 percent for 40 years for Reservoirs)			$20,694,000
Electricity			$13,932,000
Operation and Maintenance			$6,096,000
Total Annual Cost			**$69,375,000**
Available Project Yield (ac-ft/yr)			**114,342**
UNIT COSTS (During Amortization)			
Water Cost ($ per ac-ft)			**$606.73**
Water Cost ($ per 1,000 gallons)			**$1.86**
UNIT COSTS (After Amortization)			
Water Cost ($ per ac-ft)			**$175.16**
Water Cost ($ per 1,000 gallons)			**$0.54**
Capital costs provided by DWU			

Table Q-36					
DWU - Connect Lake Palestine					
Owners:		DWU			
Amount - (total):		111,776	Ac-Ft/Yr		

		Ownership			
Segments:	**ID:**	**TRWD**	**DWU**	**Flow (Ac-Ft)**	**Peak (MGD)**
Lake PAL to CC Interconnect	**19-1, 19-2**	0.0%	100.0%	111,776	150

CONSTRUCTION COSTS
TRANSMISSION FACILITIES

Pipeline & appurtenances	**Size**	**Quantity**	**Unit**	**Cost**
Pipeline - 19-1, 19-2	84 in.	205,324	LF	$303,741,000
ROW and Land Acquisition - 19-1, 19-2		1	LS	$3,079,000
Engineering & Contingencies				$91,122,000
Permitting and Mitigation				$3,645,000
Subtotal of Pipeline				**$401,587,000**
PUMP STATION				
Lake Palestine (LP1)		1	LS	$24,559,997
Permitting & Mitigation				$295,000
Engineering and Contingencies				$8,596,000
Subtotal of Pump Station				**$33,450,997**
CONSTRUCTION TOTAL				**$435,038,000**
Interest During Construction		24	Months	**$30,453,000**
TOTAL CAPITAL COST				**$465,491,000**
ANNUAL COSTS				
Debt Service (6% for 20 years)				$38,952,000
Electricity ($0.09 kWh)				$35,376,000
Operation & Maintenance				$3,283,000
Total Annual Costs				**$77,611,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$701.28
Per 1,000 Gallons				$2.15
UNIT COSTS (After Amortization)				
Per Acre-Foot				$349
Per 1,000 Gallons				$1.07

*Planned capacity of facilities is greater than the available supply. Available supply for Dallas is 110,670 ac-ft/yr. Unit costs are based on available supply.

Table Q-37
DWU - Connect to Bachman

Owners: DWU
Amount - (total): 111,776 Ac-Ft/Yr

		Ownership			
Segments:	**ID:**	**TRWD**	**DWU**	**Flow (Ac-Ft)**	**Peak (MGD)**
Existing TRWD Lines to Bachman WTP	**12**	0.0%	100.0%	111,776	150

CONSTRUCTION COSTS
TRANSMISSION FACILITIES

Pipeline & appurtenances	**Size**	**Quantity**	**Unit**	**Cost**
Pipeline - 12	84 in.	11,856	LF	22,786,000
ROW and Land Acquisition - 12		1	LS	178,000
Permitting and Mitigation				273,000
Engineering & Contingencies				$6,836,000
Subtotal of Pipeline				**$30,073,000**
TERMINAL STORAGE				
Bachman	150 MG	1	LS	$11,250,000
Permitting & Mitigation				$135,000
Engineering and Contingencies				$3,938,000
Subtotal of Terminal Storage				**$15,323,000**
CONSTRUCTION TOTAL				**$45,396,000**
Interest During Construction		24	Months	**$3,178,000**
TOTAL CAPITAL COST				**$48,574,000**
ANNUAL COSTS				
Debt Service (6% for 20 years)				$4,064,600
Electricity ($0.09 kWh)				$35,376,000
Operation & Maintenance				$340,000
Total Annual Costs				**$39,781,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$356
Per 1,000 Gallons				$1.09
UNIT COSTS (After Amortization)				
Per Acre-Foot				$320
Per 1,000 Gallons				$0.98

Table Q-38
DWU - Neches River Run-of-the-River Diversions Project

Probable Owner:	DWU and/or UNRMWA			
Quantity:	47,250	AF/Y		42 MGD

CONSTRUCTION COSTS				
	Size	**Quantity**	**Unit**	**Cost**
Transmission Systems				
Intake and Pump Station at River	91.1 MGD	1	LS	$26,750,000
Transmission Pipeline	72	221,760	LF	$118,007,000
Transmission Pumpstation & Storage Tanks			LS	$15,206,000
Construction Total				**$159,963,000**
Engineering and Contingencies (30% for pipelines, 35% for other)				$50,087,000
Environmental and Mitigation				$1,086,000
Land Acquisition				$817,000
Interest During Construction		24	Months	$14,837,000
TOTAL CAPITAL COST				**$226,790,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$18,978,000
Electricity ($0.09 per kWh)				$4,993,000
Delivery Through IPL	$160,000 per MGD			$6,744,000
Operation & Maintenance				$2,229,000
Total Annual Costs				**$32,944,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$697
Per 1,000 Gallons				$2.14
UNIT COSTS (After Amortization)				
Per Acre-Foot				$296
Per 1,000 Gallons				$0.91

Cost estimates provided by HDR, Inc. and modified for regional water planning purposes by Freese and Nichols, Inc.

Table Q-39				
DWU - Lake Columbia				
Probable Owner:	ANRA			
Quantity:	56,050	AF/Y		
Quantity:	63	MGD peak		
Construction Costs*				
Dam and Reservoir	**Size**	**Amount**	**Unit**	**Cost**
Subtotal for Dam & Reservoir (Incl. Contingencies)			LS	**$63,259,000**
Conflicts				$128,426,000
Land Acquisition for Dam and Reservoir				$35,098,000
Mitigation & Cultural Resources				$117,715,000
Subtotal for Conflicts & Other Miscellaneous				**$281,239,000**
Total Reservoir Construction				**$344,498,000**
DWU portion of dam (70%)				**$241,149,000**
Transmission Facilities (DWU)				
Pump from Lake Columbia to Lake Palestine. Requires a Parallel Pipeline to IPL				
Pipeline Columbia to Palestine (Rural)	54	105,600	LF	$42,531,000
Lake Columbia Intake Pump Station		1	LS	$15,470,000
Subtotal				**$58,001,000**
Engineering and Contingencies (30%)				$18,174,000
Interest During Construction		months	**36**	$7,998,000
Environmental and Archaeology Studies and Mitigation				$514,000
Pipeline Easement Costs				$1,351,000
TOTAL COST FOR TRANSMISSION SYSTEM				**$86,038,000**
TOTAL COST				**$327,187,000**
DWU Annual Costs				
Debt Service (5.5% for 20 years)				$7,200,000
Debt Service (5.5% for 40 years)				$16,949,000
Electricity ($0.09 per kWh)				$11,371,000
Operation & Maintenance				$15,705,000
Total Annual Costs				**$51,225,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				**$914**
Per 1,000 Gallons				**$2.80**
UNIT COSTS (After Amortization)				
Per Acre-Foot				**$483**
Per 1,000 Gallons				**$1.48**

*These costs differ from the Dallas LRWSP because these reservoir costs are based on a detailed cost estimate developed for ANRA whereas, the LRWSP costs are from the 2011 Region I RWP.

Table Q-40
DWU - Infrastructure to Treat and Deliver to Customers

Amount	358,632 AF/Y	
OWNER:	Dallas Water Utilities	
	Size	**Cost**
Projects Completed by 2020*		
Elm Fork WTP Improvements		$125,000,000
Eastside WTP Improvements		$75,000,000
Pipeline from Bachman to Elm Fork WTP	72-in	$57,000,000
Projects Completed by 2025		
Elm Fork WTP Improvements		$240,000,000
Projects Completed by 2030		
Tawakoni Interconnect to Balancing Reservoir	144-in	$420,000,000
Wintergreen PS and Pipeline Improvements		$310,000,000
Tawakoni Balancing Reservoir Expansion		$66,000,000
Eastside WTP Improvements		$58,000,000
Projects Completed by 2045		
Western WTP Expansion		$112,000,000
Engineering and Contingencies (30% for pipelines, 35% for other)		$488,200,000
Total Construction Cost		$1,951,200,000
Interest during Construction (24 months)	24	$136,584,000
Total Capital Costs		$2,087,784,000
Annual Costs		
Debt Service (20 years at 5.5%)		$174,704,000
Operation and Maintenance (1% for pipeline, 2.5% for other)		$29,420,000
Total Annual Costs		$204,124,000
Annual Cost ($ per acre-foot)		$569
Annual Cost ($ per 1000 gallons)		$1.75
Annual Cost after Amortization ($ per acre-foot)		$82
Annual Cost after Amortization ($ per 1000 gallons)		$0.25

*Costs provided by DWU

Table Q-41
DWU - Direct Reuse Projects

Owner: Dallas
Amount: 2,242 Ac-Ft/Yr

Item No. & Description	Qty. Units		Unit Cost	Total Cost
Construction Costs				
PIPELINE				
McCommas Bluff				
16" Reclaimed Water Line	10,700 FT		$ 264.56	$ 2,831,000
Cedar Crest				$ -
20" Reclaimed Water Line	15,100 FT		$ 298.05	$ 4,501,000
12" Reclaimed Water Line	1,700 FT		$ 232.19	$ 395,000
White Rock Alternate				$ -
42" Reclaimed Water Line	52,800 FT		$ 397.40	$ 20,982,000
36" Reclaimed Water Line	58,200 FT		$ 363.91	$ 21,179,000
24" Reclaimed Water Line	10,200 FT		$ 331.53	$ 3,382,000
16" Reclaimed Water Line	7,600 FT		$ 264.56	$ 2,011,000
12" Reclaimed Water Line	12,600 FT		$ 232.19	$ 2,926,000
Subtotal Piping				**$ 58,207,000**
PUMP STATIONS				
McCommas Bluff	62 hp			$ 1,590,000
Cedar Crest	181 hp			$ 1,722,000
White Rock Alternate	2,478 hp			$ 5,960,000
Subtotal Pump Station				**$ 9,272,000**
Permitting and Mitigation	1%			$ 675,000
Engineering, Contingency, Construction Management, Financial and Legal Costs				
Pipeline	30%			$ 17,462,000
Pump Station	35%			$ 3,245,000
Capital Cost Subtotal				**$ 88,861,000**
Interest During Construction		24	Months	**$6,220,000**
Total Capital Costs				**$ 95,081,000**
Annual Costs				
Debt Service				$7,956,000
Operation and Maintenance Costs				
Pipeline	1.00%			$ 582,000
Pump Station	2.50%			$ 232,000
Estimated Annual Power Cost	$0.09/kWh			$ 1,225,500
Total Annual Costs				**$ 9,996,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$ 4,459
Per 1,000 Gallons				$ 13.68
UNIT COSTS (After Amortization)				
Per Acre-Foot				$ 910
Per 1,000 Gallons				$ 2.79

Table Q-42						
DWU - Carrizo-Wilcox Groundwater						
Owner:	DWU					
Quantity:	30,267 AF/Y					
Peak Flow:	33.8 MGD					
Average Flow	27.0 AMGD					
Item	**Size**		**Quantity**	**Unit**		**Cost**
Capital Costs						
Intake Pump Stations	5.6	MGD	1	LS		$7,931,000
Transmission Pipeline	24	306,240	1	LF		$57,078,000
Well Fields (Wells, Pumps, and Piping)			1	LS		$37,212,000
Transmission Pump station & Storage Tank			1	LS		$7,674,000
Total Cost of Facilities						**$109,895,000**
Engineering and Contingencies (35% for pump stations, 30% for other items)						$35,609,000
Interest During Construction			**months**	**24**		$10,537,000
Environmental & Mitigation						$3,858,000
Land Acquisition & Surveying						$1,164,000
TOTAL CAPITAL COST						**$161,063,000**
Annual Costs						
Debt Service (5.5 percent for 20 years)						$13,478,000
Pumping Costs						$2,396,000
Operation and Maintenance						$1,287,000
Delivery through Eastside Supply Pipeline	($60,000 per MGD)					$1,620,000
Purchase of Water (30,267 acft/yr @ $50 per ac-ft)						$1,513,000
Total Annual Cost						**$20,294,000**
UNIT COSTS (During Amortization)						
Water Cost ($ per ac-ft)						**$670**
Water Cost ($ per 1,000 gallons)						**$2.06**
UNIT COSTS (After Amortization)						
Water Cost ($ per ac-ft)						**$225**
Water Cost ($ per 1,000 gallons)						**$0.69**

Table Q-43
DWU - Sabine Conjunctive System Operations

Owner:	Dallas			
Quantity:	104,253	AF/Y	93	MGD
Groundwater	15,666 AF/Y			

Item	Quantity	Unit	Unit Price	Cost
Off-Channel Storage/Ring Dike (Conservation Pool acft, acres)	1	LS	$284,471,000	$284,471,000
Intake Pump Stations (8.5 MGD)	1	LS	$48,835,000	$48,835,000
Transmission Pipeline (24 in dia., 65 miles)	1	LS	$140,992,000	$140,992,000
Transmission Pump Station(s) & Storage Tank(s)	1	LS	$19,648,000	$19,648,000
Well Fields (Wells, Pumps, and Piping)			$37,212,000	$37,212,000
TOTAL CONSTRUCTION COST				**$531,158,000**
Engineering and Contingencies				$178,856,000
Environmental & Mitigation				$6,466,000
Land Acquisition & Surveying				$3,714,000
Interest During Construction		36	Months	$75,621,000
TOTAL CAPITAL COST				**$795,815,000**
Annual Costs				
Debt Service (5.5 percent for 20 years)				$29,885,000
Reservoir Debt Service (5.5 percent for 40 years)				$26,756,000
Operation and Maintenance				$7,690,000
Pumping Costs				$9,346,000
Delivery Through Eastside Supply Pipeline ($60,000 per MGD)				$5,580,000
Purchase of Groundwater (15,666 ac-ft per year @ $50 per ac-ft)				$783,300
Total Annual Cost				**$73,677,000**
Available Project Yield (ac-ft/yr)				**104,253**
UNIT COSTS (During Amortization)				
Water Cost ($ per ac-ft)				**$707**
Water Cost ($ per 1,000 gallons)				**$2.17**
UNIT COSTS (After Amortization)				
Water Cost ($ per ac-ft)				**$224.45**
Water Cost ($ per 1,000 gallons)				**$0.69**

Capital costs provided by DWU

Table Q-44
DWU - Red River Off-Channel Reservoir

Probable Owner:
Quantity: 114,342 AF/Y
Peak: 127.5 MGD

CONSTRUCTION COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Off-Channel Storage/Ring Dike		1	LS	$127,951,000	$127,951,000
Intake Pump Stations (127.2 MGD)		1	LS	$49,908,000	$49,908,000
Transmission Pipeline (84 in dia., 100 miles)		1	LS	$374,425,000	$374,425,000
Transmission Pump Station(s) & Storage Tank(s)		1	LS	$20,026,000	$20,026,000
TOTAL COST OF FACILITIES					**$572,310,000**
Engineering and Contingencies					$181,587,000
Environmental & Archaeology Studies and Mitigation					$5,284,000
Land Acquisition and Surveying (3286 acres)					$12,752,000
Interest During Construction					$81,054,000
TOTAL COST OF PROJECT					**$852,987,000**
ANNUAL COST					
Debt Service (5.5 percent, 20 years)					$54,931,000
Reservoir Debt Service (5.5 percent, 40 years)					$12,248,000
Operation and Maintenance					
Intake, Pipeline, Pump Station (1% of Cost of Facilities)					$5,493,000
Dam and Reservoir (1.5% of Cost of Facilities)					$1,919,000
Zebra Mussel Treatment					$2,697,000
Pumping Energy Costs (@ $0.09 /KW-hr)					$15,153,000
Sediment Basin Dredging					$1,919,000
TOTAL ANNUAL COST					**$94,360,000**
Available Project Yield (ac-ft/yr)					**114,342**
UNIT COSTS (During Amortization)					
Water Cost ($ per ac-ft)					**$825**
Water Cost ($ per 1,000 gallons)					**$2.53**
UNIT COSTS (After Amortization)					
Water Cost ($ per ac-ft)					**$238**
Water Cost ($ per 1,000 gallons)					**$0.73**

Table Q-45
DWU - TB to West System

Probable Owner: DWU
Quantity: 200,659 AF/Y

CAPITAL COSTS					
	Size	**Quantity**	**Unit**	**Unit Price**	**Cost**
Transmission Pipeline		1,188,000	LS	$1,252,108,000	$1,252,108,000
Intake Pump stations			LS	$32,863,000	$32,863,000
Transmission Pump Station & Storage Tanks					$118,403,000
Total Cost of Facilities					**$1,403,374,000**
Engineering & Contingencies					$428,576,000
Environmental and Mitigation					$2,258,000
Land Acquisition & Surveying					$5,201,000
Interest During Construction			84	Months	$450,656,000
TOTAL COST (DWU)					**$2,290,065,000**
ANNUAL COSTS					**Cost**
Debt Service (5.5% for 20 years)					$191,631,000
Electricity ($0.09 per kWh)					$30,453,000
Operation & Maintenance					$15,671,000
Purchase of Water (200,659 ac-ft per year @ $32.59 per ac-ft)					$6,539,000
Total Annual Costs					**$244,294,000**
UNIT COSTS (During Amortization) (DWU)					
Per Acre-Foot					$1,217
Per 1,000 Gallons					$3.73
UNIT COSTS (After Amortization) (DWU)					
Per Acre-Foot					$262
Per 1,000 Gallons					$0.80

Table Q-46 DWU - Lake Texoma Desalination			
Probable Owner: DWU			
Amount: 146,000 Acre-Feet/Year			
CONSTRUCTION COSTS			
TRANSMISSION FACILITIES			
Intake Pump Station			$55,157,000
Transmission Pipeline			$318,022,000
Transmission Pump station and Storage Tanks			$4,739,000
Water Treatment Plant with Advanced Treatment			$582,752,000
Subtotal of Pump Station(s)			**$960,670,000**
Engineering and Contingencies			$320,334,000
Environmental and Mitigation			$2,926,000
Land Acquisition and Surveying			$7,537,000
Interest During Construction	**60**	**months**	**$226,007,000**
TOTAL CAPITAL COST			**$1,517,474,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$126,637,000
Facility Operation & Maintenance			$77,501,000
Electricity ($0.09 per kWh)			$10,128,000
Purchase of Water (146,000 ac-ft/year @ 22 $/ac-ft)			$3,212,000
Total Annual Costs			**$217,478,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot of raw water			$1,490
Per 1,000 Gallons of raw water			$4.57
UNIT COSTS (After Amortization)			
Per Acre-Foot of treated water			$622
Per 1,000 Gallons of treated water			$1.91

Q-48
TRWD & DWU Integrated Pipeline

Owners:	TRWD and DWU		
Amount - (total)[a]:	290,776	Ac-Ft/Yr	
TRWD	179,000	Ac-Ft/Yr	
DWU	111,776	Ac-Ft/Yr	

Segments:	**ID:**	**Ownership** TRWD	**Ownership** DWU	**Flow (Ac-Ft)**	**Peak (MGD)**
Lake Palestine to Cedar Creek Connection	**19-1, 19-2**	0.0%	100.0%	111,776	150
Cedar Creek Connection to Richland-Chambers Connection	**17**	45.8%	54.2%	227,176	277
Richland-Chambers Connection to Bachman Take-off Point	**15-1, 15-2, 13, 14**	56.8%	43.2%	290,776	347
Bachman Take-off Point to Connection to Benbrook Pipeline	**9, 11**	100.0%	0.0%	179,000	197
Cedar Creek Resevoir to Connection to the Main Pipeline	**18**	100.0%	0.0%	115,400	127
Richland-Chambers to Connection to the Main Pipeline	**16**	100.0%	0.0%	63,600	70
Main Pipeline to Existing TRWD Lines	**10**	56.8%	43.2%	290,776	347
Lines to Bachman WTP	**12**	0.0%	100.0%	111,776	150

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Pipeline & appurtenances	**Size**	**Quantity**	**Unit**	**Cost**
19-1, 19-2[b]	84 in.	205,324	LF	$0
17	108 in.	55,030	LF	$103,676,000
15-1, 15-2, 13, 14	108 in.	237,520	LF	$492,517,500
9, 11	84 in.	107,603	LF	$311,761,000
18	108 in.	660	LF	$989,000
16	96 in.	64,813	LF	$71,322,000
10	84 in.	11,105	LF	$14,122,000
12[c]	84 in.	11,856	LF	$0
ROW and Land Acquisition - 19-1, 19-2[b]		1	LS	$0
ROW and Land Acquisition - 17, 18		1	LS	$835,000
ROW and Land Acquisition - 16		1	LS	$972,000
ROW and Land Acquisition - 9		1	LS	$824,000
ROW and Land Acquisition - 12[c]		1	LS	$0
Permitting & Mitigation				$11,932,700
Engineering and Contingencies				$298,316,000
Subtotal of Pipeline				**$1,307,267,000**

Pump Stations				
Intake and Pump Station - Lake Palestine[b]	LP1	1	LS	$0
Intake and Pump Station - Cedar Creek Res	JCC1	1	LS	$86,951,035
Intake and Pump Station - Richland-Chambers Res	JRC1	1	LS	$64,449,237
Booster Pump Stations & 40 MG Storage Tank	JB2, JB3, JB4, JB2R, JB3R, MBR	2	LS	$306,656,608
Power Supply		1	LS	$30,000,000
Permitting & Mitigation				$5,856,700
Engineering and Contingencies				$160,320,000
Subtotal of Pump Stations				**$654,233,580**

Q-48, Continued				
TERMINAL STORAGE				
Crowley Balancing Reservoir	200 MG	1	LS	$15,000,000
Bachman[c]	150 MG	1	LS	$0
Permitting & Mitigation				$180,000
Engineering and Contingencies				$5,250,000
Subtotal of Terminal Storage				**$20,430,000**
CONSTRUCTION TOTAL				**$1,981,931,000**
Interest During Construction (24 months)				$138,735,000
TOTAL CAPITAL COST		**TRWD**	**Dallas**	**Total**
		$1,733,914,000	**$386,752,000**	**$2,120,666,000**
ANNUAL COSTS				
Debt Service (6% for 20 years)		$151,170,500	$33,718,800	$184,889,300
Electricity ($0.09 kWh)		$21,642,925	$13,732,820	$35,375,745
Operation & Maintenance		$21,213,000	$4,731,000	$25,944,000
Total Annual Costs		**$194,026,000**	**$52,182,620**	**$246,209,045**
UNIT COSTS (During Amortization)				
Per Acre-Foot		$1,084	$467	$847
Per 1,000 Gallons		$3.33	$1.43	$2.60
UNIT COSTS (After Amortization)				
Per Acre-Foot		$239	$165	$211
Per 1,000 Gallons		$0.73	$0.51	$0.65

[a] Planned capacity of facilities is greater than the available supply.
[b] Cost included in Q-36
[c] Cost included in Q-37

Table Q-49
TRWD - Cedar Creek Wetlands Reuse

Owner:	TRWD		
Quantity:	88,059	AF/Y	

TRWD Cedar Creek Wetlands			
Item	**Quantity**	**Unit**	**Cost**
Wetland cells and pump stations	1	LS	$128,205,000
Engineering & permitting			$21,795,000
Subtotal			$150,000,000
TOTAL CONSTRUCTION COST			**$134,375,000**
Interest During Construction	**12**	**months**	**$4,703,000**
TOTAL CAPITAL COST			**$139,078,000**
Annual Costs			
Debt Service (5.5 percent for 20 years)			$11,638,000
Electricity - Pumping from River to Wetlands			$570,000
Operation and Maintenance			$3,846,000
Total Annual Cost			**$16,054,000**
Available Project Yield (ac-ft/yr)			**88,059**
UNIT COSTS (During Amortization)			
Water Cost ($ per ac-ft)			**$182**
Water Cost ($ per 1,000 gallons)			**$0.56**
UNIT COSTS (After Amortization)			
Water Cost ($ per ac-ft)			**$50**
Water Cost ($ per 1,000 gallons)			**$0.15**

Costs for wetland cells and pump stations provided by TRWD. Costs include contingency.

Table Q-50
TRWD - Lake Tehuacana

Owner: TRWD
Quantity: 41,600 Ac-Ft/Yr
Peak 46 MGD

CONSTRUCTION COSTS					
DAM & RESERVOIR	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Excavation					
Channel		2,250,000	C.Y.	$2.94	$5,922,000
Core trench & borrow		1,764,000	C.Y.	$2.94	$4,643,000
Fill Material					
Embankment		3,488,000	C.Y.	$3.67	$11,476,000
Waste Material		80,000	C.Y.	$2.94	$211,000
Filter, 1 & 2 (foundation drainage)		181,800	C.Y.	$44	$7,178,000
Stabilized base roadway		59,555	S.Y.	$26	$1,411,000
Cutoff slurry trench		514,800	S.F.	$18	$8,130,000
Soil cement including cement		137,800	C.Y.	$95	$11,788,000
Guard posts		1,680	each	$37	$56,000
Grassing		34	acres	$5,023.26	$153,000
Subtotal of Dam and Reservoir					**$50,968,000**
Conflicts					$45,235,000
Engineering and Contingencies (35%)					**$33,671,000**
CONSTRUCTION TOTAL					**$129,874,000**
LAND AND LIGNITE ACQUISITION		**1**	**L.S.**	$122,435,721	**$122,436,000**
Interest During Construction			**36**	months	**$13,637,000**
Permitting and Mitigation of Reservoir					**$244,872,000**
TOTAL RESERVOIR COST					**$510,819,000**

Transmission System from Richland Chambers Reservoir to Ennis

Item	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline - Rural	54	157,800	LF	$301	$47,481,000
Pump Station at Richland-Chambers	3700 HP	1	LS	$10,935,123	$10,935,000
Engineering and Contingencies (30% for pipelines, 35% for other items)					$18,072,000
Subtotal					**$76,488,000**

Table Q-50, Continued

Transmission System from Ennis to Balancing Reservoir

Item	Size	Quantity	Unit	Unit Price	Cost
Pipeline - Rural	54	158,680	LF	$301	$47,746,000
Pipeline - Urban	54	65,320	LF	$421	$27,470,000
Ennis Booster Pump Station	3300 HP	1	LS	$5,803,371	$5,803,000
Waxahachie Booster Pump	2400 HP	1	LS	$4,782,802	$4,783,000
Ground Storage Tanks	6 MG	1	Ea.	$1,752,093	$1,752,000
Engineering and Contingencies (30% for pipelines, 35% for other items)					$26,883,000
Subtotal					**$114,437,000**

Transmission System from Balancing Reservoir to Rolling Hills

Item	Size	Quantity	Unit	Unit Price	Cost
Pipeline - Urban	54	31,000	LF	$421	$13,037,000
Engineering and Contingencies (30% for pipelines, 35% for other items)					$3,911,000
Subtotal					**$16,948,000**

Permitting and Mitigation of Transmission			**$2,001,000**
TOTAL TRANSMISSION COST			**$209,874,000**
Interest During Construction	**36**	months	**$22,037,000**
TOTAL CAPITAL COST			**$742,730,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$19,406,000
Debt Service (5.5% for 40 years)			$31,834,000
Operation & Maintenance - Reservoir			$765,000
Operation & Maintenance - Transmission			$2,055,000
Electricity ($0.09 per kWh)			$3,369,000
Total Annual Costs			**$57,429,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot			$1,381
Per 1,000 Gallons			$4.24
UNIT COSTS (After Amortization)			
Per Acre-Foot			$149
Per 1,000 Gallons			$0.46

Table Q-51
TRWD - Oklahoma Water (From Hugo to Eagle Mountain)

Probable Owner:	TRWD				
Quantity:	50,000 AF/Y				

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	60	800,000	LF	$338	$270,201,000
100-ft Right of Way Easements (ROW)	100	1,837	AC	$6,533	$11,998,000
Red River Tunnel		1,000	LF	$1,109	$1,109,000
Engineering and Contingencies (30%)					$81,393,000
Subtotal of Pipeline					**$364,701,000**
Pump Station(s)					
Lake Hugo Pump Station	5000 HP	1	LS	$12,367,717	$12,368,000
Booster 1	5000 HP	1	LS	$7,731,111	$7,731,000
Booster 2	5000 HP	1	LS	$7,731,111	$7,731,000
Storage Tanks	7 HP	1	LS	$2,772,430	$2,772,000
Engineering and Contingencies (35%)					$10,711,000
Subtotal of Pump Station(s)					**$41,313,000**
CONSTRUCTION TOTAL					**$406,014,000**
Permitting and Mitigation					$3,892,000
Interest During Construction			12 months		**$14,210,000**
TOTAL COST					**$424,116,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$35,490,000
Electricity ($0.09 per kWh)					$5,659,000
Operation & Maintenance					$4,174,000
Raw Water Purchase					$2,444,000
Total Annual Costs					**$47,767,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$955
Per 1,000 Gallons					$2.93
UNIT COSTS (After Amortization)					
Per Acre-Foot					$246
Per 1,000 Gallons					$0.75

Note: Cost for buying raw water is assumed to be $0.15 per 1,000 gallons

Table Q-52
UTRWD - Lake Ralph Hall and Reuse

Probable Owner:	UTRWD		
Quantity:	34,050	Ac-Ft/Yr from Ralph Hall	
	52,437		
Peak:	38.0 MGD		(1.25:1 peak)

CONSTRUCTION COSTS

Dam, Reservoir and Conflicts	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Mobilization and Demobilization		1	LS	$7,492,000	$7,492,000
Stormwater Prevention		1	LS	$1,341,000	$1,341,000
Clearing & Grubbing		450	AC	$3,000	$1,350,000
Roadways		23,800	LF	$316	$7,521,000
Bridges		13,080	LF	$2,110	$27,599,000
Utility Relocations		53,500	LF	$117	$6,260,000
Embankment Random Fill		2,447,520	CY	$4	$9,790,000
Embankment Core		1,928,515	CY	$6	$11,571,000
Principal Spillway Reinf. Conc.		36,835	CY	$404	$14,881,000
Emergency Spillway Reinf. Conc.		38,170	CY	$404	$15,421,000
Rock Riprap		215,000	SY	$147	$31,605,000
Miscellaneous Relocations		1	LS	$2,938,000	$2,938,000
Care of Water		1	LS	$296,000	$296,000
Engineering and Contingencies (35%)					$48,323,000
Subtotal for Dam, Reservoir and Conflicts					**$186,388,000**

TRANSMISSION FACILITIES

Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline to Balancing Reservoir	48	158,400	LF	$263	$41,664,000
Right of Way Easements		158,400	LF	$16	$2,475,000
Engineering and Contingencies (30%)					$12,499,000
Subtotal of Pipeline					**$56,638,000**
Intake Pump Station					
Pump Station	2400 HP	1	LS	$9,193,336	$9,193,000
Engineering and Contingencies (35%)					$3,218,000
Subtotal of Pump Station					**$12,411,000**
CONSTRUCTION TOTAL					**$255,437,000**
Land Acquisition					**$30,000,000**
Mitigation					**$8,372,000**
Interest During Construction (30 months)			30	months	**$22,351,000**

Table Q-52, Continued	
TOTAL COST	**$316,160,000**
ANNUAL COSTS	**Cost**
Debt Service (5.5% for 20 years)	$26,456,000
Electricity ($0.09 per kWh)	$1,848,000
Operation & Maintenance	$2,333,000
Total Annual Costs	**$30,637,000**
UNIT COSTS (During Amortization)	
Per Acre-Foot (Ralph Hall and Reuse)	$584
Per 1,000 Gallons	$1.79
UNIT COSTS (After Amortization)	
Per Acre-Foot (Ralph Hall and Reuse)	$80
Per 1,000 Gallons	$0.25

Table Q-53
UTRWD - Direct Reuse

Owner: Upper Trinity Regional Water District
Quantity: 2,240 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Cost of Pipeline	18	52,800	LF	$ 97	$5,118,000
Right of Way Easements (ROW)	42 ft.	52,800	51	$ 3,636	$185,000
Engineering & Contingencies (30%)					$1,535,000
Total Pipeline Cost					**$6,838,000**
Cost of Pump Station	270 HP	2	LS	$ 1,782,525	$3,565,000
Storage Tank	0.86	1	LS	$616,475	$616,000
Engineering & Contingencies (35%)					$1,463,000
Total Pump Station Cost					**$5,644,000**
CONSTRUCTION TOTAL					**$12,482,000**
Permitting and Mitigation					**$294,000**
Interest during Construction (12 months)			12 months		**$437,000**
TOTAL CAPITAL COST					**$13,213,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,106,000
Electricity ($0.09 kWh)					$57,000
Operation & Maintenance					$156,000
Purchase of Reuse Water					$0
Total Annual Costs					**$1,319,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$589
Per 1,000 gallons					$1.81
UNIT COSTS (After Amortization)					
Per Acre-Foot					$95
Per 1,000 gallons					$0.29

Note: Cost to purchase reuse water is assumed to be $0.25 per thousand gallons.

Table Q-54 UTRWD Water Treatment Plant and Treated Water Distribution System Water Management Strategies		
Amount	126,068	AF/Y
OWNER:	UTRWD	
Project	**Date**	**Capital Budget (Including E&C and Interest)**
2015-2019 Projects		
Equipment/Vehicle Storage*	2015	
Harpool Additional Raw Water Storage Lake	2015	$1,520,000
Chapman Lake Improvements/Dredging	2015	$250,000
Raw Water Pipeline from Harpoo Additional Storage to Harpool RWTP	2015	$4,400,000
Mustang Temple Dane Pumping Improvements	2015	$215,000
Zebra Mussel Abatement Program (Taylor RWTP)	2015	$920,000
Zebra Mussel Abatement Program (Harpool RWTP)	2015	$450,000
Taylor RWTP Basin Foundation Improvements*	2016	
Parallel Pipeline Taylor RWTP to Stonehill PS	2018	$16,610,000
Southwest Pumpstation/Ground Storage	2019	$7,581,000
Harpool RWTP Disinfection/Ozone	2019	$3,500,000
Harpool In-Line Booster PS at N.E. Pipeline	2019	$550,000
Pilot Point Pipeline (NE Denton Co. Finshed Water Pipeline	2019	$16,600,000
Total, 2015-2019 Projects		**$52,596,000**
Annual Costs for 2015-2019 Projects		
Debt Service (5.5% interest, 25 year bonds)		$4,401,000
Power (Estimated)		$3,005,000
Water Treatment Plant Operation (5,000,000 gallons at $0.70 per 1,000 gallons)		$3,500,000
Operation and Maintenance		$684,000
Total Pre-Amortization		**$11,590,000**
Total After Amortization		**$7,189,000**
2020-2029 Projects		
Aubrey Pipeline	2020	$4,500,000
New Diurnal Pond at Harpool WTP	2020	$1,750,000
Northeast Loop to Sanger	2020	$5,000,000
Ray Roberts Raw Water Alignment Study/ROW	2020	$18,350,000
Parallel Raw Water Line from Lewisville Lake Intake	2021	$10,000,000
Harpool RWTP Expansion - Ph 2 (20 mgd to 30 mgd)	2022	$20,000,000
North Pipeline Ph. 3 (Harpool RWTP to Celina)	2023	$3,820,000
Harpool RWTP Membrane Renovation - Ph.1*	2023	
West Loop, Krum-Sanger	2024	$6,000,000
NE Loop - Aubrey to Sanger Pipeline (Denton)	2024	$6,000,000
Harpool RWTP Membrane Renovation - Ph.2*	2027	
Taylor RWTP Expansion (70 mgd to 90 mgd)	2028	$47,000,000

Table Q-54, Continued		
Raw Water Pipeline from Ray Roberts	2029	$25,000,000
NE Pump station (Aubrey/Pilot Point/Sanger)	2029	$6,000,000
NE Pump station (Ponder/Krum/Sanger)	2029	6,000,000
Total, 2020-2029 Projects		**159,420,000**
Annual Costs for 2020-2029 Projects		
Debt Service (5.5% interest, 20 year bonds)		$13,340,000
Power (Estimated)		$3,000,000
Water Treatment Plant Operation (6,000,000 gallons at $0.70 per 1,000 gallons)		$4,200,000
Operation and Maintenance		$1,774,000
Total Pre-Amortization		**$22,314,000**
Total After Amortization		**$4,774,000**
2030-2040 Projects		
Water Treatment Plant Expansion (60 MGD)		$70,883,721
Other Pipeline Projects (estimated)		$22,400,000
Other Pump Station Projects (estimated)		$5,600,000
Engineering and Contingencies (30% for Pipelines, 35% for others)		$33,489,000
Interest during Contruction (18 months)		$6,950,000
Total, 2030-2040 Projects		**$139,322,721**
Annual Costs for 2030-2040 Projects		
Debt Service (5.5% interest, 20 year bonds)		$11,658,000
Power (Estimated)		$3,489,000
Water Treatment Plant Operation (10,950,000 gallons at $0.70 per 1,000 gallons)		$7,665,000
Operation and Maintenance		$364,000
Total Pre-Amortization		**$23,176,000**
Total After Amortization		**$11,518,000**
2040-2050 Projects		
Water Treatment Plant Expansion (40 MGD)		$50,791,000
Other Pipeline Projects (estimated)		$26,400,000
Other Pump Station Projects (estimated)		$6,600,000
Engineering and Contingencies (30% for Pipelines, 35% for others)		$28,007,000
Interest during Contruction (18 months)		$5,869,000
Total, 2040-2050 Projects		**$117,667,000**
Annual Costs for 2040-2050 Projects		
Debt Service (5.5% interest, 20 year bonds)		$9,846,000
Power (Estimated)		$3,489,000
Water Treatment Plant Operation (7,300,000 gallons at $0.70 per 1,000 gallons)		$5,110,000
Operation and Maintenance		$429,000
Total Pre-Amortization		**$18,874,000**
Total After Amortization		**$9,028,000**

Table Q-54, Continued	
2050-2060 Projects	
Water Treatment Plant Expansion (40 MGD)	$50,791,000
Other Pipeline Projects (estimated)	$22,400,000
Other Pump Station Projects (estimated)	$5,600,000
Engineering and Contingencies (30% for Pipelines, 35% for others)	$26,457,000
Interest during Contruction (18 months)	$5,526,000
Total, 2050-2060 Projects	**$110,774,000**
Annual Costs for 2050-2060 Projects	
Debt Service (5.5% interest, 20 year bonds)	$9,269,000
Power (Estimated)	$2,310,000
Water Treatment Plant Operation (7,300,000 gallons at $0.70 per 1,000 gallons)	$5,110,000
Operation and Maintenance	$364,000
Total During Amortization	**$17,053,000**
Total After Amortization	**$7,784,000**
2060-2070 Projects	
Water Treatment Plant Expansion (40 MGD)	$50,791,000
Other Pipeline Projects (estimated)	$22,400,000
Other Pump Station Projects (estimated)	$5,600,000
Engineering and Contingencies (30% for Pipelines, 35% for others)	$26,457,000
Interest during Contruction (18 months)	$5,526,000
Total, 2060-2070 Projects	**$110,774,000**
Annual Costs for 2060-2070 Projects	
Debt Service (5.5% interest, 20 year bonds)	$9,269,000
Power (Estimated)	$2,310,000
Water Treatment Plant Operation (7,300,000 gallons at $0.70 per 1,000 gallons)	$5,110,000
Operation and Maintenance	$364,000
Total During Amortization	**$17,053,000**
Total After Amortization	**$7,784,000**
TOTAL CAPITAL COST	**$690,554,000**
UNIT COSTS (During Amortization)**	
Per Acre-Foot	**$910**
Per 1,000 Gallons	**$2.79**
UNIT COSTS (After Amortization)**	
Per Acre-Foot	**$513**
Per 1,000 Gallons	**$1.58**

* Costs for these items were removed for Final Plan. TWDB determined they were not included in allowable items to be included in Regional Water Plan per TWDB guidelines.

** These unit costs are the average of each decade's unit costs.

Table Q-55
UTRWD - Oklahoma Water (From Hugo to Lake Lewisville)
From Hugo to Lake Chapman to Lavon

Probable Owner:	UTRWD				
Quantity:	15,000 AF/Y				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline Rural	30.0 in	274,560	LF	$151	$41,446,000
30-ft Right of Way Easements (ROW)		274,560	LF	$16	$4,291,000
Red River Tunnel		1,000	LF	$1,110	$1,110,000
Engineering and Contingencies (30%)					$12,767,000
Subtotal of Pipeline					**$59,614,000**
Pump Station(s)					
Pumps with intake & building	1850 HP	2	LS	$8,286,370	$16,573,000
Chapman Pump Station Expansion					$791,000
Booster on Chapman-Lavon Line					$9,506,000
Storage Tanks	2 MG	1	LS	$1,243,213	$1,243,000
Engineering and Contingencies (35%)					$9,840,000
Subtotal of Pump Station(s)					**$37,953,000**
CONSTRUCTION TOTAL					**$97,567,000**
Permitting and Mitigation					$1,304,000
Interest During Construction			18 months		$5,122,000
TOTAL COST					**$103,993,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$8,345,000
Electricity ($0.09 per kWh)					$2,836,000
Operation & Maintenance					$1,285,000
Raw Water Purchase	Assumed 0.15 per 1000 gallons				$733,000
Total Annual Costs					**$13,199,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$880
Per 1,000 Gallons					$2.70
UNIT COSTS (After Amortization)					
Per Acre-Foot					$324
Per 1,000 Gallons					$0.99

Note: Cost for buying raw water is assumed to be $0.15 per 1,000 gallons

Table Q-56 UTRWD - Additional Reuse			
Capital Costs			
Strategy		**UTRWD Cost**	
	Amount	**Capital Cost**	
Additional Reuse	15,000	$1,000,000	
Annual Costs			
Strategy		**Basis for Cost**	
Additional Reuse	Permitting	N/A	
Strategy		**Basis for Cost**	
	UTRWD Amount	**During Amortization**	**After Amortization**
Additional Reuse	15,000	$84,000	$0.00
Unit Costs			
	UTRWD Amount	**During Amortization**	**After Amortization**
Additional Reuse	15,000	$0.02	$0.00

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices
NTMWD - Q-57 NTMWD Toledo Bend to Leonard WTP

Cost based on ENR CCI 9552 for Sep-13 and a PPI of 187 for Sep-13

Item	Estimated Costs for Facilities
CAPITAL COST	
Terminal Storage	$22,304,000
Intake Pump Stations (133.9 MGD)	$46,100,000
Transmission Pipeline (90 in dia., 206 miles)	$775,269,000
Transmission Pump Station(s) & Storage Tank(s)	$52,900,000
TOTAL COST OF FACILITIES	**$896,573,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$275,037,000
Environmental & Archaeology Studies and Mitigation	$6,740,000
Land Acquisition and Surveying (793 acres)	$6,940,000
Interest During Construction (4% for 2 years with a 1% ROI)	$63,171,000
TOTAL COST OF PROJECT	**$1,248,461,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$101,603,000
Reservoir Debt Service (5.5 percent, 40 years)	$2,136,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$10,014,000
Dam and Reservoir (1.5% of Cost of Facilities)	$335,000
Pumping Energy Costs (96186370 kW-hr @ 0.09 $/kW-hr)	$15,139,000
Purchase of Water (100000 acft/yr @ 32.59 $/acft)	$3,259,000
TOTAL ANNUAL COST	**$132,486,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 1.5	100,000
Annual Cost of Water until Amortized ($ per acft)	$1,325
Annual Cost of Water until Amortized ($ per 1,000 gallons)	$4.07
Annual Cost of Water after Amortization ($ per acft)	$309
Annual Cost of Water after Amortization ($ per 1,000 gallons)	$0.95

JSA *10/20/2015*

Table Q-58
Trinity River Authority Las Colinas Reuse (Dallas County Irrigation)

Owner: Trinity River Authority
Amount: 7,000 Ac-Ft/Yr

	Size	Quantity	Unit	Unit Price	Cost
CAPITAL COSTS					
Cost of Additional Pipeline	24	42,240	LF	$ 159	$6,696,000
Easement Costs	20 ft.	9.7	AC	$ 3,636	$35,000
Engineering & Contingencie (30%)					$2,009,000
Total Pipeline Cost					**$8,740,000**
Cost of Pump Station	770 HP	1	LS	$ 2,833,782	$2,834,000
Storage Tank	2 MG	1	LS	$967,774	$968,000
Engineering & Contingencie (35%)					$1,282,000
Total Pump Station & Storage Tanks Cost					**$5,084,000**
TOTAL CAPITAL COST					**$13,824,000**
Permitting and Mitigation & Surveying					**$225,000**
Interest during Construction			24 months		$968,000
TOTAL COST					**$15,017,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,257,000
Electricity ($0.09 kWh)					$197,000
Operation & Maintenance					$147,000
Purchase of Treated Wastewater for Reuse			$0.50	per 1,000 gallon	$1,141,000
Total Annual Costs					**$2,742,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$392
Per 1,000 gallons					$1.20
UNIT COSTS (After Amortization)					
Per Acre-Foot					$212
Per 1,000 gallons					$0.65

Note: Cost to purchase reuse water is assumed to be $0.5 per 1,000 Gallons

Table Q-59
Trinity River Authority Dallas County Reuse for Steam Electric Power

Owner: Trinity River Authority
Amount: 2,000 Ac-Ft/Yr

	Size	Quantity	Unit	Unit Price	Cost
CAPITAL COSTS					
Cost of Additional Pipeline	16	42,240	LF	$ 89	$3,753,000
Pipeline Easement Costs	20 ft.	9.7	AC	$ 3,636	$35,000
Engineering & Contingencie (30%)					$1,126,000
Total Pipeline Cost					**$4,914,000**
Cost of Pump Station	282 HP	1	LS	$ 1,802,516	$1,803,000
Storage Tank	0.5 MG	1	LS	$412,257	$412,000
Engineering & Contingencie (35%)					$755,000
Total Pump Station Cost					**$2,970,000**
TOTAL CAPITAL COST					**$7,884,000**
Permitting and Mitigation					**$225,000**
Interest during Construction			24 months		$552,000
TOTAL COST					**$8,661,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$725,000
Electricity ($0.09 kWh)					$43,000
Operation & Maintenance					$87,000
Purchase of Treated Wastewater for Reuse			$0.50	per 1,000 gallon	$326,000
Total Annual Costs					**$1,181,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$591
Per 1,000 gallons					$1.81
UNIT COSTS (After Amortization)					
Per Acre-Foot					$228
Per 1,000 gallons					$0.70

Note: Cost to purchase reuse water is assumed to be $0.05 per 1,000 gallons

Table Q-60
Trinity River Authority Ellis County Reuse for Steam Electric Power

Owner: Trinity River Authority
Amount: 4,700 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Cost of Pipeline	24	52,800	LF	$ 159	$8,370,000
Right of Way Easements (ROW)	20 ft.	12.1	AC	3636	$44,000
Engineering & Contingencies (30%)					$2,511,000
Total Pipeline Cost					**$10,925,000**
Cost of Pump Station	550 HP	1	LS	$ 3,864,912	$3,865,000
Storage Tank	1 MG	1	LS	$724,692	$725,000
Engineering & Contingencies (35%)					$1,570,000
Total Pump Station Cost					**$6,160,000**
TOTAL CAPITAL COST					**$17,085,000**
Permitting and Mitigation					**$275,000**
Interest during Construction			12 months		$598,000
TOTAL COST					**$17,958,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,503,000
Electricity ($0.09 kWh)					$119,000
Operation & Maintenance					$225,000
Purchase of Reuse Water		$0.50	per 1,000 gallon		$766,000
Total Annual Costs					**$2,613,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$556
Per 1,000 gallons					$1.71
UNIT COSTS (After Amortization)					
Per Acre-Foot					$236
Per 1,000 gallons					$0.72

Note: Cost to purchase reuse water is assumed to be $0.5 per thousand gallons.

Table Q-61
Trinity River Authority Freestone County Reuse for Steam Electric Power

Owner: Trinity River Authority
Amount: 6,760 ac-ft/yr

CAPITAL COSTS					
Phase 1					
	Size	**Quantity**	**Units**	**Unit Price**	**Cost**
Transmission Facilities					
Pipeline (Rural)	30 in.	79,200	LF	$ 211	$ 16,714,000
Right of Way Easements (Rural)	20 ft.	18.2	AC	$2,746	$ 50,000
Pipeline Eng &Contingencies (30%)					$ 5,014,000
Pipeline Subtotal					**$ 21,778,000**
Pump Station (Intake)	788 HP	1	LS	$ 5,091,377	$ 5,091,000
Storage Tanks	2 MG	1	LS	$971,853	$ 972,000
Engineering and Contingencies (35%)					$ 2,073,000
Pump Station Subtotal					**$ 8,136,000**
Permitting and Mitigation					**$394,000**
Interest During Construction			12 months		$285,000
TOTAL CAPITAL COST					**$ 30,593,000**
ANNUAL COSTS					
					Cost
Debt Service (5.5%, 20 years)					$2,560,000
Pipeline O&M (1%)					$ 177,000
Pump O&M (2.5%)					$ 127,000
Electricity					$ 171,000
Purchase of Reuse Water		0.50 per 1,000 gallon			$ 1,102,000
TOTAL ANNUAL COST					**$ 4,137,000**
Phase 1 Unit Costs (During Amortization)					
Cost per acre-ft					$ 612
Cost per 1000 gallons					$ 1.88
Phase 1 Unit Costs (After Amortization)					
Cost per acre-ft					$ 233
Cost per 1000 gallons					$ 0.72

Q-62
Trinity River Authority Kaufman County Reuse for Steam Electric Power

Owner: Trinity River Authority
Quantity: 1,000 ac-ft/yr

CAPITAL COSTS					
	Size	**Quantity**	**Units**	**Unit Price**	**Cost**
Transmission Facilities					
Pipeline (Suburban)	12 in.	79,200	LF	$ 54	$ 4,238,000
Right of Way Easements (Suburban)	20 ft.	18.2	AC	$ 2,746	$ 50,000
Pipeline Eng &Contingencies (30%)					$ 1,271,000
Pipeline Subtotal					**$ 5,559,000**
Pump Station	179 HP	1	LS	$ 1,953,069	$ 1,953,000
Storage Tank	0.22 MG	1	LS	$260,243	$ 260,000
Engineering and Contingencies (35%)					$ 762,000
Pump Station Subtotal					**$ 2,715,000**
Permitting and Mitigation					**$394,000**
Interest During Construction				12 months	$95,000
TOTAL CAPITAL COST					**$ 8,763,000**
ANNUAL COSTS					
					Cost
Debt Service (5.5%, 20 years)					$653,000
Pipeline O&M (1%)					$ 45,000
Pump O&M (2.5%)					$ 49,000
Electricity					$ 26,000
Purchase of Reuse Water		0.5 per 1,000 gallon			$ 163,000
TOTAL ANNUAL COST					**$ 936,000**
Phase 1 Unit Costs (During Amortization)					
Cost per acre-ft					$ 936
Cost per 1000 gallons					$ 2.87
Phase 1 Unit Costs (After Amortization)					
Cost per acre-ft					$ 283
Cost per 1000 gallons					$ 0.87

Table Q-63
GTUA Reuse for Grayson County Steam Electric Power

Owner: Greater Texoma Utility Authority
Amount: 6,548 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Cost of Pipeline	30	79,200	LF	$ 137	$10,876,000
Total Pipeline Cost					**$10,876,000**
Cost of Pump Station					$6,580,000
Total Pump Station Cost					**$6,580,000**
Engineering & Contingencies (30%)					$3,263,000
Engineering & Contingencies (35%)					$2,303,000
Total Contingencies					$5,566,000
CONSTRUCTION TOTAL					**$17,456,000**
Environmental & Archaeology Studies and Mitigation					**$375,000**
Land Acquisition & Surveying					**$135,000**
Interest during Construction			**12 months**		$824,000
TOTAL CAPITAL COST					**$24,356,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$2,038,000
Electricity ($0.09 kWh)					$259,000
Operation & Maintenance					$250,000
Purchase of Reuse Water					$0
Total Annual Costs					**$2,547,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$389
Per 1,000 gallons					$1.19
UNIT COSTS (After Amortization)					
Per Acre-Foot					$78
Per 1,000 gallons					$0.24

Note: Cost to purchase reuse water is not assumed as it is accounted for elsewhere

Table Q-64
Grayson County Water Supply Project

Owner: GTUA
Amount: 25,528 Ac-Ft/Yr
46 MGD peak

TRANSMISSION FACILITIES					
Pipeline(s)	**Size**	**Qty.**	**Units**	**Unit Cost**	**Cost**
10" Water Line					
Pipe	10 in.	6,769	LF	$ 49	$ 331,000
ROW		3	AC	$ 3,376	$ 10,000
8" Water Line					
Pipe	8 in.	262,734	LF	$ 43	$ 11,407,000
ROW		121	AC	$ 3,636	$ 439,000
6" Water Line					
Pipe	6 in.	285,492	LF	$ 28	$ 7,927,000
ROW		131	AC	$ 3,636	$ 477,000
Engineering and Contingencies		30%			$ 6,177,000
Subtotal of Pipeline(s)					**$ 26,768,000**
Pump Station(s)					
Station 1					
Pump, building, & appurtances	315 HP	1	LS	$ 2,653,906	$ 2,654,000
Storage Tank	3.8 MG	1	LS	$ 1,770,806	$ 1,771,000
Station 2					
Pump, building, & appurtances	315 HP	1	LS	$1,906,098	$ 1,906,000
Storage Tank	3.8 MG	1	LS	$ 1,770,806	$ 1,771,000
Engineering and Contingencies		35%			$ 2,836,000
Subtotal of Pump Station(s)					**$ 10,938,000**
WATER TREATMENT FACILITIES					
New Treatment Plants					
North Plant	1 MGD	1	LS	$5,497,300	$ 5,497,000
Northwest Plant	2 MGD	1	LS	$9,016,100	$ 9,016,000
Water Treatment Plant Expansions					
North Plant	3 MGD	1	LS	$9,192,000	$ 9,192,000
Northwest Plant 1	1 MGD	1	LS	$4,031,000	$ 4,031,000
Northwest Plant 2	2 MGD	1	LS	$6,612,000	$ 6,612,000
Engineering and Contingencies		35%			$ 12,022,000
Subtotal of Water Treatment Plant					**$ 46,370,000**
PERMITTING AND MITIGATION					**$ 2,690,000**
CONSTRUCTION TOTAL					**$ 86,766,000**

Table Q-64, Continued					
Interest During Construction	(24 months)				**$ 6,074,000**
TOTAL CAPITAL COST					**$ 92,840,000**
ANNUAL COSTS					
Debt Service					$ 7,769,000
Operation and Maintenance Costs					
Pipeline	1%				$ 236,000
Pump Station	3%				$ 243,000
Estimated Annual Power Cost	$0.09/kWh				$ 83,000
WTP Operation - conventional*	4,155,953	1000 gal	$	0.70	$ 2,909,000
WTP Operation - RO*	4,155,953	1000 gal	$	1.24	$ 5,153,000
WTP Brine Disposal*	1,038,988	1000 gal	$	0.35	$ 364,000
Raw Water Cost	28,719	Ac-Ft	$	163	$ 4,679,000
Subtotal Annual Costs					**$ 21,436,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$840
Cost per 1000 gallons					$2.58
UNIT COSTS (After Amortization)					
Cost per ac-ft					$535
Cost per 1000 gallons					$1.64

Note: Raw water is assumed to cost $163 per acre-foot.
* Based on more detailed information.

Table Q-65
GTUA - Collin-Grayson Municipal Alliance East-West Water Line

Owner:	GTUA (water from NTMWD)
2070 Amount:	11,400 Ac-Ft/Yr

Transmission Facilities Estimate provided by GTUA

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Description	**Qty.**	**Units**	**Unit Cost**	**Total Cost**
18" Water Line (urban)	11,418	LF	$106.53	$1,216,000
18" Water Line by Boring (U.S. 75)	316	LF	$530.23	$168,000
18" Water Line by Boring (City Streets)	180	LF	$446.51	$80,000
18" Line Valves	5	EA	$11,721	$59,000
Air Release Valves	8	EA	$7,256	$58,000
Blow-off Assemblies	7	EA	$7,814	$55,000
Cathodic Test Stations	4	EA	$2,233	$9,000
Class G Embedment	80	LF	$66.98	$5,000
Crushed Stone for Trench Stabilization	50	CY	$44.65	$2,000
Replace Asphalt Pavement	100	SY	$50.23	$5,000
Replace Gravel Driveways	100	SY	$27.91	$3,000
Raise or Lower Waterline	30	LF	$112	$3,000
Replace Sewer Line	20	LF	$112	$2,000
Trench Safety	11,418	LF	$2.23	$25,000
SWPPP	11,418	LF	$1.12	$13,000
Clearing	34	STA	$558	$19,000
36" Water Line (rural)	2,930	LF	$264	$772,000
Total Construction Cost				$2,494,000
Engineering & Contingencies (20%)				$748,200
Inflation (5%)				$162,000
TRANSMISSION SUBTOTAL				$3,404,200
Easements	14,348	20	$3,506	$69,000
Permitting & Mitigation				$75,000
Construction Total				**$3,548,200**
Interest During Construction		12 months		$124,000
TOTAL CAPITAL COST				**$3,672,000**

ANNUAL COSTS

Debt Service				$307,000
Operation and Maintenance	1%			$25,000
Estimated Annual Power Cost	$0.09			$364,000
Treated Water Cost	3,714,701	1000 gal	$ 2.50	$9,287,000
Total Annual Cost				$9,983,000

UNIT COSTS (During Amortization)

Cost per ac-ft	$876
Cost per 1000 gallons	$2.69

UNIT COSTS (After Amortization)

Cost per ac-ft	$849
Cost per 1000 gallons	$2.60

Table Q-66
GTUA - Collin-Grayson Municipal Alliance Water Transmission System - Phase 2

Probable Owner: GTUA (water from NTMWD)
Quantity: 14,541 AF/Y

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline		**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
McKinney to Melissa Pipeline	Urban	42 in.	18,000	LF	$ 316	$5,680,000
McKinney to Melissa Pipeline	Rural	42 in.	15,000	LF	$ 316	$4,733,000
Melissa to Anna Pipeline	Rural	36 in.	23,000	LF	$ 264	$6,061,000
Anna to Weston Pipeline	Rural	30 in.	37,000	LF	$ 211	$7,808,000
Right of Way Easements Rural (ROW)			75,000	LF	$16	$1,172,000
Right of Way Easements Urban (ROW)			18,000	LF	$93	$1,668,000
Engineering and Contingencies (30%)						$7,285,000
Subtotal of Pipeline						**$34,407,000**
Pump Station(s)						
McKinney Pump Station		2200 HP	1	LS	$4,556,009	$4,556,000
Melissa Booster Pump Station		1800 HP	1	LS	$4,102,423	$4,102,000
Anna Booster Pump Station		1400 HP	2	LS	$3,648,837	$7,298,000
Engineering and Contingencies (35%)						$5,585,000
Subtotal of Pump Station(s)						**$21,541,000**
Ground Storage						
Ground Storage Tank at Melissa		1 MG	1	LS	$590,309	$590,000
Ground Storage Tank at Anna		1 MG	1	LS	$497,395	$497,000
Engineering and Contingencies (35%)						$380,000
Subtotal of Ground Storage						**$1,467,000**
CONSTRUCTION TOTAL						**$57,415,000**
Permitting and Mitigation						**$67,000**
Interest During Construction				12 months		$2,010,000
TOTAL COST						**$59,492,000**
ANNUAL COSTS						
Debt Service (6% for 30 years)						$4,978,000
Electricity ($0.09 kWh)						$427,000
Operation & Maintenance						$669,000
Treated Water Purchase			4,740,366	1000 gal	$ 2.50	$11,851,000
Total Annual Costs						**$17,925,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot of treated water						$1,233
Per 1,000 Gallons						$3.78
UNIT COSTS (After Amortization)						
Per Acre-Foot						$890
Per 1,000 Gallons						$2.73

Table Q-67
Fort Worth Future Direct Reuse*

Owner:	Fort Worth			
Amount:	8,166 Ac-Ft/Yr			

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Pipeline(s)	**Qty.**	**Units**	**Unit Cost****	**Total Cost**
36" Pipe	6300	LF	$ 278	$ 1,753,000
ROW	3	ac	$ 36,300	$ 105,000
30" Pipe	73,800	LF	$ 217	$ 16,047,000
ROW	8	ac	$ 36,309	$ 281,000
24" Pipe	61,500	LF	$ 194	$ 11,949,000
ROW	14	ac	$ 36,430	$ 505,000
20" Pipe	6,700	LF	$ 190	$ 1,271,000
ROW	2	ac	$ 36,300	$ 85,000
18" Pipe	33,500	LF	$ 143	$ 4,792,000
ROW	5	ac	$ 36,425	$ 194,000
16" Pipe	46,200	LF	$ 127	$ 5,866,000
ROW	19	ac	$ 36,236	$ 706,000
14" Pipe	0	LF	$ -	$ -
ROW	0	ac	$ -	$ -
12" Pipe	27,500	LF	$ 100	$ 2,741,000
ROW	5	ac	$ 36,300	$ 195,000
10" Pipe	20,400	LF	$ 80	$ 1,640,000
ROW	1	ac	$ 36,300	$ 50,000
8" Pipe	6,800	LF	$ 61	$ 418,000
ROW	0	LF		$ -
6" Pipe	40,800	LF	$ 51	$ 2,075,000
ROW	4	LF	$ 36,216	$ 134,000
4" Pipe	23,500	LF	$ 44	$ 1,025,000
ROW	0%	LF		$ -
New Easement	**33,600**	**LF**	**$ 58**	**$ 1,958,000**
Engineering and Contingencies	32%			$ 16,325,000
Subtotal of Pipeline(s)				$ 70,115,000
Pump Station(s)				
VCWRF Pump Station				
Pump, building, & appurt.	1	HP		$ 1,441,000
Booster Pump Station				
Pump, building, & appurt.	1	HP		$ 4,170,000
1 MG Storage Tanks	2		$ -	$ 1,534,000
Chlorine Booster Stations	2		$ -	$ 1,065,000
Mary's Creek Station 1				
Pump, building, & appurt.	1,483	HP		$ 2,904,000
Storage Tank		MG		$ 1,198,000
Mary's Creek Station 2				
Pump, building, & appurt.	1,465	HP		$ 3,306,000
Storage Tank	2	MG		$ 1,016,000
Mary's Creek Station 3				
Pump, building, & appurt.	2,078	HP		$ 4,494,000
Storage Tank	4	MG		$ 2,105,000
Southern Station 1				
Pump, building, & appurt.	624	HP		$ 2,306,000
Storage Tank		MG		
Engineering and Contingencies	36.3%			$ 9,263,000
Subtotal of Pump Station(s)				$ 34,802,000

Table Q-67, Continued				
WASTEWATER TREATMENT FACILITIES				
VCWRF Alkalinity Control	1		$	175,000
VCWRF UV Disinfection	1		$	1,576,000
VCWRF Denitrification	1		$	717,000
VCWRF Site Work & Yard Piping	1		$	493,000
Southern Service Area WRC	1		$	9,982,000
Engineering and Contingencies	35.9%		$	4,646,000
Subtotal of Wastewater Treatment Plant			**$**	**17,589,000**
PERMITTING AND MITIGATION	1.0%		$	986,000
CONSTRUCTION TOTAL			**$**	**123,492,000**
Interest During Construction		18 months	$	6,484,000
TOTAL CAPITAL COST			**$**	**129,976,000**
ANNUAL COSTS				
Debt Service			$	8,942,000
Operation and Maintenance Costs				
CBD Pipeline	12.1%		$	309,000
CBD Pump Station/Storage	10.8%		$	186,000
CBD Chlorine Booster Station			$	29,000
VCRWF Pump Station Power	$0.09/kWh	28 kW	$	21,000
CBD Booster Pump Station Power	$0.09/kWh	114 kW	$	87,000
VCWRF Sulfuric Acid			$	54,000
VCWRF UV Disinfection Power	$0.09/kWh	23 kW	$	17,000
VCWRF Denitrification Power	$0.09/kWh	12 kW	$	9,000
VCWRF Facility Operation	0.5%		$	77,000
Mary's Creek Pipeline	0.7%		$	168,000
Mary's Creek Pump Station/Storage	2.4%		$	382,000
Mary's Creek Chlorine Booster Station			$	-
Mary's Creek Pump Station 1 Power	$0.10/kWh	206 kW	$	196,000
Mary's Creek Pump Station 2 Power	$0.10/kWh	123 kW	$	117,000
Mary's Creek Pump Station 3 Power	$0.10/kWh	82 kW	$	79,000
Mary's Creek Sulfuric Acid			$	-
Mary's Creek UV Disinfection Power	$0.09/kWh		$	-
Mary's Creek Denitrification Power	$0.09/kWh		$	-
Mary's Creek WRC Facility Operation	2.5%		$	-
Southern Pipeline	0.1%		$	73,000
Southern Pump Station/Storage	0.1%		$	69,000
Southern Chlorine Booster Station			$	-
Southern Pump Station 1 Power	$0.10/kWh	38 kW	$	36,000
Southern WRC Power	$0.10/kWh	215 kW	$	206,000
Southern Pump Station 3 Power	$0.10/kWh	0 kW	$	-
Southern Sulfuric Acid			$	-
Southern UV Disinfection Power	$0.09/kWh		$	-
Southern Denitrification Power	$0.09/kWh		$	-
Southern WRC Facility Operation	0.1%		$	71,000
Total Annual Costs			**$**	**11,128,000**
UNIT COSTS (First 30 Years)				
Per Acre-Foot			$	1,363
Per 1,000 Gallons			$	4.18
UNIT COSTS (After 30 Years)				
Per Acre-Foot			$	268
Per 1,000 Gallons			$	0.82

Table Q-68
Fort Worth Direct Reuse - Alliance Corridor*

Owner:	Fort Worth				
Amount:	11,537 Ac-Ft/Yr				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline(s)	**Qty.**	**Units**	**Unit Cost***		**Total Cost***
Water Line					
24" Pipe	17,374	LF	$371	$	6,441,000
ROW	8	ac	$130,753	$	1,043,000
15" Pipe	17,374	LF	$319	$	5,538,000
ROW	12	ac	$130,753	$	1,565,000
Engineering and Contingencies	39%			$	5,583,000
Subtotal of Pipeline(s)				**$**	**20,170,000**
Pump Station(s)					
Hillwood Pump Station, Ph I					
Pump, building, & appurt.	1		$ 265,000	$	265,000
Flower Mound Pump Station Ph 1					
Pump, building, & appurt.	1		$ 130,000	$	130,000
Hillwood Pump Station, Ph 2					
Pump, building, & appurt.	1		$ 419,000	$	419,000
Flower Mound Pump Station Ph 2					
Pump, building, & appurt.	1		$ 276,000	$	276,000
Engineering and Contingencies	39.2%			$	513,000
Subtotal of Pump Station(s)				**$**	**1,603,000**
WASTEWATER TREATMENT FACILITIES					
Bulk Hyphochlorite System	100%		381000	$	381,000
Engineering and Contingencies	37.1%			$	169,000
Subtotal of Wastewater Treatment Plant				**$**	**550,000**
PERMITTING AND MITIGATION	1%			$	161,000
CONSTRUCTION TOTAL				**$**	**22,484,000**
Interest During Construction		18 months		$	1,180,000
TOTAL CAPITAL COST				**$**	**23,664,000**
ANNUAL COSTS					
Debt Service				$	1,628,000
Operation and Maintenance Costs					
Pipeline	1%			$	144,000
Pump Station/Storage	3%			$	33,000
Hypochlorite Facility Operation	3%			$	11,000
Chemicals				$	40,000
Total Annual Costs				**$**	**1,856,000**
UNIT COSTS (First 30 Years)					
Per Acre-Foot				$	161
Per 1,000 Gallons				$	0.49
UNIT COSTS (After 30 Years)					
Per Acre-Foot				$	20
Per 1,000 Gallons				$	0.06

* Costs are from Scenario A in the Denton Creek Regional Wastewater System Master Plan Update (2014). Costs have been updated to September 2013 dollars using the Engineering News-Record Construction Cost Index.

Table Q-69
Blue Ridge - Connect to and Purchase Water from NTMWD

Owner: NTMWD
Amount: 2,242 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pipeline from Farmersville to Blue Ridge	24 in.	5,000	LF	$113	$565,000
Right of Way Easements (ROW)		2	AC	$3,636	$8,000
Engineering and Contingencies (30%)					$172,000
Subtotal of Pipeline					**$745,000**
New 24" Tap & Metering Facilities					
New 24" Tap & Metering Facilities		1	LS	$446,512	$446,512
Ground Storage with Roof	1 MG	1	LS	$698,776	$698,776
Engineering and Contingencies (35%)					$401,000
Subtotal of Tap and Metering					**$1,546,288**
Permitting and Mitigation					**$31,369**
CONSTRUCTION TOTAL					**$2,322,656**
Interest During Construction		**(12 months)**			**$81,000**
TOTAL CAPITAL COST					**$2,403,656**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$201,000
Treated Water ($1.75 per 1,000 gallons)					$1,278,000
Operation & Maintenance					$41,000
Total Annual Costs					**$1,520,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$678
Per 1,000 Gallons					$2.08
UNIT COSTS (After Amortization)					
Per Acre-Foot					$588
Per 1,000 Gallons					$1.81

Table Q-70
Blue Ridge - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Owner: NTMWD
Amount: 3,080 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline from Farmersville to Blue Ridge	30 in.	5,000	LF	$151	$755,000
Right of Way Easements (ROW)	20 ft.	2	AC	$3,636	$8,000
Engineering and Contingencies (30%)					$229,000
Subtotal of Pipeline					**$992,000**
Permitting and Mitigation					**$9,000**
CONSTRUCTION TOTAL					**$1,001,000**
Interest During Construction		**(12 months)**			**$35,000**
TOTAL CAPITAL COST					**$1,036,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$87,000
Treated Water ($1.75 per 1,000 gallons)					$1,756,000
Operation & Maintenance					$9,000
Total Annual Costs					**$1,852,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$601
Per 1,000 Gallons					$1.85
UNIT COSTS (After Amortization)					
Per Acre-Foot					$573
Per 1,000 Gallons					$1.76

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-71 Celina - Connect to and Purchase Water from NTMWD*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (24 in dia., 9 miles)	$5,667,000
Transmission Pump Station(s) & Storage Tank(s)	$5,995,000
TOTAL COST OF FACILITIES	**$11,662,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$3,798,000
Environmental & Archaeology Studies and Mitigation	$218,000
Land Acquisition and Surveying (21 acres)	$84,000
Interest During Construction (4% for 1 years with a 1% ROI)	$552,000
TOTAL COST OF PROJECT	**$16,314,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,365,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$187,000
Pumping Energy Costs (1860928 kW-hr @ 0.09 $/kW-hr)	$167,000
Purchase of Water (5000 acft/yr @ 1.75 $/acft)	$9,000
TOTAL ANNUAL COST	**$1,728,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	5,000
Annual Cost of Water ($ per acft)	$346
Annual Cost of Water ($ per 1,000 gallons)	$1.06
KNR	4/9/2015

Table Q-72
Collin County Manufacturing - New Well in Woodbine Aquifer
Collin County, Woodbine Aquifer

Need	78 Ac-ft/yr	
Depth to Water	70	
Well Depth	550 ft	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	81 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1		$118,155	$118,200
Connection to Transmission System	1		$178,605	$178,600
Engineering and Contingencies				$95,000
Subtotal of Well(s)				**$391,800**
Permitting and Mitigation				$4,000
Construction Total				**$395,800**
Interest During Construction	6 months			$7,000
Total Capital Cost				**$402,800**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$34,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$4,000
Add Chemicals etc.	25,416	$0.33 per 1000 gal		$8,500
Pumping Costs				$1,000
		Total Annual Cost		**$49,500**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$635
Cost per 1000 gallons				$1.95
UNIT COSTS (After Amortization)				
Cost per ac-ft				$199
Cost per 1000 gallons				$0.61

Table Q-73
Collin County Other - New Well in Woodbine Aquifer
Collin County, Woodbine Aquifer

	Need	92 Ac-ft/yr	
	Depth to Water	405	
	Well Depth	1430 ft	
	Well Yield	180 gpm	290 ac-ft (peak)
	Well Size	8 in	145 ac-ft (average)
	Wells Needed	1	

Total Capital Cost of Well*			$650,000
Total Capital Cost of Pump Station with Ground Storage*			$750,000
Total Capital Cost			**$1,400,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$117,000
O&M			
Transmission and Well	2.5%		$35,000
Add Chemicals etc.	29,978	$0.33 per 1000 gal	$10,000
Pumping Costs			$8,000
Total Annual Cost			**$170,000**
UNIT COSTS (During Amortization)			
Cost per ac-ft			$1,848
Cost per 1000 gallons			$5.67
UNIT COSTS (After Amortization)			
Cost per ac-ft			$576
Cost per 1000 gallons			$1.77

*From Eddy Daniel, DBI Engineers, email

Table Q-74
Frisco - Develop Direct Reuse

Owner: Frisco
Amount: 5,650 Ac-ft/yr

CAPITAL COSTS*	Description	Size	Quantity	Unit		Unit Price	Cost
Cost of Pipeline	20" line on Main St, Teel to DNT;	20 in	7,500	LF	$	134	$1,005,000
Cost of Pipeline	12" line on Legacy, Main to	12 in	8,800	LF	$	80	$707,274
Pavement Repair	Eldorado		1,250	LF	$	45	$55,814
Cost of Pipeline	8"/12"/16" line in Lebanon from	16 in	1,000	LF	$	107	$107,000
Cost of Pipeline	4th Army to Legacy and in	12 in	8,200	LF	$	80	$659,051
Cost of Pipeline	Legacy from Lebanon to	8 in	3,500	LF	$	54	$187,535
16" Boring and Casing	Chippeewa	16 in	100	LF	$	218	$21,767
Pavement Repair			1,270	LF	$	45	$56,707
Cost of Pipeline	16"/24" line on Gary Burns and	16 in	1,800	LF	$	107	$192,893
Cost of Pipeline	Hutson Dr. from Main St to Frisco	24 in	5,200	LF	$	161	$835,870
36" Boring and Casing	#2	36 in	100	LF	$	482	$48,223
Pavement Repair			6,000	LF	$	45	$267,907
Reuse Pump Station	P.S. at Panther Creek WWTP		1	LS	$	2,790,698	$2,790,698
Cost of Pipeline	24" line from Panther Creek	24 in	17,600	LF	$	161	$2,829,098
36" Boring and Casing	WWTP along Teel Pkwy to	36 in	400	LF	$	482	$192,893
Pavement Repair	existing 24" reuse line		9,000	LF	$	45	$401,860
Cost of Pipeline	12" line in John W. Elliot Dr. from	12 in	1,600	LF	$	80	$128,595
Pavement Repair	Main St. to Senior Center**		160	LF	$	45	$7,144
Cost of Pipeline	Eldorado Pkwy from Frisco St. to	24 in	19,500	LF	$	161	$3,135,000
36" Boring and Casing	Preston Rd, in Preston Rd. to	36 in	350	LF	$	482	$168,781
Pavement Repair	Main St.		3,000	LF	$	45	$133,953
Yard Pipe	Piping Changes at Frisco 2 Site		1	LS	$	78,140	$78,140
Cost of Pipeline	16" line in Hutson Dr. from	16 in	5,500	LF	$	107	$589,395
Cost of Pipeline	Preston Rd. to Frisco #2 and in	12 in	4,300	LF	$	80	$345,600
30" Boring and Casing	Preson Rd. from Hutson Dr. to	30 in	100	LF	$	402	$40,186
24" Boring and Casing	Stonebrook Pkwy; 0.5 MG Reuse	24 in	100	LF	$	321	$32,149
Pavement Repair	Elevated Storage Tank		980	LF	$	45	$43,758
Elevated Tank		.5 MG	1	LS	$	669,767	$669,767
Cost of Pipeline	24" line in Eldorado Pkwy. From	24 in.	11,800	LF	$	161	$1,896,781
36" Boring and Casing	Tell Pkwy. To Frisco St.	36 in.	100	LF	$	482	$48,223
Pavement Repair			1,180	LF	$	45	$52,688
Cost of Pipeline	20" line in Main St. from Frisco #2	20 in.	10,300	LF	$	134	$1,379,721
30" Boring and Casing	to Coit Rd, in Coit Rd to	30 in.	200	LF	$	402	$80,372
Pavement Repair	Southeast Community Park		1,030	LF	$	45	$45,991

Table Q-74, Continued							
Cost of Pipeline	12" line in Coit Rd from 20" line to	12 in.	4,500	LF	$	80	$361,674
Cost of Pipeline	Rolater Rd, 8" line in Rolater Rd.	8 in.	5,700	LF	$	54	$305,414
24" Boring and Casing	to Hillcrest Rd.	24 in.	200	LF	$	321	$64,298
Pavement Repair			1,020	LF	$	45	$45,544
Cost of Pipeline		8 in.	8,600	LF	$	54	$460,800
16" Boring and Casing	8" line in Stonebrook Pkwy from	16 in.	100	LF	$	218	$21,767
Pavement Repair	Preston Rd. to Dallas Pkwy.		860	LF	$	45	$38,400
Cost of Pipeline		12 in.	4,300	LF	$	80	$345,600
24" Boring and Casing	12" line in Preston Rd from	24 in.	300	LF	$	321	$96,447
Pavement Repair	Stonebrook/Rolater to Wade Blvd		430	LF	$	45	$19,200
Cost of Pipeline	8" line in Wade Blvd from Preston	8 in.	4,500	LF	$	54	$241,116
16" Boring and Casing	Rd to Ohio Dr.	16 in.	100	LF	$	218	$21,767
Pavement Repair			450	LF	$	45	$20,093
Cost of Pipeline		8 in.	5,900	LF	$	54	$316,130
Pavement Repair	8" line in Ohio Dr. from Wade		285	LF	$	45	$12,726
	Blvd to Hillcrest Rd; 8" in Hillcrest						
	from Ohio Dr. to Rolater Rd.**						
Cost of Pipeline		12 in.	2,900	LF	$	80	$233,079
Cost of Pipeline	12" line in Preston Rd from Wade	8 in.	4,500	LF	$	54	$241,116
Pavement Repair	Blvd to Lebanon Rd; 8" line in		600	LF	$	45	$26,791
	Lebanon, Preston to Colby Drive						
Cost of Pipeline	12" line in Rogers Rd from the	12 in.	7,800	LF	$	80	$626,902
24" Boring and Casing	Warren Sports Complex to	24 in.	200	LF	$	321	$64,298
Pavement Repair	existing 12" in McKinney Rd		780	LF	$	45	$34,828
Cost of Pipeline	8" line in College Parkway to	8 in.	3,600	LF	$	54	$192,893
16" Boring and Casing	Plantation Golf Course	16 in.	100	LF	$	218	$21,767
Pavement Repair			300	LF	$	45	$13,395
Cost of Pipeline	16" line in Coit Road to Eldorado	16 in.	8,200	LF	$	107	$878,735
Cost of Pipeline	Pkwy & 12" line in Coit Road and	12 in.	8,300	LF	$	80	$667,088
24" Boring and Casing	Panther Creek to Northeast	24 in.	400	LF	$	321	$128,595
Pavement Repair	Community Park		1,500	LF	$	45	$66,977
Cost of Pipeline	8" line in High Shoals Dr from 24"	8 in.	4,200	LF	$	54	$225,042
16" Boring and Casing	in Teel Pkwy to Pioneer Heritage	16 in.	100	LF	$	218	$21,767
Pavement Repair	Middle School		300	LF	$	45	$13,395
Subtotal							$25,063,484
Contingencies (20%)							$5,012,697
Total Construction Cost							$30,076,180
Engineering, Surveying & Geotech (12%)							$3,625,867
Construction Total							**$33,702,048**
Interest during Construction (12 months)							**$1,180,000**
Total Capital Costs							**$34,882,048**

Table Q-74, Continued	
ANNUAL COSTS	
Debt Service (5.5% for 20 years)	$2,919,000
Operation & Maintenance	$334,000
Purchase of Reuse Water	$921,000
Total Annual Costs	**$4,174,000**
UNIT COSTS (During Amortization)	
Per Acre-Foot	$739
Per 1,000 gallons	$2.27
UNIT COSTS (After Amortization)	
Per Acre-Foot	$222
Per 1,000 gallons	$0.68
*Costs obtained from Frico's Reuse Master Plan	
**Engineering, Surveying & Geotech for this project are 15%	

Table Q-75
Melissa - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Owner: Melissa
Amount: 237 Ac-Ft/Yr

Item No. & Description	Qty.	Units		Unit Cost		Total Cost
Construction Costs*						
Construction Costs	1	LS	$	1,674,419	$	1,674,419
Easement, surveying and legal	1	LS	$	5,849	$	5,849
Program Management	1	LS	$	40,242	$	40,242
Subtotal Construction					**$**	**1,720,510**
Engineering, Contingency, Construction Management, Financial and Legal Costs					$	331,814
Capital Cost Subtotal					**$**	**2,052,324**
Interest During Construction		(12 months)				$72,000
TOTAL CAPITAL COST					**$**	**2,124,324**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	177,800
Operation & Maintenance					$	30,000
Total Annual Costs					**$**	**207,800**
UNIT COSTS (During Amortization)						
Per Acre-Foot						$877
Per 1,000 Gallons						$2.69
UNIT COSTS (After Amortization)						
Per Acre-Foot						$127
Per 1,000 Gallons						$0.39

* Costs provided by City of Melissa's Engineer

Table Q-76 Parker - Increase Pump Station Capacity					
Owner: Parker					
Amount: 5,398 Ac-Ft/Yr					
CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pump Station(s)					
Pump Station Upgrades	524 HP	1	LS	$1,202,000	$1,202,000
Engineering and Contingencies (35%)					$421,000
Subtotal of Pump Station(s)					**$1,623,000**
Permitting and Mitigation					**$0**
CONSTRUCTION TOTAL					**$1,623,000**
Interest During Construction			**(6 months)**		**$28,000**
TOTAL CAPITAL COST					**$1,651,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$138,000
Electricity ($0.09 kWh)					$62,000
Operation & Maintenance					$36,000
Total Annual Costs					**$236,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$43.72
Cost per 1000 gallons					$0.13
UNIT COSTS (After Amortization)					
Cost per ac-ft					$18
Cost per 1000 gallons					$0.06

Table Q-77

Prosper - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD (Phase I)

Owner: Prosper
Amount: 5,398 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline	36 in.	1,565	LF	$188	$294,000
Right of Way Easements (ROW)		1	AC	$3,636	$2,600
Engineering and Contingencies (30%)					$89,000
Subtotal of Pipeline					**$385,600**
Storage Tank(s)					
Ground Storage with Roof	1.6 MG	1	LS	$1,024,325	$1,024,300
Engineering and Contingencies (35%)					$359,000
Subtotal of Storage Tank(s)					**$1,383,300**
Permitting and Mitigation					**$15,104**
CONSTRUCTION TOTAL					**$1,784,004**
Interest During Construction			**(18 months)**		**$94,000**
TOTAL CAPITAL COST					**$1,878,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$157,000
Operation & Maintenance					$35,000
Total Annual Costs					**$192,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$36
Per 1,000 Gallons					$0.11
UNIT COSTS (After Amortization)					
Per Acre-Foot					$6
Per 1,000 Gallons					$0.02

Table Q-78

Prosper - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD (Phase II)

Owner: Prosper
Amount: 5,536 Ac-Ft/Yr (For a total of 10,934 Ac-Ft/Yr)

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline	36 in.	1,565	LF	$188	$294,000
Right of Way Easements (ROW)		1	AC	$3,636	$2,600
Engineering and Contingencies (30%)					$89,000
Subtotal of Pipeline					**$385,600**
Storage Tank(s)					
Ground Storage with Roof	1.6 MG	1	LS	$1,046,402	$1,046,400
Engineering and Contingencies (35%)					$366,000
Subtotal of Storage Tank(s)					**$1,412,400**
Permitting and Mitigation					**$15,104**
CONSTRUCTION TOTAL					**$1,813,104**
Interest During Construction			**(18 months)**		**$95,000**
TOTAL CAPITAL COST					**$1,908,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$160,000
Operation & Maintenance					$35,000
Total Annual Costs					**$195,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$35
Per 1,000 Gallons					$0.11
UNIT COSTS (After Amortization)					
Per Acre-Foot					$6
Per 1,000 Gallons					$0.02

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-79 Weston - Connect to and Purchase Water from NTMWD	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (48 in dia., 9 miles)	$12,904,000
Transmission Pump Station(s) & Storage Tank(s)	$6,771,000
TOTAL COST OF FACILITIES	**$19,675,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$6,241,000
Environmental & Archaeology Studies and Mitigation	$213,000
Land Acquisition and Surveying (21 acres)	$83,000
Interest During Construction (4% for 1 years with a 1% ROI)	$918,000
TOTAL COST OF PROJECT	**$27,130,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$2,270,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$275,000
Pumping Energy Costs (6711045 kW-hr @ 0.09 $/kW-hr)	$604,000
Purchase of Water (18301 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$3,149,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	18,301
Annual Cost of Water ($ per acft)	$172
Annual Cost of Water ($ per 1,000 gallons)	$0.53
KEK	4/13/2015

Table Q-80
Wylie NE SUD - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Owner:	Wylie NE SUD				
Amount:	979 AF/Y				
CAPITAL COSTS*					
	Size	**Quantity**	**Units**	**Unit Price**	**Cost**
Transmission Facilities					
Pipeline Relocations and Appurtenances		1	LS		$1,250,000
Transmission Facilities Subtotal					**$1,250,000**
New NTMWD Take Point					
Underground Storage Tank	0.5 MG	1	LS	$750,000	$750,000
Electrical/SCADA/Disinfection Bldg. & Equip.		1	LS	$200,000	$200,000
Vertical Turbine Pumps w/ Appurtenances		2	LS	$42,500	$85,000
Fencing, Fittings, Valves, Yardpiping, Sitework, etc.		1	LS	$75,000	$75,000
Contingencies (10%)					$111,000
Engineering (8%)					$97,680
Geotechnical & Testing					$15,000
Project Inspection (2.5%)					$30,525
New NTMWD Take Point Subtotal					**$1,364,200**
Elevated Storage Tank					
Elevated Storage Tank	0.5 MG	1	LS	$1,150,000	$1,150,000
Fencing, Fittings, Valves, Yardpiping, Sitework, etc.		1	LS	$65,000	$65,000
Contingencies (10%)					$121,500
Engineering (8%)					$106,920
Geotechnical & Testing					$15,000
Project Inspection (2.5%)					$33,413
Storage Subtotal					**$1,491,800**
Interest During Construction			**(12 months)**		**$144,000**
TOTAL CAPITAL COST					**$4,250,000**
ANNUAL COSTS					
					Cost
Debt Service (5.5% for 20 years)					$356,000
Pipeline O&M (1%)					$15,000
Storage and Metering O&M (2.5%)					$57,000
TOTAL ANNUAL COST					**$428,000**
Unit Costs (During Amortization)					
Cost per acre-ft					$437
Cost per 1000 gallons					$1.34
Unit Costs (After Amortization)					
Cost per acre-ft					$74
Cost per 1000 gallons					$0.23

*Costs provided by Wylie NE SUD's Engineer

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-81 Gainesville - Direct Reuse*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 3 miles)	$288,000
Transmission Pump Station(s) & Storage Tank(s)	$841,000
TOTAL COST OF FACILITIES	**$1,129,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$381,000
Environmental & Archaeology Studies and Mitigation	$75,000
Land Acquisition and Surveying (7 acres)	$27,000
Interest During Construction (4% for 1 years with a 1% ROI)	$57,000
TOTAL COST OF PROJECT	**$1,669,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$140,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$21,000
Pumping Energy Costs (27625 kW-hr @ 0.09 $/kW-hr)	$2,000
Purchase of Water (70 acft/yr @ 0.5 $/acft)	$0
TOTAL ANNUAL COST	**$163,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	70
Annual Cost of Water ($ per acft)	$2,329
Annual Cost of Water ($ per 1,000 gallons)	$7.15
AGG	4/14/2015

Table Q-82
Gainesville - Infrastructure to Deliver to Customers

Probable Owner:	Gainesville			
Quantity:	1,825 AF/Y			

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Pipeline(s)	**Qty.**	**Units**	**Unit Cost**	**Total Cost**
36 in. Moss Lake to Gainesville				
Pipe	47,304	FT	$ 188	$8,884,000
ROW	22	AC	$3,376	$73,000
6 in. Gainesville to Valley View				
Pipe	57,490	FT	$ 20	$1,161,000
ROW	26	AC	$3,376	$89,000
6 in. Valley View to Bolivar WSC				
Pipe	42,923	FT	$ 20	$867,000
ROW	20	AC	$3,376	$67,000
8 in. Gainesville to Lindsay				
Pipe	4,003	FT	$ 31	$125,000
ROW	2	AC	$3,376	$6,000
18 in. Gainesville to Cooke Co Irrigation/Manufacturing				
Pipe	10,792	FT	$ 76	$817,000
ROW	5	AC	$3,376	$17,000
6 in. Gainesville to Lake Kiowa SUD				
Pipe	49,282	FT	$ 20	$995,000
ROW	23	AC	$3,376	$76,000
6 in. Lake Kiowa SUD to Woodbine WSC				
Pipe	22,422	FT	$ 20	$453,000
ROW	10	AC	$3,376	$35,000
8 in. Lake Kiowa SUD to Mountain Spring WSC				
Pipe	38,697	FT	$ 31	$1,211,000
ROW	18	AC	$3,376	$60,000
Engineering and Contingencies	30%			$4,354,000
Subtotal of Pipeline(s)				**$19,290,000**
Pump Station(s)				
Station 1				
Pump, bldg, & appurtenances	649	hp		$2,486,000
Storage Tank	0.5	MG		$437,000
Land Acquisition	7.0	AC	$3,376	$24,000
Engineering and Contingencies	35%			$1,023,000
Subtotal of Pump Station(s)				**$3,970,000**

Table Q-82, Continued		
PERMITTING AND MITIGATION		**$1,316,000**
CONSTRUCTION TOTAL		**$24,576,000**
Interest During Construction	(24 months)	**$1,720,000**
TOTAL CAPITAL COST		**$26,296,000**
ANNUAL COSTS		
Debt Service		$2,200,000
Operation and Maintenance Costs		
Pipeline	1%	$174,000
Pump Station	2.5%	$88,000
Estimated Annual Power Cost	$0.09/kWh	$142,000
Raw Water Cost	$2.50/1000 gal	$1,487,000
Total Annual Costs		**$4,091,000**
UNIT COSTS (During Amortization)		
Per Acre-Foot of treated water		$2,242
Per 1,000 Gallons of treated water		$6.88
UNIT COSTS (After Amortization)		
Per Acre-Foot of treated water		$1,036
Per 1,000 Gallons of treated water		$3.18
Note: Raw water costs are only applied to wholesale customers, not Gainesville.		

Table Q-83
Gainesville - Lake Texoma

Owner: Gainesville
Amount: 4,699 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pipeline	30 in.	151,700	LF	$151	$22,900,000
Right of Way Easements (ROW)		70	AC	$3,376	$235,000
Engineering and Contingencies (30%)					$6,870,000
Subtotal of Pipeline					**$30,005,000**
Pump Station(s)					
Intake Pump Station	600 HP	1	LS	$4,122,600	$4,123,000
Land Acquisition		5	AC	$3,376	$17,000
Engineering and Contingencies (35%)					$1,443,000
Subtotal of Pump Station(s)					**$5,583,000**
Water Treatment Plant					
Water Treatment Plant	8.4 MGD	1	LS	$27,927,000	$27,927,000
Land Acquisition		4	AC	$3,376	$14,200
Engineering and Contingencies (35%)					$9,774,000
Subtotal of Water Treatment Plant					**$37,715,200**
Permitting and Mitigation					**$749,500**
CONSTRUCTION TOTAL					**$74,052,700**
Interest During Construction			**(18 months)**		**$3,888,000**
TOTAL CAPITAL COST					**$77,940,700**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$6,522,000
Electricity ($0.09 kWh)					$119,000
Operation & Maintenance					$1,795,400
Total Annual Costs					**$8,436,400**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$1,795
Per 1,000 Gallons					$5.51
UNIT COSTS (After Amortization)					
Per Acre-Foot					$407
Per 1,000 Gallons					$1.25

Table Q-84
Muenster - Connect to and Purchase Water from Gainesville

Owner:	Muenster			
Amount:	280 ac-ft/yr			
CONSTRUCTION COSTS				
TRANSMISSION FACILITIES				
Pipeline(s)	**Qty.**	**Units**	**Unit Cost**	**Total Cost**
8" Water Line from Lindsay to Muenster				
Pipe	40,920	FT	$ 31	$ 1,280,800
ROW	19	AC	$3,376	$ 63,400
Engineering and Contingencies	30%			$ 384,200
Upsize to 12" Water Line from Gainesville to Lindsay				
Pipe	19,800	FT	$ 38	$ 759,700
ROW	9	AC	$3,376	$ 30,700
Subtotal				$ 790,400
Muenster Cost Share				$ 632,000
Engineering and Contingencies	30%			$ 182,000
Subtotal of Pipeline(s)				$ 2,542,400
PERMITTING AND MITIGATION				**$287,500**
CONSTRUCTION TOTAL				**$ 2,829,900**
Interest During Construction		(12 months)		$99,000
TOTAL CAPITAL COST				**$ 2,928,900**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$ 245,000
Operation and Maintenance Costs				
Pipeline	1.0%			$ 19,000
Treated Water ($2.50 per 1,000 gallons)				$163,000
Total Annual Costs				**$ 427,000**
UNIT COSTS (During Amortization)				
Per Acre-Foot				$ 2,135
Per 1,000 Gallons				$ 6.55
UNIT COSTS (After Amortization)				
Per Acre-Foot				$ 910
Per 1,000 Gallons				$ 2.79

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-85 Muenster - Develop Muenster Lake Supply	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Intake Pump Stations (0.5 MGD)	$966,000
Transmission Pipeline (6 in dia., 2 miles)	$223,000
Water Treatment Plant (1 MGD)	$4,844,000
TOTAL COST OF FACILITIES	**$6,033,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$2,100,000
Environmental & Archaeology Studies and Mitigation	$60,000
Land Acquisition and Surveying (11 acres)	$23,000
Interest During Construction (4% for 1 years with a 1% ROI)	$288,000
TOTAL COST OF PROJECT	**$8,504,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$712,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$26,000
Water Treatment Plant (2.5% of Cost of Facilities)	$484,000
Pumping Energy Costs (86282 kW-hr @ 0.09 $/kW-hr)	$8,000
Purchase of Water (280 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,230,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	280
Annual Cost of Water ($ per acft)	$4,393
Annual Cost of Water ($ per 1,000 gallons)	$13.48
AGG	4/10/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-86 Glenn Heights - Increase Delivery Infrastructure to Purchase Additional Water from DWU

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (14 in dia., 1 miles)	$231,000
Transmission Pump Station(s) & Storage Tank(s)	$1,458,000
TOTAL COST OF FACILITIES	**$1,689,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$580,000
Environmental & Archaeology Studies and Mitigation	$17,000
Land Acquisition and Surveying (2 acres)	$7,000
Interest During Construction (4% for 1 years with a 1% ROI)	$81,000
TOTAL COST OF PROJECT	**$2,374,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$199,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$34,000
Pumping Energy Costs (366897 kW-hr @ 0.09 $/kW-hr)	$33,000
Purchase of Water (1925 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$266,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,925
Annual Cost of Water ($ per acft)	$138
Annual Cost of Water ($ per 1,000 gallons)	$0.42
AGG	4/9/2015

Table Q-87
Grand Prairie - Connect to and Purchase Water from Arlington

Owner: Grand Prairie
Amount: 2,205 Ac-Ft/Yr

CAPITAL COSTS*	**Size**			**Unit Cost***	**Cost**
Pipeline					
Pipeline	20 in.	1	LS	$1,116,279	$1,116,000
Future Parallel Pipeline	20 in.	1	LS	$1,116,279	$1,116,000
Engineering (12%)					$268,000
Subtotal of Pipeline					**$2,500,000**
Pump Station					
4 MGD In-line Pump Station		1	LS	$1,674,419	$1,674,400
Engineering (12%)					$201,000
Subtotal of Pump Station(s)					**$1,875,400**
Permitting and Mitigation					**$408,100**
CONSTRUCTION TOTAL					**$4,783,500**
Interest During Construction (12 months)					**$167,000**
TOTAL CAPITAL COST					**$4,950,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$414,000
Electricity ($0.09 kWh)					$3,000
Treated Water ($2.5 per 1,000 gallons)					$1,796,000
Operation & Maintenance					$77,000
Total Annual Costs					**$2,290,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$1,039
Per 1,000 Gallons					$3.19
UNIT COSTS (After Amortization)					
Per Acre-Foot					$851
Per 1,000 Gallons					$2.61

* Unit costs for this project provided by Grand Prairie's Engineers. Unit Cost included 20% for Contingencies but not Engineering cost.

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-88 Grand Prairie - Increase Delivery Infrastructure to Purchase Additional Water from DWU

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (36 in dia., 15 miles)	$19,326,000
Transmission Pump Station(s) & Storage Tank(s)	$5,549,000
TOTAL COST OF FACILITIES	**$24,875,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$7,740,000
Environmental & Archaeology Studies and Mitigation	$382,000
Land Acquisition and Surveying (37 acres)	$148,000
Interest During Construction (4% for 1 years with a 1% ROI)	$1,161,000
TOTAL COST OF PROJECT	**$34,306,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$2,871,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$313,000
Pumping Energy Costs (3715549 kW-hr @ 0.09 $/kW-hr)	$334,000
Purchase of Water (11331 acft/yr @ 1.48 $/acft)	$17,000
TOTAL ANNUAL COST	**$3,535,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	11,331
Annual Cost of Water ($ per acft)	$312
Annual Cost of Water ($ per 1,000 gallons)	$0.96
AGG	4/13/2015

Table Q-89		
Irving - Indirect Reuse (Ellis County Off-Channel Reservoir)		
Probably Owner	DWU	
Yield	25,000	ac-ft/yr

Item*	
Off-Channel Storage/Ring Dike	$ -
Intake, Pump Station, and Channel Improvements	$ 2,672,000
Mobilization (5%)	$ 134,000
CONSTRUCTION SUBTOTAL	**$ 2,806,000**
ENGINEERING AND CONTINGENCIES (35%)	**$ 982,000**
PERMITTING AND MITIGATION (1% PLUS 20%)	**$ 32,000**
CONSTRUCTION TOTAL	**$ 3,820,000**
Off-Channel Storage/Ring Dike	$ -
EASEMENT/PROPERTY SUBTOTAL	$ -
ROW SERVICES (5%)	$ -
EASEMENT/PROPERTY TOTAL	$ -
Total Source Infrastructure Project Cost	$ 3,821,000
Transmission Infrastructure	
Transmission Pipeline	$ 6,042,000
Transmission Pump Station and Storage Tank	$ -
Mobilization (5%)	$ 302,000
	$ -
CONSTRUCTION SUBTOTAL	**$ 6,344,000**
ENGINEERING AND CONTINGENCIES (30% for PL)	**$ 1,903,000**
PERMITTING AND MITIGATION (1% PLUS 20%)	**$ 73,000**
CONSTRUCTION TOTAL	**$ 8,320,000**
ROW Easements	$ -
EASEMENT/PROPERTY SUBTOTAL	$ -
ROW SERVICES (5%)	$ -
EASEMENT/PROPERTY TOTAL	$ -
Total Transmission Infrastructure Project Cost	$ 8,321,000
Lake Joe Pool to Bachman	
Source Infrastructure	
Channel Dam	$ 4,897,000
Mobilization (5%)	$ 245,000
CONSTRUCTION SUBTOTAL	$ 5,142,000
ENGINEERING AND CONTINGENCIES (30% for reservoirs)	$ 1,542,000
PERMITTING AND MITIGATION (1% PLUS 20%)	$ 59,000
CONSTRUCTION TOTAL	$ 6,743,000

Table Q-89, Continued		
Total Source Infrastructure Project Cost		$ 6,743,000
Total Source Infrastructure Project Cost to Irving (15% of total cost)		$ 1,011,000
Transmission Infrastructure		
Transmission Pipeline		$ 65,448,000
Transmission Pump Station and Storage Tank		$ 2,404,000
Mobilization (5%)		$ 3,393,000
CONSTRUCTION SUBTOTAL		$ 71,245,000
ENGINEERING AND CONTINGENCIES (35% for PS, 30% for PLs - used 30%		$ 21,373,000
PERMITTING AND MITIGATION (1% PLUS 20%)		$ 814,000
CONSTRUCTION TOTAL		$ 93,432,000
Total Transmission Infrastructure Project Cost		$ 93,432,000
Total Transmission Infrastructure Project Cost to Irving (15% of total cost)		$ 14,015,000
Total Pump Stations		$ 4,832,000
Total Transmission Infrastucture		$ 22,336,000
Total Construction Cost		$ 27,168,000
Interest During Construction	36	**$3,306,000**
Total Cost		$30,474,000
Annual Costs		
Debt Service (5.5% for 20 years)		$2,550,040
Purchase Costs ($0.18 per 1,000 Gallons)		$1,466,330
Electricity ($0.09 per kWh)		$1,633,000
Operation & Maintenance		$294,000
Total Annual Costs		**$5,943,000**
UNIT COSTS (During Amortization)		
Per Acre-Foot		**$237.72**
Per 1,000 Gallons		**$0.73**
UNIT COSTS (After Amortization)		
Per Acre-Foot		**$135.73**
Per 1,000 Gallons		**$0.42**
*Cost provided by Irving and Dallas Water Utilities		

Table Q-90 Irving - TRA Central Reuse			
Owner:	Irving		
Amount:	28,000 ac-ft/yr		
	9,123,828 1,000 gal/yr		
CONSTRUCTION COSTS			
TOTAL CAPITAL COST (Including Interest During Construction)*		**$**	**39,960,000**
ANNUAL COSTS*			
Debt Service (5.5% for 20 years)		$	3,344,000
Operation and Maintenance Costs		$	3,470,000
Electricity		$	155,304
Purchase of water	$0.18 per 1000 gallons	$	1,642,289
Treatment Costs	$0.58 cents per 1,000 gallons	$	5,291,820
Total Annual Costs		$	13,903,413
UNIT COSTS (During Amortization)			
Per Acre-Foot		$	497
Per 1,000 Gallons		$	1.52
UNIT COSTS (After Amortization)			
Per Acre-Foot		$	377
Per 1,000 Gallons		$	1.16
* Costs provided by Irving			

Table Q-91			
Irving - Oklahoma (Lake Hugo)*			
Probable Owner	Irving		
Quantity	25,000		ac-ft/yr
Construction Costs			
Pump Station		Cost	Cost
26.8 MGD Lake Hugo Pump Station and Intake (3,050 HP)	LS	$ 14,789,683.43	$ 14,790,000
Mobilization (5%)	LS	$ 739,484	$ 739,000
			$ -
Construction Sub Total		$ 15,529,168	$ 15,529,000
Engineering and Contingencies (35%)		$ 5,435,208.7	$ 5,435,000
Permitting and Mitigation (1% PLUS 20%)		$ 177,476.2	$ 177,000
Construction Total		$ 21,141,852.5	$ 21,142,000
			$ -
Lake Hugo Pump Station Site		$ 51,055.25	$ 51,000
			$ -
Easement/Property		$ 51,055	$ 51,000
Right of Way		$ 2,552.8	$ 3,000
Easement/Property Total		$ 53,608.0	$ 54,000
			$ -
Total Source Infrastructure Project Cost		$ 21,196,000.0	**$ 21,196,000**
Transmission Infrastructure			
Pipeline		Cost	
Hugo to Paris 42-inch Pipeline and Appurtenances		$ 23,857,094.97	$ 23,857,000
Trench Safety		$ 107,216.01	$ 107,000
ROW Clearing		$ 1,223,283.67	$ 1,223,000
Paris to Lake Chapman 42-inch Pipeline and Appurtenances		$ 40,576,666.67	$ 40,577,000
Trench Safety		$ 181,756.67	$ 182,000
ROW Clearing		$ 2,079,990.69	$ 2,080,000
26.8 MGD Discharge Structure		$ 85,772.81	$ 86,000
Mobilization (5%)		$ 3,405,589	$ 3,406,000
Construction Sub Total		$ 71,517,371	$ 71,517,000
Engineering and Contingencies (30%)		$ 21,455,211.2	$ 21,455,000
Permitting and Mitigation (1% Plus 20%)		$ 817,341.4	$ 817,000
Construction Total		$ 93,789,923.1	$ 93,790,000
75' Wide Permanent Easement		$ 2,589,522.0	$ 2,590,000
25' Wide Temporary Construction Easement		$ 86,793.9	$ 87,000
Easement Property Sub Total		$ 2,676,316	$ 2,676,000
Right of Way Services		$ 133,815.8	$ 134,000
Easement/Property Sub Total		$ 2,810,131.8	$ 2,810,000
			$ -
Total Transmission Infrastructure Project Cost		$ 96,601,000.0	**$ 96,601,000**

Table Q-91, Continued		
Chapman Phase I Facilities		
Pump Station		
Item	Cost	
Existing Lake Chapman Pump Station Expansion (Addition of 55MGD Pump)	$ 4,084,419.62	$ 4,084,000
Mobilization (5%)	$ 204,221	$ 204,000
Construction Sub Total	$ 4,288,641	$ 4,289,000
Engineering and Contingencies (35%)	$ 1,501,024.2	$ 1,501,000
Permitting and Mitigation (1% Plus 20%)	$ 49,013.0	$ 49,000
Construction Total	$ 5,838,677.8	$ 5,839,000
Total Source Infrastructure Project Cost	$ 5,839,000.0	$ 5,839,000
Total Source Infrastructure Project Cost to Irving (Irving will split the cost of the Phase I Facilities 50/50 with NTMWD)	$ 1,448,000.0	**$ 1,448,000**
Transmission Infrastructure		
Item	Cost	
55 MG Chapman BPS Reservoir (6 hours of storage)	$ 11,458,839.23	$ 11,459,000
220 MGD Chapman Booster Pump Station (21,500 HP)	$ 41,409,888.27	$ 41,410,000
24 MG Merit Balancing Reservoir to Supplement Ex. 12 MG Reservoir (2.6 hours of storage)	$ 5,995,928.00	$ 5,996,000
Mobilization (5%)	$ 2,943,233	$ 2,943,000
	0	
Construction Sub Total	$ 61,807,888	$ 61,808,000
Engineering and Contingencies (35%)	$ 21,632,760.9	$ 21,633,000
Permitting and Mitigation (1% Plus 20%)	$ 706,375.9	$ 706,000
Construction Total	$ 84,147,025.0	$ 84,147,000
	0	
Chapman Booster Pump Station and Reservoir Site	$ 102,110.49	$ 102,000
	0	
Easement Property Sub Total	$ 102,110	$ 102,000
Right of Way Services	$ 5,105.5	$ 5,000
Easement/Property Sub Total	$ 107,216.0	$ 107,000
	$ -	
Total Transmission Infrastructure Project Cost	$ 84,255,000.0	$ 84,255,000
Total Source Infrastructure Project Cost to Irving (Irving will split the cost of the Phase I Facilities 50/50 with NTMWD)	$ 26,844,000.0	**$ 26,844,000**

Table Q-91, Continued
Chapman Phase II Facilities
Source Infrastructure

Item		Cost	
Upgrade of Existing Princeton Booster Pump Station		$ 20,062,669.15	$ 20,063,000
Mobilization (5%)		$ 1,003,133	$ 1,003,000
			$ -
Construction Sub Total		$ 21,065,803	$ 21,066,000
Engineering and Contingencies (30%)		$ 6,319,740.78	$ 6,320,000
Permitting and Mitigation (1% Plus 20%)		$ 240,752.0	$ 241,000
Construction Total		$ 27,626,295.4	$ 27,626,000
			$ -
Total Source Infrastructure Project Cost (Irving does not split the cost of Phase II Facilities)		$ 12,323,000.0	**$ 12,323,000**
Total Pump Station Costs			$ 34,967,000
Total Infrastructure Costs			$ 123,445,000
TOTAL CONSTRUCTION COSTS			$ 158,412,000
Interest During Construction (Months)	36		**$19,274,000**
TOTAL COSTS			**$ 177,686,000**
Annual Costs			
Debt Service (5.5% for 20 years)		$0	$14,869,000
Purchase Costs ($0.24 per 1,000 Gallons)			$1,927,000
Electricity ($0.09 per kWh)			$6,097,000
Operation & Maintenance			$2,659,000
Total Annual Costs			**$25,552,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot			**$1,022**
Per 1,000 Gallons			**$3.14**
UNIT COSTS (After Amortization)			
Per Acre-Foot			**$427**
Per 1,000 Gallons			**$1.31**

*Costs provided by Irving

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-92 Ovilla - Increase Delivery Infrastructure to Purchase Additional Water from DWU

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	Estimated Costs for Facilities
Transmission Pipeline (14 in dia., 9 miles)	$2,126,000
Transmission Pump Station(s) & Storage Tank(s)	$3,552,000
TOTAL COST OF FACILITIES	**$5,678,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,881,000
Environmental & Archaeology Studies and Mitigation	$217,000
Land Acquisition and Surveying (21 acres)	$84,000
Interest During Construction (4% for 1 years with a 1% ROI)	$276,000
TOTAL COST OF PROJECT	**$8,136,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$681,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$102,000
Pumping Energy Costs (802200 kW-hr @ 0.09 $/kW-hr)	$72,000
Purchase of Water (1494 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$855,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,494
Annual Cost of Water ($ per acft)	$572
Annual Cost of Water ($ per 1,000 gallons)	$1.76
AGG	4/9/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* ***Q-93 Sunnyvale - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD***	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (18 in dia., 23 miles)	$11,797,000
Transmission Pump Station(s) & Storage Tank(s)	$4,085,000
TOTAL COST OF FACILITIES	**$15,882,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$4,969,000
Environmental & Archaeology Studies and Mitigation	$576,000
Land Acquisition and Surveying (56 acres)	$223,000
Interest During Construction (4% for 1 years with a 1% ROI)	$758,000
TOTAL COST OF PROJECT	**$22,408,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,875,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$209,000
Pumping Energy Costs (460607 kW-hr @ 0.09 $/kW-hr)	$41,000
Purchase of Water (2279 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$2,125,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	2,279
Annual Cost of Water ($ per acft)	$932
Annual Cost of Water ($ per 1,000 gallons)	$2.86
AGG	4/9/2015

Table Q-94 Wilmer - Direct Connection to Dallas					
Owner: Wilmer					
Amount: 2,859 Ac-Ft/Yr					
CAPITAL COSTS*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Facilities Required for Connection					
36" Transmission Main					$10,467,400
South Ground Storage Tank	1.5 MG	1	LS		$1,344,300
Engineering and Contingencies					$3,611,000
Subtotal of Pipeline					**$15,422,700**
Permitting and Mitigation					**$35,800**
CONSTRUCTION TOTAL					**$15,458,500**
Interest During Construction			**(12 months)**		**$541,000**
TOTAL COST					**$15,999,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,339,000
Operation & Maintenance					$166,000
Total Annual Costs					**$1,505,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$526
Per 1,000 Gallons					$1.62
UNIT COSTS (After Amortization)					
Per Acre-Foot					$58
Per 1,000 Gallons					$0.18

*Costs provided by Freese and Nichols, Inc.

Table Q-95
Wilmer - New Connection to Dallas (via Lancaster)

Owner: Wilmer
Amount: 800 Ac-Ft/Yr

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Facilities Required for Connection					
16" Transmission Main					$1,371,500
Ground Storage Tank	1.0 MG	2	LS		$1,932,000
Engineering and Contingencies					$1,088,000
Subtotal of Pipeline					**$4,391,500**
Permitting and Mitigation					**$35,800**
CONSTRUCTION TOTAL					**$4,427,300**
Interest During Construction			**(6 months)**		**$77,000**
TOTAL CAPITAL COST					**$4,504,300**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$377,000
Operation & Maintenance					$74,000
Total Annual Costs					**$451,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$564
Per 1,000 Gallons					$1.73
UNIT COSTS (After Amortization)					
Per Acre-Foot					$93
Per 1,000 Gallons					$0.28

*Costs provided by Freese and Nichols, Inc.

Table Q-96
Corinth - New Well in Trinity Aquifer (2020)
Denton County, Trinity Aquifer

Need	561 Ac-ft/yr	
Depth to Water	320	
Well Depth	1560 ft	
Well Yield	696 gpm	1121 ac-ft (peak)
Well Size	15 in	561 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$1,007,958	$1,008,000
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$406,000
Subtotal of Well(s)				**$1,592,600**
Permitting and Mitigation				$14,000
Construction Total				**$1,606,600**
Interest During Construction		6 months		$28,000
Total Capital Cost				**$1,634,600**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$137,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$30,000
Add Chemicals etc.	182,802	$0.33 per 1000 gal		$61,200
Pumping Costs				$26,000
Total Annual Cost				**$256,200**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$457
Cost per 1000 gallons				$1.40
UNIT COSTS (After Amortization)				
Cost per ac-ft				$212
Cost per 1000 gallons				$0.65

Table Q-97
Corinth - New Well in Trinity Aquifer (2030)
Denton County, Trinity Aquifer

Need	561 Ac-ft/yr	
Depth to Water	320	
Well Depth	1560 ft	
Well Yield	696 gpm	1121 ac-ft (peak)
Well Size	15 in	561 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$1,007,958	$1,008,000
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$406,000
Subtotal of Well(s)				**$1,592,600**
Permitting and Mitigation				$14,000
Construction Total				**$1,606,600**
Interest During Construction	6 months			$28,000
Total Capital Cost				**$1,634,600**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$137,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$30,000
Add Chemicals etc.	182,802	$0.33	per 1000 gal	$61,200
Pumping Costs				$26,000
Total Annual Cost				**$256,200**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$457
Cost per 1000 gallons				$1.40
UNIT COSTS (After Amortization)				
Cost per ac-ft				$212
Cost per 1000 gallons				$0.65

Table Q-98
Corinth - Upgrade Existing Well
Denton County, Trinity Aquifer

Need	286 Ac-ft/yr	
Depth to Water	320	
Well Depth	1560 ft	
Well Yield	348 gpm	561 ac-ft (peak)
Well Size	10 in	281 ac-ft (average)
Wells Needed	2	

Construction Costs				
Well(s)	Qunatity	Unit	Unit Cost	Total Cost
Water Wells	2	EA	$855,939	$1,711,900
Connection to Transmission System	1	EA	$0	$0
Engineering and Contingencies				$599,000
Subtotal of Well(s)				**$2,310,900**
Permitting and Mitigation				$21,000
Construction Total				**$2,331,900**
Interest During Construction	6 months			$41,000
Total Capital Cost				**$2,372,900**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$199,000
O&M				
Transmission	1%			$0
Well(s)	2.5%			$51,000
Add Chemicals etc.	93,193	$0.33 per 1000 gal		$31,200
Pumping Costs				$13,000
Total Annual Cost				**$294,200**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,029
Cost per 1000 gallons				$3.16
UNIT COSTS (After Amortization)				
Cost per ac-ft				$333
Cost per 1000 gallons				$1.02

Table Q-99
Cross Timbers WSC - Infrastructure Improvements

Owner: Cross Timbers WSC
Amount: 925 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Existing pipeline upsizing*					$800,000
Complete connections within system*					$1,975,000
Pipeline to connect wells to elevated storage tank*					$725,000
Subtotal of Pipeline					**$3,500,000**
Pump Station(s) & Storage					
Storage Tank*	2 MG	1	LS	$2,000,000	$2,000,000
Subtotal of Pump Station(s) & Storage					**$2,000,000**
Permitting and Mitigation					**$66,000**
CONSTRUCTION TOTAL					**$5,566,000**
Interest During Construction		**(18 months)**			**$292,000**
TOTAL CAPITAL COST					**$5,858,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$490,000
Operation & Maintenance					$102,000
Total Annual Costs					**$592,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$640
Per 1,000 Gallons					$1.96
UNIT COSTS (After Amortization)					
Per Acre-Foot					$110
Per 1,000 Gallons					$0.34

*Costs provided by Cross Timbers WSC

Q-100

Denton County Manufacturing - New Well in Woodbine Aquifer

Denton County, Woodbine Aquifer

Need	184 Ac-ft/yr	
Depth to Water	473	
Well Depth	1450	
Well Yield	230 gpm	370 ac-ft (peak)
Well Size	8 in	185 ac-ft (average)
Wells Needed	1	

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$389,096	$389,096
Connection to Transmission System	1	EA	$178,605	$178,605
Engineering and Contingencies				$190,000
Subtotal of Well(s)				**$757,700**
Permitting and Mitigation				$7,000
Construction Total				**$764,700**
Interest During Construction	6 months			$13,000
Total Capital Cost				**$777,700**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$65,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$12,000
Add Chemicals etc.	59,957		$0.33 per 1000 gal	$20,100
Pumping Costs				$12,000
Total Annual Cost				**$111,100**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$604
Cost per 1000 gallons				$1.85
UNIT COSTS (After Amortization)				
Cost per ac-ft				$251
Cost per 1000 gallons				$0.77

Table Q-101
Denton County Other - New Well in Woodbine Aquifer
Denton County, Woodbine Aquifer

Need	817 ac-ft/yr	
Water Depth	450 ft	
Well Depth	1483 ft	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	80.5 ac-ft (average)
Wells Needed	13	

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	13	EA	$ 476,915	$ 6,200,000
Connection to Distribution System	13	EA	$ 178,605	$ 2,321,860
Engineering and Contingencies				$ 2,867,000
Subtotal of Well(s)				**$ 11,388,860**
Permitting and Mitigation				**$ 102,000**
Construction Total				**$ 11,490,860**
Interest During Construction	6	months		**$ 201,000**
TOTAL CAPITAL COST				**$ 11,691,860**
ANNUAL COSTS				
Debt Service - Total Capital				$978,000
O&M				
Transmission	1%			$ 27,862
Well(s)	2.5%			$ 186,000
Add Chemicals, Etc.	325,851	1000 gal	$ 0.33	$ 107,500
Pumping Costs				$ 62,100
Total Annual Cost				**$ 1,361,462**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$ 1,361
Cost per 1000 gallons				$ 4.18
UNIT COSTS (After Amortization)				
Cost per ac-ft				$ 383
Cost per 1000 gallons				$ 1.18

Table Q-102
Denton County Other - New Well in Trinity Aquifer
Denton County, Trinity Aquifer

Need	504 ac-ft/yr		
Water Depth	500 ft		
Well Depth	550 ft		
Well Yield	100 gpm		161 ac-ft (peak)
Well Size	6 in		80.5 ac-ft (average)
Wells Needed	5		

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	5	EA	$ 228,084	$ 1,140,000
Connection to Distribution System	5	EA	$ 178,605	$ 893,023
Engineering and Contingencies				$ 667,000
Subtotal of Well(s)				**$ 2,700,023**
Permitting and Mitigation				**$ 24,000**
Construction Total				**$ 2,724,023**
Interest During Construction	6	months		**$ 48,000**
TOTAL CAPITAL COST				**$ 2,772,023**
ANNUAL COSTS				
Debt Service - Total Capital				$232,000.00
O&M				
Transmission	1%			$ 10,716
Well(s)	2.5%			$ 34,200
Add Chemicals, Etc.	108,834	1000 gal	$ 0.33	$ 35,900
Pumping Costs				$ 22,800
Total Annual Cost				**$ 335,616**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$ 1,005
Cost per 1000 gallons				$ 3.08
UNIT COSTS (After Amortization)				
Cost per ac-ft				$ 310
Cost per 1000 gallons				$ 0.95

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-103 Hackberry - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (6 in dia., 2 miles)	$218,000
Transmission Pump Station(s) & Storage Tank(s)	$970,000
TOTAL COST OF FACILITIES	**$1,188,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$405,000
Environmental & Archaeology Studies and Mitigation	$57,000
Land Acquisition and Surveying (6 acres)	$22,000
Interest During Construction (4% for 1 years with a 1% ROI)	$59,000
TOTAL COST OF PROJECT	**$1,731,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$145,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$24,000
Pumping Energy Costs (62539 kW-hr @ 0.09 $/kW-hr)	$6,000
Purchase of Water (348 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$175,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	348
Annual Cost of Water ($ per acft)	$503
Annual Cost of Water ($ per 1,000 gallons)	$1.54
AGG	4/9/2015

Table Q-104
Justin - New Well in Trinity Aquifer
Denton County, Trinity Aquifer

Need	244 Ac-ft/yr	
Depth to Water	230	
Well Depth	1017 ft	
Well Yield	300 gpm	483 ac-ft (peak)
Well Size	10 in	242 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$591,627	$1,183,300
Connection to Transmission System	2	EA	$178,605	$357,200
Engineering and Contingencies (30%)				$521,000
Subtotal of Well(s)				**$2,061,500**
Permitting and Mitigation				$18,000
Construction Total				**$2,079,500**
Interest During Construction		6 months		$36,000
Total Capital Cost				**$2,115,500**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$177,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$35,000
Add Chemicals etc.	79,508	$0.33 per 1000 gal		$26,600
Pumping Costs				$8,000
Total Annual Cost				**$250,600**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,027
Cost per 1000 gallons				$3.15
UNIT COSTS (After Amortization)				
Cost per ac-ft				$302
Cost per 1000 gallons				$0.93

Table Q-105
Krum - New Well in Trinity Aquifer
Denton County, Trinity Aquifer

Need	1025 Ac-ft/yr	
Depth to Water	230	
Well Depth	858 ft	
Well Yield	1300 gpm	2093 ac-ft (peak)
Well Size	15 in	1047 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$934,560	$934,600
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$381,000
Subtotal of Well(s)				**$1,494,200**
Permitting and Mitigation				$13,000
Construction Total				**$1,507,200**
Interest During Construction	6 months			$26,000
Total Capital Cost				**$1,533,200**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$128,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$28,000
Add Chemicals etc.	333,997	$0.33 per 1000 gal		$111,900
Pumping Costs				$37,000
Total Annual Cost				**$306,900**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$299
Cost per 1000 gallons				$0.92
UNIT COSTS (After Amortization)				
Cost per ac-ft				$175
Cost per 1000 gallons				$0.54

Table Q-106
Pilot Point - New Well in Trinity Aquifer
Denton County, Trinity Aquifer

Need	269 ac-ft/yr	
Water Depth	444 ft	
Well Depth	521 ft	
Well Yield	340 gpm	547 ac-ft (peak)
Well Size	10 in	273.5 ac-ft (average)
Wells Needed	1	

	Quantity	Unit	Unit Cost		Total Cost
CONSTRUCTION COSTS					
Well(s)	**Quantity**	**Unit**	**Unit Cost**		**Total Cost**
Water Wells	1	EA	$452,474	$	452,000
Connection to Distribution System	1	EA	$178,605	$	178,605
Engineering and Contingencies				$	212,000
Subtotal of Well(s)				**$**	**842,605**
Permitting and Mitigation				$	8,000
Construction Total				**$**	**850,605**
Interest During Construction	6 months			$	15,000
Total Capital Cost				**$**	**865,605**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$72,000.00
O&M					
Transmission	1%			$	2,143
Well(s)	2.5%			$	13,600
Add Chemicals, Etc.	87,654		$0.33 per 1000 gal	$	29,400
Pumping Costs				$	16,500
Total Annual Cost				**$**	**133,643**
UNIT COSTS (During Amortization)					
Cost per ac-ft				$	497
Cost per 1000 gallons				$	1.52
UNIT COSTS (After Amortization)					
Cost per ac-ft				$	229
Cost per 1000 gallons				$	0.70

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-107 Ellis County SEP - Purchase Water from Waxahachie	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (24 in dia., 10 miles)	$7,624,000
Transmission Pump Station(s) & Storage Tank(s)	$3,143,000
TOTAL COST OF FACILITIES	**$10,767,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$3,387,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$97,000
Interest During Construction (4% for 1 years with a 1% ROI)	$508,000
TOTAL COST OF PROJECT	**$15,009,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,256,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$146,000
Pumping Energy Costs (1343504 kW-hr @ 0.09 $/kW-hr)	$121,000
Purchase of Water (4484 acft/yr @ 3.45 $/acft)	$15,000
TOTAL ANNUAL COST	**$1,538,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	4,484
Annual Cost of Water ($ per acft)	$343
Annual Cost of Water ($ per 1,000 gallons)	$1.05
KNR	4/9/2015

Table Q-108
Ennis Indirect Reuse

Owner: Ennis
Indirect Reuse Amount: 3,696 Ac-Ft/Yr

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
30" Reclaimed Water Line						
Pipe	32,855	LF	$	151	$	4,960,000
ROW	15	AC	$	3,636	$	55,000
30" Raw Water Line						
Pipe	4,752	LF	$	151	$	717,000
ROW	2	AC	$	3,636	$	8,000
Engineering and Contingencies	30%				$	1,703,000
Subtotal of Pipeline(s)					**$**	**7,443,000**
Pump Station(s)						
Station 1						
Pump, building, & appurtenances	210	HP			$	1,683,000
Station 2						
Pump, building, & appurtenances	180	HP			$	1,958,000
Land Acquisition	10	AC	$	3,636	$	36,000
Engineering and Contingencies	35%				$	1,274,000
Subtotal of Pump Station(s)					**$**	**4,951,000**
WATER TREATMENT FACILITIES						
Wastewater Treatment Plant Expansion						
Advanced Wastewater Treatment	4.00	MGD			$	10,702,500
Land Acquisition	2.00	AC	$	3,636	$	7,300
Engineering and Contingencies	35%				$	3,746,000
Subtotal of Wastewater Treatment Plant					**$**	**14,455,800**
Water Treatment Plant Expansion						
Water Treatment Plant Expansion	6.00	MGD			$	7,697,100
Engineering and Contingencies	35%				$	2,694,000
Subtotal of Water Treatment Plant					**$**	**10,391,100**

Table Q-108, Continued			
PERMITTING AND MITIGATION			**$248,000**
CONSTRUCTION TOTAL		**$**	**37,488,900**
Interest During Construction	(18 months)	**$**	**1,968,000**
TOTAL CAPITAL COST		**$**	**39,456,900**
ANNUAL COSTS			
Debt Service		$	3,302,000
Operation and Maintenance Costs			
Pipeline	1%	$	68,000
Pump Station	2.50%	$	110,000
RO Operation		$	973,000
WTP Operation		$	623,000
Estimated Annual Power Cost	$0.09/kWh	$	3,000
Total Annual Costs		**$**	**5,079,000**
UNIT COSTS (During Amortization)			
Per Acre-Foot		$	1,374
Per 1,000 Gallons		$	4.22
UNIT COSTS (After Amortization)			
Per Acre-Foot		$	481
Per 1,000 Gallons		$	1.48
Assume no raw water cost.			

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-109 Ferris - Increase Delivery Infrastructure to Purchase Additional Water from Rockett SUD

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (12 in dia., 2 miles)	$357,000
Transmission Pump Station(s) & Storage Tank(s)	$1,451,000
TOTAL COST OF FACILITIES	**$1,808,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$615,000
Environmental & Archaeology Studies and Mitigation	$48,000
Land Acquisition and Surveying (5 acres)	$19,000
Interest During Construction (4% for 1 years with a 1% ROI)	$88,000
TOTAL COST OF PROJECT	**$2,578,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$216,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$36,000
Pumping Energy Costs (316117 kW-hr @ 0.09 $/kW-hr)	$28,000
Purchase of Water (1395 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$280,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,395
Annual Cost of Water ($ per acft)	$201
Annual Cost of Water ($ per 1,000 gallons)	$0.62
AGG	4/9/2015

Table Q-110
Midlothian - Direct Potable Reuse (Mountain Creek WWTP Effluent)

Owner: Midlothian
Amount: 5,605 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Water Treatment Plant					
Land Acquistion		5	AC	$3,636	$18,200
Reuse Water Treatment Plant	10 MGD	1	LS	$37,143,700	$37,143,700
Engineering and Contingencies (35%)					$13,000,000
Subtotal of WTP					**$50,161,900**
CONSTRUCTION TOTAL					**$50,161,900**
Permitting and Mitigation					$500,000
Interest During Construction			**(12 months)**		**$1,755,700**
TOTAL CAPITAL COST					**$52,417,600**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$4,386,000
Operation & Maintenance					$5,306,800
Total Annual Costs					**$9,692,800**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$1,729
Cost per 1000 gallons					$5.31
UNIT COSTS (After Amortization)					
Cost per ac-ft					$947
Cost per 1000 gallons					$2.91

Table Q-111
Midlothian - Purchase Duncanville's Joe Pool Yield

Owner: Midlothian
Amount: 1,121 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Intake					
Upsize Joe Pool Intake Structure		1	LS	$47,400	$47,400
Engineering and Contingencies (35%)					$17,000
Subtotal of Pump Station(s)					**$64,400**
Permitting and Mitigation					**$800**
CONSTRUCTION TOTAL					**$65,200**
Interest During Construction			**(6 months)**		**$1,000**
TOTAL CAPITAL COST					**$66,200**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$6,000
Raw Water Cost ($1.09 per 1000 gallons)					$398,000
Operation & Maintenance					$1,000
Total Annual Costs					**$405,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$361.28
Cost per 1000 gallons					$1.11
UNIT COSTS (After Amortization)					
Cost per ac-ft					$356
Cost per 1000 gallons					$1.09

Table Q-112
Mountain Peak SUD - New Well in Woodbine Aquifer
Ellis County, Woodbine Aquifer

Need	7 ac-ft/yr	
Water Depth	1123 ft	
Well Depth	2360 ft	
Well Yield	325 gpm	523 ac-ft (peak)
Well Size	8 in	261.5 ac-ft (average)
Wells Needed	1	

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)				
Water Wells	1	EA	$ 1,136,252	$ 1,136,000
Connection to Transmission System	1	EA	$ 178,605	$ 178,605
Engineering and Contingencies				$ 451,000
Subtotal of Well(s)				**$ 1,765,605**
Permitting and Mitigation				$ 16,000
Construction Total				**$ 1,781,605**
Interest During Construction	6	months		$ 31,000
Total Capital Cost				**$ 1,812,605**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$152,000
O&M				
Transmission	1%			$ 2,100
Well(s)	2.5%			$ 34,100
Add Chemicals, Etc.	2,281	$0.33	per 1000 gal	$ 800
Pumping Costs				$ 1,000
Total Annual Cost				**$ 190,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$ 727
Cost per 1000 gallons				$ 2.23
UNIT COSTS (After Amortization)				
Cost per ac-ft				$ 145
Cost per 1000 gallons				$ 0.45

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-113 Palmer - Increase Delivery Infrastructure to Purchase Additional Water from Rockett SUD

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (10 in dia., 12 miles)	$1,931,000
Transmission Pump Station(s) & Storage Tank(s)	$2,583,000
TOTAL COST OF FACILITIES	**$4,514,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,484,000
Environmental & Archaeology Studies and Mitigation	$292,000
Land Acquisition and Surveying (28 acres)	$113,000
Interest During Construction (4% for 1 years with a 1% ROI)	$225,000
TOTAL COST OF PROJECT	**$6,628,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$555,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$77,000
Pumping Energy Costs (229104 kW-hr @ 0.09 $/kW-hr)	$21,000
Purchase of Water (940 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$653,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	940
Annual Cost of Water ($ per acft)	$695
Annual Cost of Water ($ per 1,000 gallons)	$2.13
AGG	4/9/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-114 Rice WSC - Increase Delivery Infrastructure to Purchase Additional Water from Corsicana

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (12 in dia., 12 miles)	$2,270,000
Transmission Pump Station(s) & Storage Tank(s)	$2,499,000
TOTAL COST OF FACILITIES	**$4,769,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,555,000
Environmental & Archaeology Studies and Mitigation	$304,000
Land Acquisition and Surveying (29 acres)	$118,000
Interest During Construction (4% for 1 years with a 1% ROI)	$237,000
TOTAL COST OF PROJECT	**$6,983,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$584,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$78,000
Pumping Energy Costs (431787 kW-hr @ 0.09 $/kW-hr)	$39,000
Purchase of Water (1038 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$701,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,038
Annual Cost of Water ($ per acft)	$675
Annual Cost of Water ($ per 1,000 gallons)	$2.07
AGG	4/10/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-115 Rockett SUD - Increase Delivery Infrastructure to Purchase Additional Water from Midlothian*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (12 in dia., 17 miles)	$3,171,000
Transmission Pump Station(s) & Storage Tank(s)	$5,007,000
TOTAL COST OF FACILITIES	**$8,178,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$2,704,000
Environmental & Archaeology Studies and Mitigation	$425,000
Land Acquisition and Surveying (41 acres)	$165,000
Interest During Construction (4% for 1 years with a 1% ROI)	$402,000
TOTAL COST OF PROJECT	**$11,874,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$994,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$145,000
Pumping Energy Costs (526321 kW-hr @ 0.09 $/kW-hr)	$47,000
Purchase of Water (1394 acft/yr @ 2.5 $/acft)	$3,000
TOTAL ANNUAL COST	**$1,189,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,394
Annual Cost of Water ($ per acft)	$853
Annual Cost of Water ($ per 1,000 gallons)	$2.62
AGG	4/13/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-116 Rockett SUD - Direct Connection to DWU*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (24 in dia., 31 miles)	$16,911,000
Transmission Pump Station(s) & Storage Tank(s)	$6,371,000
TOTAL COST OF FACILITIES	**$23,282,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$7,303,000
Environmental & Archaeology Studies and Mitigation	$777,000
Land Acquisition and Surveying (75 acres)	$302,000
Interest During Construction (4% for 1 years with a 1% ROI)	$1,109,000
TOTAL COST OF PROJECT	**$32,773,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$2,742,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$307,000
Pumping Energy Costs (232105 kW-hr @ 0.09 $/kW-hr)	$21,000
Purchase of Water (5605 acft/yr @ 1.48 $/acft)	$8,000
TOTAL ANNUAL COST	**$3,078,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	5,605
Annual Cost of Water ($ per acft)	$549
Annual Cost of Water ($ per 1,000 gallons)	$1.69
AGG	4/13/2015

Table Q-117
Sardis Lone-Elm - Connect to and Purchase Water from Midlothian

Owner:	Sardis-Lone Elm WSC				
Amount:	1,121 Ac-Ft/Yr				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline(s)*	**Qty.**	**Units**	**Unit Cost**		**Total Cost**
12" Pipeline	3,300	LF	$38	$	126,600
Right-of-Way Easements (ROW)	2	AC	$3,636	$	6,000
Metering and Control Facilities	1	LS	$50,000	$	50,000
Engineering and Contingencies	30%			$	53,000
Subtotal of Pipeline(s)				**$**	**235,600**
PERMITTING AND MITIGATION				**$**	**15,600**
CONSTRUCTION TOTAL				**$**	**251,200**
Interest During Construction		(6 months)		**$**	**4,000**
TOTAL CAPITAL COST				**$**	**255,200**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)				$	21,000
Operation & Maintenance				$	2,000
Total Annual Costs				**$**	**23,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot				$	21
Per 1,000 Gallons				$	0.06
UNIT COSTS (After Amortization)					
Per Acre-Foot				$	2
Per 1,000 Gallons				$	0.01

*Cost provided by Sardis-Lone Elm's Engineer

Table Q-118
Sardis-Lone Elm WSC - Increase Delivery Infrastructure to Purchase Additional Water from Rockett SUD

Owner:	Sardis-Lone Elm WSC				
Amount:	1,342 Ac-Ft/Yr				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline(s)*	**Qty.**	**Units**	**Unit Cost**		**Total Cost**
Pipeline				$	1,500,000
Engineering and Contingencies	30%			$	450,000
Subtotal of Pipeline(s)				**$**	**1,950,000**
PERMITTING AND MITIGATION				**$**	**8,000**
CONSTRUCTION TOTAL				**$**	**1,958,000**
Interest During Construction		(6 months)		**$**	**34,000**
TOTAL CAPITAL COST				**$**	**1,992,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)				$	167,000
Operation & Maintenance				$	18,000
Total Annual Costs				**$**	**185,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot				$	138
Per 1,000 Gallons				$	0.42
UNIT COSTS (After Amortization)					
Per Acre-Foot				$	13
Per 1,000 Gallons				$	0.04

*Cost provided by Sardis-Lone Elm's Engineer

Table Q-119
Waxahachie - 27" Raw water line from IPL to Howard Road Water Treatment Plant

Owner:	Waxahachie					
Amount:	5,255 Ac-Ft/Yr					
CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
27" Pipeline	17,240	LF	$	132	$	2,276,000
Right-of-Way Easements (ROW)	8	AC	$	3,636	$	28,800
Engineering and Contingencies	30%				$	683,000
Subtotal of Pipeline(s)					**$**	**2,987,800**
PERMITTING AND MITIGATION					**$**	**81,600**
CONSTRUCTION TOTAL					**$**	**3,069,400**
Interest During Construction		(12 months)			**$**	**107,000**
TOTAL CAPITAL COST					**$**	**3,176,400**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	266,000
Raw Water ($0.97 per 1,000 gallons)					$	1,661,000
Operation & Maintenance					$	27,000
Total Annual Costs					**$**	**1,954,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot					$	372
Per 1,000 Gallons					$	1.14
UNIT COSTS (After Amortization)						
Per Acre-Foot					$	321
Per 1,000 Gallons					$	0.99

Table Q-120
Waxahachie - 36" Raw water line from IPL to Lake Waxahachie

Owner: Waxahachie
Amount: 10,930 Ac-Ft/Yr

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
36" Pipeline	3,720	LF	$	188	$	698,600
Right-of-Way Easements (ROW)	2	AC	$	3,636	$	6,200
Engineering and Contingencies	30%				$	210,000
Subtotal of Pipeline(s)					**$**	**914,800**
Discharge Structure	1	LS	$	78,240	$	78,000
Engineering and Contingencies	35%				$	27,000
Subtotal of Discharge Structure					**$**	**105,000**
PERMITTING AND MITIGATION					**$**	**17,600**
CONSTRUCTION TOTAL					**$**	**1,037,400**
Interest During Construction		(12 months)			**$**	**36,000**
TOTAL CAPITAL COST					**$**	**1,073,400**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	90,000
Raw Water ($0.97 per 1,000 gallons)					$	3,455,000
Operation & Maintenance					$	10,000
Total Annual Costs					**$**	**3,555,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot					$	325
Per 1,000 Gallons					$	1.00
UNIT COSTS (After Amortization)						
Per Acre-Foot					$	317
Per 1,000 Gallons					$	0.97

Table Q-121

Waxahachie - 36" Raw water line from Lake Waxahachie to Howard Rd WTP

Owner: Waxahachie

Amount: 10,930 Ac-Ft/Yr

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
36" Pipeline	15,210	LF	$	188	$	2,856,600
Right-of-Way Easements (ROW)	7	AC	$	3,636	$	25,400
Engineering and Contingencies	30%				$	857,000
Subtotal of Pipeline(s)					**$**	**3,739,000**
Pump Station(s)						
Pump Station Expansion	370	HP	$	1,088,000	$	1,088,000
Land Acquisition	0	AC	$	3,636.00	$	-
Engineering and Contingencies	35%				$	381,000
Subtotal of Pump Station(s)					**$**	**1,469,000**
PERMITTING AND MITIGATION					**$**	**72,000**
CONSTRUCTION TOTAL					**$**	**5,280,000**
Interest During Construction		(12 months)			**$**	**185,000**
TOTAL CAPITAL COST					**$**	**5,465,000**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	457,000
Operation & Maintenance					$	67,000
Total Annual Costs					**$**	**524,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot					$	48
Per 1,000 Gallons					$	0.15
UNIT COSTS (After Amortization)						
Per Acre-Foot					$	6
Per 1,000 Gallons					$	0.02

Table Q-122
Waxahachie - 48" TRWD Parallel Supply Line to Sokoll WTP

Owner: Waxahachie
Amount: 22,700 Ac-Ft/Yr

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**	**Unit Cost**			**Total Cost**
48" Pipeline	9,760	LF	$	263	$	2,567,200
Right-of-Way Easements (ROW)	2	AC	$	3,636	$	8,100
Engineering and Contingencies	30%				$	770,000
Subtotal of Pipeline(s)					**$**	**3,345,300**
PERMITTING AND MITIGATION					**$**	**46,200**
CONSTRUCTION TOTAL					**$**	**3,391,500**
Interest During Construction		(12 months)			**$**	**119,000**
TOTAL CAPITAL COST					**$**	**3,510,500**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	294,000
Raw Water ($0.97 per 1,000 gallons)					$	7,175,000
Operation & Maintenance					$	31,000
Total Annual Costs					**$**	**7,500,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot					$	330
Per 1,000 Gallons					$	1.01
UNIT COSTS (After Amortization)						
Per Acre-Foot					$	317
Per 1,000 Gallons					$	0.97

Table Q-123
Waxahachie - Dredge Lake Waxahachie

Owner: Waxahachie
Amount: 705 Ac-Ft/Yr

CAPITAL COSTS	Quantity	Unit	Unit Price	Cost
Dredging and Disposal				
Dredging and Disposal	3,660,653	CY	$6.25	$22,883,300
Engineering and Contingencies (35%)				$8,009,000
Subtotal of Dredging and Disposal				**$30,892,300**
CONSTRUCTION TOTAL				**$30,892,300**
Interest During Construction		**(12 months)**		**$1,081,200**
TOTAL CAPITAL COST				**$31,973,500**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$2,676,000
Total Annual Costs				**$2,676,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$3,796
Cost per 1000 gallons				$11.65

Table Q-124

Waxahachie - Increase delivery infrastructure to Rockett SUD (30" Raw water Line)

Owner:	Waxahachie				
Amount:	6,726	Ac-Ft/Yr			
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pipeline(s)	**Qty.**	**Units**	**Unit Cost**		**Total Cost**
30" Pipeline	56,950	LF	$ 151	$	8,596,800
Right-of-Way Easements (ROW)	13	AC	$ 3,636	$	47,500
Engineering and Contingencies	30%			$	2,579,000
Subtotal of Pipeline(s)				**$**	**11,223,300**
PERMITTING AND MITIGATION				**$**	**269,600**
CONSTRUCTION TOTAL				**$**	**11,492,900**
Interest During Construction		(12 months)		**$**	**402,000**
TOTAL CAPITAL COST				**$**	**11,894,900**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)				$	995,000
Operation & Maintenance				$	103,000
Total Annual Costs				**$**	**1,098,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot				$	163
Per 1,000 Gallons				$	0.50
UNIT COSTS (After Amortization)					
Per Acre-Foot				$	15
Per 1,000 Gallons				$	0.05

Table Q-125
Waxahachie - Phase I Delivery Infrastructure to Customers in South Ellis County

Owner:	Waxahachie				
Amount:	2,803 Ac-Ft/Yr				
CONSTRUCTION COSTS					
TRANSMISSION FACILITIES*					
Pipeline(s)	**Qty.**	**Units**	**Unit Cost**		**Total Cost**
16" Pipeline	3,000	LF		$	580,000
Right-of-Way Easements (ROW)	3,000	LF		$	60,000
Engineering and Contingencies	30%			$	174,000
Subtotal of Pipeline(s)				**$**	**814,000**
12" Pipeline	16,500	LF		$	600,000
Right-of-Way Easements (ROW)	16,500	LF		$	60,000
Engineering and Contingencies	30%			$	180,000
Subtotal of Pipeline(s)				**$**	**840,000**
8" Pipeline	50,410	LF		$	2,720,500
Right-of-Way Easements (ROW)	50,410	LF		$	1,008,200
Engineering and Contingencies	30%			$	816,000
Subtotal of Pipeline(s)				**$**	**4,544,700**
Pump Station(s)					
Booster Pump Station					$4,000,000
Ground Storage Tanks					$1,700,000
Engineering and Contingencies	35%				$1,995,000
Subtotal of Pump Station(s)					**$7,695,000**
PERMITTING AND MITIGATION				**$**	**331,000**
CONSTRUCTION TOTAL				**$**	**14,224,700**
Interest During Construction		(24 months)		**$**	**996,000**
TOTAL CAPITAL COST				**$**	**15,220,700**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)				$	1,274,000
Electricity ($0.09 kWh)				$	71,000
Operation & Maintenance				$	218,000
Total Annual Costs				**$**	**1,563,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot				$	558
Per 1,000 Gallons				$	1.71
UNIT COSTS (After Amortization)					
Per Acre-Foot				$	78
Per 1,000 Gallons				$	0.24

*Capital Cost provided by Waxahachie's Engineer

Table Q-126
Waxahachie - Phase II Delivery Infrastructure to Customers in South Ellis County

Owner: Waxahachie
Amount: 3,924 Ac-Ft/Yr

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES*					
Pipeline(s)	**Qty.**	**Units**	**Unit Cost**		**Total Cost**
27" Pipeline	3,000	LF		$	609,000
Right-of-Way Easements (ROW)	0	LF		$	-
Engineering and Contingencies	30%			$	183,000
Subtotal of Pipeline(s)				**$**	**792,000**
20" Pipeline	16,500	LF		$	3,250,500
Right-of-Way Easements (ROW)	0	LF		$	-
Engineering and Contingencies	30%			$	975,000
Subtotal of Pipeline(s)				**$**	**4,225,500**
18" Pipeline	24,000	LF		$	4,680,000
Right-of-Way Easements (ROW)	0	LF		$	-
Engineering and Contingencies	30%			$	1,404,000
Subtotal of Pipeline(s)				**$**	**6,084,000**
16" Pipeline	26,410	LF		$	5,105,933
Right-of-Way Easements (ROW)	0	LF		$	-
Engineering and Contingencies	30%			$	1,532,000
Subtotal of Pipeline(s)				**$**	**6,637,933**
Pump Station(s)					
Booster Pump Station				$	2,000,000
Ground Storage Tanks				$	850,000
Engineering and Contingencies	35%			$	998,000
Subtotal of Pump Station(s)					**$3,848,000**
PERMITTING AND MITIGATION				**$**	**331,000**
CONSTRUCTION TOTAL				**$**	**21,918,433**
Interest During Construction		(24 months)		**$**	**1,534,000**
TOTAL CAPITAL COST				**$**	**23,452,433**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)				$	1,962,000
Electricity ($0.09 kWh)				$	31,000
Operation & Maintenance				$	250,000
Total Annual Costs				**$**	**2,243,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot				$	572
Per 1,000 Gallons				$	1.75
UNIT COSTS (After Amortization)					
Per Acre-Foot				$	64
Per 1,000 Gallons				$	0.20

*Capital Cost provided by Waxahachie's Engineer

Table Q-127
Waxahachie - Raw Water Intake Improvements at Lake Bardwell

Owner: Waxahachie
Amount: 16,815 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pump Station(s)					
Pump Station Upgrades	1500 HP	1	LS	$3,762,200	$3,762,200
Engineering and Contingencies (35%)					$1,317,000
Subtotal of Pump Station(s)					**$5,079,200**
CONSTRUCTION TOTAL					**$5,079,200**
Interest During Construction			**(6 months)**		**$89,000**
TOTAL COST					**$5,168,200**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$432,000
Electricity ($0.09 kWh)					$339,000
Operation & Maintenance					$113,000
Total Annual Costs					**$884,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$52.57
Cost per 1000 gallons					$0.16
UNIT COSTS (After Amortization)					
Cost per ac-ft					$27
Cost per 1000 gallons					$0.08

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-128 Fannin County SEP - Connect to and Purchase Water From Lake Texoma*	
Cost based on ENR CCI 9552 for 41518 and *a PPI of 187 for 41518*	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (36 in dia., 15 miles)	$13,515,000
Transmission Pump Station(s) & Storage Tank(s)	$4,518,000
TOTAL COST OF FACILITIES	**$18,033,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$5,636,000
Environmental & Archaeology Studies and Mitigation	$375,000
Land Acquisition and Surveying (36 acres)	$135,000
Interest During Construction (4% for 1 years with a 1% ROI)	$847,000
TOTAL COST OF PROJECT	**$25,026,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$2,094,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$233,000
Pumping Energy Costs (2587985 kW-hr @ 0.09 $/kW-hr)	$233,000
Purchase of Water (9000 acft/yr @ 1.09 $/acft)	$10,000
TOTAL ANNUAL COST	**$2,570,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	9,000
Annual Cost of Water ($ per acft)	$286
Annual Cost of Water ($ per 1,000 gallons)	$0.88
AGG	4/13/2015

Table Q-129
Ladonia - Connect to and Purchase Water from UTRWD (Lake Ralph Hall)

Owner: Ladonia/UTRWD
Amount: 134 ac-ft/yr

CONSTRUCTION COSTS						
TRANSMISSION FACILITIES						
Pipeline(s)	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
12" Water Line						
Pipe	4,265	LF	$	38	$	164,000
ROW	2	AC	$	3,376	$	7,000
Engineering and Contingencies	30%				$	49,000
Subtotal of Pipeline(s)					**$**	**220,000**
Pump Station(s)						
Station 1						
Pump, building, & appurtenances	10	HP			$	717,000
Storage Tank	0.5	MG			$	418,000
Land Acquisition	7	AC	$	3,376	$	24,000
Engineering and Contingencies	35%				$	397,000
Subtotal of Pump Station(s)					**$**	**1,556,000**
WATER TREATMENT FACILITIES						
Water Treatment Plant	1.00	MGD			$	4,844,000
Plant Expansion	0.35	MGD			$	2,337,700
Land Acquisition	1.5	AC	$	3,376	$	5,000
Engineering and Contingencies	35%				$	2,514,000
Subtotal of Water Treatment Plant					**$**	**9,700,700**
PERMITTING AND MITIGATION					**$**	**52,900**
CONSTRUCTION TOTAL					**$**	**11,529,600**
Interest During Construction		(18 months)			**$**	**605,000**
TOTAL CAPITAL COST					**$**	**12,134,600**

Table Q-129, Continued			
ANNUAL COSTS			
Debt Service (5.5% for 20 years)		$	1,015,000
Operation and Maintenance Costs			
Pipeline	1%	$	2,000
Pump Station	2.50%	$	35,000
Estimated Annual Power Cost		$	2,600
WTP Operation		$	718,000
Raw Water Cost		$	130,680
Total Annual Costs		**$**	**1,903,280**
UNIT COSTS (During Amortization)			
Per Acre-Foot		$	14,204
Per 1,000 Gallons		$	43.59
UNIT COSTS (After Amortization)			
Per Acre-Foot		$	6,629
Per 1,000 Gallons		$	20.34

Table Q-130
Southwest Fannin Co SUD - New Well in Woodbine Aquifer
Fannin County, Woodbine Aquifer

Need	100 Ac-ft/yr	
Depth to Water	384	
Well Depth	903	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	81 ac-ft (average)
Wells Needed	2	

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$317,307	$634,614
Connection to Transmission System	2	EA	$178,605	$357,209
Transmission Pump Station and Storage Tank	1	LS	$837,000	$837,000
Engineering and Contingencies				$458,000
Subtotal of Well(s)				**$2,286,823**
Permitting and Mitigation				$22,000
Construction Total				**$2,308,823**
Interest During Construction	6 months			$40,000
Total Capital Cost				**$2,348,823**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$197,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$19,000
Transmission Pump Station and Storage Tank				$18,000
Add Chemicals etc.	32,585	$0.33 per 1000 gal		$10,900
Pumping Costs				$7,000
Total Annual Cost				**$255,900**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$2,559
Cost per 1000 gallons				$7.85
UNIT COSTS (After Amortization)				
Cost per ac-ft				$589
Cost per 1000 gallons				$1.81

Table Q-131
Trenton - New Wells in Woodbine Aquifer
Fannin County, Woodbine Aquifer

Need	25 Ac-ft/yr	
Depth to Water	536	
Well Depth	1539	
Well Yield	121 gpm	194 ac-ft (peak)
Well Size	8 in	97 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$529,180	$529,180
Connection to Transmission System	1	EA	$178,605	$178,605
Engineering and Contingencies				$239,000
Subtotal of Well(s)				**$946,785**
Permitting and Mitigation				$8,000
Construction Total				**$954,785**
Interest During Construction	6 months			$17,000
Total Capital Cost				**$971,785**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$81,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$16,000
Add Chemicals etc.	8,146	$0.33 per 1000 gal		$2,700
Pumping Costs				$2,000
Total Annual Cost				**$103,700**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$4,148
Cost per 1000 gallons				$12.73
UNIT COSTS (After Amortization)				
Cost per ac-ft				$908
Cost per 1000 gallons				$2.79

Table Q-132
Fairfield - Connect to and Purchase Water from TRWD (Richland-Chambers)

Owner: Fairfield
Amount: 897 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline	16 in.	26,400	LF	$63	$1,666,000
Right of Way Easements (ROW)		12	AC	$2,746	$33,000
Engineering and Contingencies (30%)					$500,000
Subtotal of Pipeline					**$2,199,000**
Pump Station(s)					
Intake Pump Station	40 HP	1	LS	$948,192	$948,000
Land Acquisition		5	AC	$2,746	$14,000
Engineering and Contingencies (35%)					$332,000
Subtotal of Pump Station(s)					**$1,294,000**
Water Treatment Plant					
Water Treatment Plant	0.4 MGD	1	LS	$2,530,500	$2,530,500
Land Acquisition		1	AC	$2,746	$2,700
Engineering and Contingencies (35%)					$886,000
Subtotal of Water Treatment Plant					**$3,419,200**
Permitting and Mitigation					**$ 125,000**
CONSTRUCTION TOTAL					**$7,037,000**
Interest During Construction			**(12 months)**		**$246,000**
TOTAL COST					**$7,283,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$609,000
Electricity ($0.09 per kWh)					$7,000
Operation & Maintenance					$174,500
Total Annual Costs					**$790,500**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$881
Per 1,000 Gallons					$2.70
UNIT COSTS (After Amortization)					
Per Acre-Foot					$202
Per 1,000 Gallons					$0.62

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-133 Freestone County Other - Increase Delivery Infrastructure to Purchase Additional Water from Corsicana

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	Estimated Costs for Facilities
Transmission Pipeline (6 in dia., 10 miles)	$960,000
Transmission Pump Station(s) & Storage Tank(s)	$2,808,000
TOTAL COST OF FACILITIES	**$3,768,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,271,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$73,000
Interest During Construction (4% for 1 years with a 1% ROI)	$188,000
TOTAL COST OF PROJECT	**$5,550,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$464,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$72,000
Pumping Energy Costs (106663 kW-hr @ 0.09 $/kW-hr)	$10,000
Purchase of Water (266 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$546,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	266
Annual Cost of Water ($ per acft)	$2,053
Annual Cost of Water ($ per 1,000 gallons)	$6.30
AGG	4/9/2015

Table Q-134
Freestone County Other - Connect to and Purchase Water from TRWD

Owner: Unknown
Amount: 3,207 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pipeline	30 in.	52,800	LF	$151	$7,970,000
Right of Way Easements (ROW)		24	AC	$2,746	$67,000
Engineering and Contingencies (30%)					$2,411,000
Subtotal of Pipeline					**$10,448,000**
Pump Station(s)					
Intake Pump Station	111 HP	1	LS	$1,600,700	$1,600,700
Engineering and Contingencies (35%)					$560,000
Subtotal of Pump Station(s)					**$2,160,700**
Water Treatment Plant					
Water Treatment Plant	3.0 MGD	1	LS	$11,097,000	$11,097,000
Water Treatment Plant Expansion	3.0 MGD	1	LS	$7,890,000	$7,890,000
Land Acquisition		3	AC	$2,746	$8,200
Engineering and Contingencies (35%)					$6,645,000
Subtotal of Water Treatment Plant					**$25,640,200**
Permitting and Mitigation					**$ 250,000**
CONSTRUCTION TOTAL					**$38,498,900**
Interest During Construction			**(12 months)**		**$1,347,000**
TOTAL COST					**$39,845,900**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$3,334,000
Electricity ($0.09 kWh)					$26,000
Operation & Maintenance					$1,093,000
Total Annual Costs					**$4,453,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$1,389
Per 1,000 Gallons					$4.26
UNIT COSTS (After Amortization)					
Per Acre-Foot					$349
Per 1,000 Gallons					$1.07

Table Q-135
Teague - New Wells in Carrizo-Wilcox Aquifer
Freestone County, Carrizo-Wilcox Aquifer

Need	200 Ac-ft/yr	124 gpm
Depth to Water	175	
Well Depth	677	
Well Yield	300 gpm	483 ac-ft (peak)
Well Size	8 in	242 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$464,500	$464,000
Connection to Transmission System	1	EA	$178,605	$179,000
Storage tank	1	EA	$189,844	$190,000
Engineering and Contingencies				$282,600
Subtotal of Well(s)				**$1,115,600**
Permitting and Mitigaion				$10,000
Construction Total				**$1,125,600**
Interest During Construction	6	months		$20,000
Total Capital Cost				**$1,145,600**
ANNUAL COSTS				
Debt Service - Total Capital				$96,000
O&M				
Transmission				$8,000
Well(s)				$14,000
Add Chemicals etc.	78,856	1,000 gal	$0.30	$24,000
Pumping Costs	61,000	kW-h	$0.09	$11,000
Total Annual Cost				**$153,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$765
Cost per 1,000 gallons				$2.35
UNIT COSTS (After Amortization)				
Cost per ac-ft				$285.00
Cost per 1,000 gallons				$0.87

Table Q-136

Bells - New Well in Woodbine Aquifer

Grayson County, Woodbine Aquifer

Need	145 Ac-ft/yr		
Depth to Water	405		
Well Depth	1430 ft		
Well Yield	180 gpm		290 ac-ft (peak)
Well Size	8 in		145 ac-ft (average)
Wells Needed	1		

Total Capital Cost of Well*			**$1,200,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$100,000
O&M			
Transmission and Well	2.5%		$36,000
Add Chemicals etc.	47,248	$0.33 per 1000 gal	$15,800
Pumping Costs			$8,000
Total Annual Cost			**$159,800**
UNIT COSTS (During Amortization)			
Cost per ac-ft			$1,102
Cost per 1000 gallons			$3.38
UNIT COSTS (After Amortization)			
Cost per ac-ft			$412
Cost per 1000 gallons			$1.26

*From City of Bells

Table Q-137
Denison - Expand Raw Water Delivery from Lake Texoma

Owner:	Denison					
Amount (Phase I):	2,242 Ac-Ft/Yr					
Amount (Phase II):	4,484 Ac-Ft/Yr					
Phase I						
Item No. & Description	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
Construction Costs*						
New 2 MG Clearwell	1	LS	$	2,065,116	$	2,065,100
Randell WTP improvements	1	LS	$	1,144,186	$	1,144,200
Pipeline from Texoma to Lake Randell	1	LS	$	446,512	$	446,500
New intake and pump station at Lake Randell	1	LS	$	3,906,977	$	3,907,000
Lake Randell spillway and dam improvements	1	LS	$	3,348,837	$	3,348,800
Subtotal Construction					**$**	**10,911,600**
Permitting and Mitigation					$	131,000
Engineering, Contingency, Construction Management, Financial and Legal Costs					$	3,797,000
Capital Cost Subtotal					**$**	**14,839,600**
Interest During Construction		(12 months)				$519,000
TOTAL CAPITAL COST					**$**	**15,358,600**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	1,285,200
Operation & Maintenance					$	183,000
Total Annual Costs					**$**	**1,468,200**
UNIT COSTS (During Amortization)						
Per Acre-Foot						$655
Per 1,000 Gallons						$2.01
UNIT COSTS (After Amortization)						
Per Acre-Foot						$82
Per 1,000 Gallons						$0.25

Table Q-137, Continued						
Phase II						
Item No. & Description	**Qty.**	**Units**		**Unit Cost**		**Total Cost**
Construction Costs						
New 2 MG Clearwell	1	LS	$	2,065,116	$	2,065,100
Pipeline from Texoma to Lake Randell	1	LS	$	446,512	$	446,500
Pump station expansion at Lake Randell	1	LS	$	1,953,488	$	1,953,500
Subtotal Construction					**$**	**4,465,100**
Permitting and Mitigation					$	54,000
Engineering, Contingency, Construction Management, Financial and Legal Costs					$	1,540,000
Capital Cost Subtotal					**$**	**6,059,100**
Interest During Construction		(12 months)				$212,000
TOTAL CAPITAL COST					**$**	**6,271,100**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	524,800
Operation & Maintenance					$	64,000
Total Annual Costs					**$**	**588,800**
UNIT COSTS (During Amortization)						
Per Acre-Foot						$131
Per 1,000 Gallons						$0.40
UNIT COSTS (After Amortization)						
Per Acre-Foot						$14
Per 1,000 Gallons						$0.04
*Costs provided by Denison						

Table Q-138
Grayson County Mining - New Well in Trinity Aquifer
Grayson County, Trinity Aquifer

Need	41 Ac-ft/yr	
Depth to Water	153	
Well Depth	526 ft	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	81 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$115,972	$116,000
Engineering and Contingencies				$41,000
Subtotal of Well(s)				**$157,000**
Permitting and Mitigation				$1,000
Construction Total				**$158,000**
Interest During Construction	12 months			$6,000
Total Capital Cost				**$164,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$14,000
O&M				
Well(s)	2.5%			$3,000
Pumping Costs				$2,000
Total Annual Cost				**$19,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$463
Cost per 1000 gallons				$1.42
UNIT COSTS (After Amortization)				
Cost per ac-ft				$122
Cost per 1000 gallons				$0.37

Table Q-139
Gunter - New Well in Trinity Aquifer (2020)
Grayson County, Trinity Aquifer

Need	50 Ac-ft/yr	
Depth to Water	292	
Well Depth	1520 ft	
Well Yield	150 gpm	242 ac-ft (peak)
Well Size	8 in	121 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$578,654	$578,700
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$256,000
Subtotal of Well(s)				**$1,013,300**
Permitting and Mitigation				$9,000
Construction Total				**$1,022,300**
Interest During Construction	6 months			$18,000
Total Capital Cost				**$1,040,300**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$87,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$17,000
Add Chemicals etc.	16,293	$0.33 per 1000 gal		$5,500
Pumping Costs				$5,000
Total Annual Cost				**$116,500**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$2,330
Cost per 1000 gallons				$7.15
UNIT COSTS (After Amortization)				
Cost per ac-ft				$590
Cost per 1000 gallons				$1.81

Table Q-140
Gunter - New Well in Trinity Aquifer (2030)
Grayson County, Trinity Aquifer

Need	50 Ac-ft/yr	
Depth to Water	292	
Well Depth	1520 ft	
Well Yield	150 gpm	242 ac-ft (peak)
Well Size	8 in	121 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$578,654	$578,700
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$256,000
Subtotal of Well(s)				**$1,013,300**
Permitting and Mitigation				$9,000
Construction Total				**$1,022,300**
Interest During Construction	6 months			$18,000
Total Capital Cost				**$1,040,300**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$87,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$17,000
Add Chemicals etc.	16,293	$0.33 per 1000 gal		$5,500
Pumping Costs				$5,000
Total Annual Cost				**$116,500**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$2,330
Cost per 1000 gallons				$7.15
UNIT COSTS (After Amortization)				
Cost per ac-ft				$590
Cost per 1000 gallons				$1.81

Table Q-141
Southmayd - New Wells in Woodbine Aquifer
Grayson County, Woodbine Aquifer

Need	77 ac-ft/yr	
Water Depth	300 ft	
Well Depth	486 ft	
Well Yield	80 gpm	129 ac-ft (peak)
Well Size	6 in	64.5 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$ 213,412	$ 427,000
Connection to Transmission System	2	EA	$ 178,605	$ 357,000
Engineering and Contingencies				$ 257,000
Subtotal of Well(s)				**$ 1,041,000**
Permitting and Mitigation				$ 9,000
Construction Total				**$ 1,050,000**
Interest During Construction	6	months		$ 18,000
Total Capital Cost				**$ 1,068,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$89,000.00
O&M				
Transmission	1%			$ 4,284
Well(s)	2.5%			$ 12,810
Add Chemicals, Etc.	25,091	$0.33	per 1000 gal	$ 8,300
Pumping Costs				$ 3,400
Total Annual Cost				**$ 117,794**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$ 1,529.79
Cost per 1000 gallons				$ 4.69
UNIT COSTS (After Amortization)				
Cost per ac-ft				$ 373.95
Cost per 1000 gallons				$ 1.15

Table Q-142
Van Alstyne - Water System Improvements

Owner: Van Alstyne
Amount: 1,370 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pump Station(s) & Storage Tank(s)					
Pump Station	140 HP	1	LS	$1,163,800	$1,163,800
Ground Storage Tank	0.4 MG	1	LS	$361,400	$361,400
Land Acquisition		7	AC	$3,376	$24,000
Engineering and Contingencies (35%)					$534,000
Subtotal of Pump Station(s) & Storage Tank(s)					**$2,083,200**
Permitting and Mitigation					**$23,600**
CONSTRUCTION TOTAL					**$2,106,800**
Interest During Construction		**(12 months)**			**$74,000**
TOTAL COST					**$2,180,800**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$182,000
Treated Water ($1.75 per 1,000 gallons)					$781,000
Electricity ($0.09 per kWh)					$38,000
Operation & Maintenance					$46,000
Total Annual Costs					**$1,047,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$764
Per 1,000 Gallons					$2.35
UNIT COSTS (After Amortization)					
Per Acre-Foot					$631
Per 1,000 Gallons					$1.94

Table Q-143
Mabank - Lake Intake Modifications

Owner: Mabank
Amount: 2,434 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Intake					
Lake Intake Modifications		1	LS	$189,200	$189,200
Engineering and Contingencies (35%)					$66,000
Subtotal of Intake					**$255,200**
Permitting and Mitigation					**$2,300**
CONSTRUCTION TOTAL					**$257,500**
Interest During Construction			**(6 months)**		**$4,500**
TOTAL COST					**$262,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$22,000
Operation & Maintenance					$5,700
Total Annual Costs					**$27,700**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$11.38
Cost per 1000 gallons					$0.03
UNIT COSTS (After Amortization)					
Cost per ac-ft					$2.00
Cost per 1000 gallons					$0.01

Table Q-144

Athens MWA New Wells

Supply	4,480 Ac-ft/yr		2,778 gpm
Depth to Water	300 ft		
Well Depth	800 ft		
Well Yield	250 gpm		
Well Size	12 in		
Wells Needed	12		

Construction Costs	Number		Unit Cost	Total Cost
Water Wells	12		$460,014	$5,520,000
Connection to Transmission System	12		$50,000	$600,000
Ground Storage Tank	1.08 MG	1	$627,330	$627,000
Engineering and Contingencies (30% for pipelines, 35% for other)				$2,331,000
Subtotal of Well(s)				**$9,078,000**
Permitting and Mitigation				$57,000
Construction Total				**$9,135,000**
Interest During Construction		12 Months		$320,000
TOTAL CAPITAL COST				**$9,455,000**
Debt Service (5.5% for 20 years)				$791,000
Operational Costs*				$550,100
Transmission & Wells	1%			$61,000
Pump Station	2.5%			$16,000
Disinfection	1,577,119	$0.30 per 1000 gal		$473,100
Total Annual Cost				**$1,341,000**
UNIT COSTS (First 30 Years)				
Cost per ac-ft				$277
Cost per 1000 gallons				$0.85
UNIT COSTS (After 30 Years)				
Cost per ac-ft				$114
Cost per 1000 gallons				$0.35

* Includes, as appropriate, operation and maintenance, power, water purchase (raw or treated), water treatment chemicals, well pumping (for groundwater), ongoing regulatory support (as needed) and other anticipated annual operating costs.

Table Q-145						
Athens MWA - Booster PS Improvements at Athens WTP						
				1.5 peaking factor		
Amount:		6,726	Acre-Feet/Year	6 MGD	Average	
				9 MGD	Peak	
CONSTRUCTION COSTS						
Pump Station(s)						
Booster PS @ WTP	HP	217	1	LS		$2,061,000
Engineering and Contingencies (35%)						$721,000
Subtotal of Pump Station(s)						**$2,782,000**
Permitting and Mitigation			1	LS		$20,000
CONSTRUCTION TOTAL						**$2,802,000**
Interest During Construction				12 Months		$98,000
TOTAL CAPITAL COST						**$2,900,000**
ANNUAL COSTS TREATED WATER						
Debt Service (5.5% for 20 years)						$243,000
Electricity ($0.09 kWh)						$94,500
Operational Costs*						$156,800
Total Annual Costs						**$400,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot of treated water						$59
Per 1,000 Gallons of treated water						$0.18
UNIT COSTS (After Amortization)						
Per Acre-Foot of treated water						$37
Per 1,000 Gallons of treated water						$0.11

Table Q-146
Eustace - New well in Carrizo-Wilcox
Henderson County, Carrizo-Wilcox Aquifer

Need	103 Ac-ft/yr	
Depth to Water	141	
Well Depth	264 ft	
Well Yield	75 gpm	121 ac-ft (peak)
Well Size	6 in	61 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$157,101	$314,200
Connection to Transmission System	2	EA	$178,605	$357,200
Engineering and Contingencies				$217,000
Subtotal of Well(s)				**$888,400**
Permitting and Mitigation				$8,000
Construction Total				**$896,400**
Interest During Construction	6 months			$16,000
Total Capital Cost				**$912,400**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$76,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$9,000
Add Chemicals etc.	33,563	$0.33 per 1000 gal		$11,200
Pumping Costs				$2,000
Total Annual Cost				**$102,200**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$992
Cost per 1000 gallons				$3.05
UNIT COSTS (After Amortization)				
Cost per ac-ft				$254
Cost per 1000 gallons				$0.78

Cost Estimate Summary ***Water Supply Project Option*** ***Sep-13 Prices*** ***Q-147 Henderson County SEP - Transmission Facilities from Cedar Creek Lake***	
Cost based on ENR CCI 9552 for 41518 and ***a PPI of 187 for 41518***	
Item	***Estimated Costs for Facilities***
Intake Pump Stations (14.2 MGD)	$7,023,000
Transmission Pipeline (30 in dia., 10 miles)	$7,278,000
TOTAL COST OF FACILITIES	**$14,301,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$4,642,000
Environmental & Archaeology Studies and Mitigation	$251,000
Land Acquisition and Surveying (29 acres)	$82,000
Interest During Construction (4% for 1 years with a 1% ROI)	$675,000
TOTAL COST OF PROJECT	**$19,951,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,670,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$248,000
Pumping Energy Costs (2923960 kW-hr @ 0.09 $/kW-hr)	$263,000
Purchase of Water (7950 acft/yr @ 0.97 $/acft)	$8,000
TOTAL ANNUAL COST	**$2,189,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	7,950
Annual Cost of Water ($ per acft)	$275
Annual Cost of Water ($ per 1,000 gallons)	$0.84
KNR	4/13/2015

Table Q-148
Payne Springs - New Well in Carrizo-Wilcox Aquifer
Henderson County, Carrizo-Wilcox Aquifer

Need	145 Ac-ft/yr	
Depth to Water	200	
Well Depth	240	
Well Yield	90 gpm	145 ac-ft (peak)
Well Size	6 in	73 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$150,161	$300,000
Connection to Transmission System	2	EA	$178,605	$357,000
Engineering and Contingencies				$212,000
Subtotal of Well(s)				**$869,000**
Permitting and Mitigation				$8,000
Construction Total				**$877,000**
Interest During Construction	6 months			$15,000
Total Capital Cost				**$892,000**
ANNUAL COSTS				
Debt Service - Total Capital				$75,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$9,000
Add Chemicals etc.	47,248	$0.33 per 1000 gal		$15,600
Pumping Costs				$5,000
Total Annual Cost				**$108,600**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$749
Cost per 1000 gallons				$2.30
UNIT COSTS (After Amortization)				
Cost per ac-ft				$232
Cost per 1000 gallons				$0.71

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-149 Kaufman County Other - Connect to and Purchase Water from TRWD*	
Cost based on ENR CCI 9552 for 41518 and *a PPI of 187 for 41518*	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (8 in dia., 10 miles)	$1,493,000
Transmission Pump Station(s) & Storage Tank(s)	$1,990,000
Water Treatment Plant (1 MGD)	$4,844,000
TOTAL COST OF FACILITIES	**$8,327,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$2,840,000
Environmental & Archaeology Studies and Mitigation	$252,000
Land Acquisition and Surveying (25 acres)	$99,000
Interest During Construction (4% for 1 years with a 1% ROI)	$404,000
TOTAL COST OF PROJECT	**$11,922,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$998,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$59,000
Water Treatment Plant (2.5% of Cost of Facilities)	$484,000
Pumping Energy Costs (231430 kW-hr @ 0.09 $/kW-hr)	$21,000
Purchase of Water (457 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,562,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	457
Annual Cost of Water ($ per acft)	$3,418
Annual Cost of Water ($ per 1,000 gallons)	$10.49
AGG	4/13/2015

Table Q-150
Fannin County Water Supply Project

Owner: NTMWD
Amount: 12,760 ac-ft/yr

Item No. & Description	Qty.	Units	Unit Cost		Total Cost
Construction Costs					
PIPELINE					
36" Water Line from Leonard WTP to Bonham					
Pipe	95,438	FT	$188		$17,924,000
ROW	44	AC	$3,376		$147,900
14" Water Line from Leonard WTP to Trenton					
Pipe	36,676	FT	$51		$1,870,000
ROW	17	AC	$3,376		$57,000
6" Water Line from Bonham to Ector					
Pipe	27,145	FT	$20		$548,000
ROW	12	AC	$3,376		$42,000
12" Water Line from Bonham line to SW Fannin County SUD					
Pipe	19,444	FT	$38		$746,000
ROW	9	AC	$3,376		$30,000
6" Water Line to Savoy					
Pipe	18,539	FT	$20		$374,000
ROW	9	AC	$3,376		$29,000
24" Water Line to Fannin					
Pipe	28,257	FT	$113		$3,196,000
ROW	13	AC	$3,376		$44,000
6" Water Line to Honey Grove					
Pipe	64,427	FT	$20		$1,301,000
ROW	30	AC	$3,376		$100,000
Subtotal Piping				**$**	**26,408,900**
PUMP STATION					
Station 1					
Pump, building, & appurtances	1,280	hp		$	3,513,000
Storage Tank	3.8	MG		$	1,770,300
Land Acquisition for Pump Station	5	AC	$3,376	$	16,900
Land Acquisition for Storage Tank	2	AC	$3,376	$	6,800
Subtotal Pump Station				**$**	**5,307,000**
Permitting and Mitigation					**$1,400,000**
Engineering, Contingency, Construction Management, Financial and Legal Costs					
Pipeline	30%			$	7,788,000
Pump Station	35%			$	1,857,000
Capital Cost Subtotal				**$**	**42,760,900**
Interest During Construction		(24 months)			$2,993,000
Total Capital Costs				**$**	**45,753,900**

Table Q-150, Continued			
Annual Costs			
Debt Service		$	3,829,000
Operation and Maintenance Costs			
Pipeline	1%	$	312,000
Pump Station	2.5%	$	158,000
Water Cost	$1.75 per 1000 gal	$	7,276,000
Estimated Annual Power Cost	$0.09/kWh	$	86,846
Total Annual Costs		**$**	**11,661,846**
UNIT COSTS (During Amortization)			
Per Acre-Foot		$	914
Per 1,000 Gallons		$	2.80
UNIT COSTS (After Amortization)			
Per Acre-Foot		$	614
Per 1,000 Gallons		$	1.88

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-151 Jack County Other - Connect to and Purchase Water from Jacksboro*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 10 miles)	$960,000
Transmission Pump Station(s) & Storage Tank(s)	$217,000
TOTAL COST OF FACILITIES	**$1,177,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$364,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$38,000
Interest During Construction (4% for 1 years with a 1% ROI)	$64,000
TOTAL COST OF PROJECT	**$1,893,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$158,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$13,000
Pumping Energy Costs (1307 kW-hr @ 0.09 $/kW-hr)	$0
Purchase of Water (7 acft/yr @ 2.5 $/acft)	$0
TOTAL ANNUAL COST	**$171,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	7
Annual Cost of Water ($ per acft)	$24,429
Annual Cost of Water ($ per 1,000 gallons)	$74.96
AGG	4/13/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-152 Jack County Other - Connect to and Purchase Water from Walnut Creek SUD

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (6 in dia., 10 miles)	$960,000
Transmission Pump Station(s) & Storage Tank(s)	$804,000
TOTAL COST OF FACILITIES	**$1,764,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$569,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$38,000
Interest During Construction (4% for 1 years with a 1% ROI)	$92,000
TOTAL COST OF PROJECT	**$2,713,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$227,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$27,000
Pumping Energy Costs (18257 kW-hr @ 0.09 $/kW-hr)	$2,000
Purchase of Water (51 acft/yr @ 5.25 $/acft)	$0
TOTAL ANNUAL COST	**$256,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	51
Annual Cost of Water ($ per acft)	$5,020
Annual Cost of Water ($ per 1,000 gallons)	$15.40

AGG 4/13/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-153 College Mound - Increase Delivery Infrastructure to Purchase Additional Water from Terrell

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (12 in dia., 8 miles)	$1,542,000
Transmission Pump Station(s) & Storage Tank(s)	$2,130,000
TOTAL COST OF FACILITIES	**$3,672,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,208,000
Environmental & Archaeology Studies and Mitigation	$207,000
Land Acquisition and Surveying (20 acres)	$80,000
Interest During Construction (4% for 1 years with a 1% ROI)	$181,000
TOTAL COST OF PROJECT	**$5,348,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$447,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$62,000
Pumping Energy Costs (337677 kW-hr @ 0.09 $/kW-hr)	$30,000
Purchase of Water (1028 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$539,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,028
Annual Cost of Water ($ per acft)	$524
Annual Cost of Water ($ per 1,000 gallons)	$1.61
AGG	4/10/2015

Table Q-154
Forney - Increase Pump Station Capacity

Owner: Forney
Amount*: 16,815 Ac-Ft/Yr

	Size	Quantity	Unit	Unit Cost	Cost
Total Capital Cost of Pump Station Expansions**	15 MGD	2	LS	$5,581,395	**$11,162,800**
ANNUAL COSTS (During Amortization					
Debt Service (5.5% for 20 years)					$934,000
Electricity ($0.09 kWh)					$326,000
Operation & Maintenance					$335,000
Total Annual Costs					**$1,595,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$95
Per 1,000 Gallons					$0.29
UNIT COSTS (After Amortization)					
Per Acre-Foot					$39
Per 1,000 Gallons					$0.12

*Planned capacity is greater than the supply shown during the planning period.
**Cost estimates provided by the City of Forney's engineer.

Table Q-155
Gastonia-Scurry SUD - Connect to Seagoville (DWU)

Owner: Gastonia-Scurry SUD
Amount: 1,799 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pipeline	16 in.	42,990	LF	$63	$2,713,000
Right of Way Easements (ROW)		20	AC	$3,636	$72,000
Engineering and Contingencies (30%)					$836,000
Subtotal of Pipeline					**$3,621,000**
Pump Station(s) & Storage Tank(s)					
Ground Storage Tank	0.5 MG	1	LS	$432,300	$432,300
Land Acquisition		2	AC	$3,636	$7,000
Engineering and Contingencies (35%)					$151,000
Subtotal of Pump Station(s) & Storage Tank(s)					**$590,300**
Permitting and Mitigation					**$211,200**
CONSTRUCTION TOTAL					**$4,422,500**
Interest During Construction		**(12 months)**			**$155,000**
TOTAL COST					**$4,577,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$383,000
Operation & Maintenance					$46,000
Total Annual Costs					**$429,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$238
Per 1,000 Gallons					$0.73
UNIT COSTS (After Amortization)					
Per Acre-Foot					$26
Per 1,000 Gallons					$0.08

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-156 Kaufman County Mining - Connect to and Purchase Water from NTMWD

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 10 miles)	$960,000
Transmission Pump Station(s) & Storage Tank(s)	$1,751,000
TOTAL COST OF FACILITIES	**$2,711,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$901,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$97,000
Interest During Construction (4% for 1 years with a 1% ROI)	$139,000
TOTAL COST OF PROJECT	**$4,098,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$343,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$48,000
Pumping Energy Costs (52820 kW-hr @ 0.09 $/kW-hr)	$5,000
Purchase of Water (171 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$396,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	171
Annual Cost of Water ($ per acft)	$2,316
Annual Cost of Water ($ per 1,000 gallons)	$7.11
AGG	4/9/2015

Table Q-157
Terrell - Ground Storage Tank and Pump Station Expansion at West Side Pump Station (NTMWD Delivery Point)

Owner: Terrell
Amount: 11,210 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pump Station Expansion*	20 MGD	1	LS	$500,000	$500,000
Ground Storage Tank*	3.0 MG	1	LS	$2,100,000	$2,100,000
Subtotal of Pump Station(s)					**$2,600,000**
Contingency (20%)*					$520,000
Engineering/Survey (15%)*					$468,000
CONSTRUCTION TOTAL					**$3,588,000**
Interest During Construction (12 months)					**$126,000**
TOTAL COST					**$3,714,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$311,000
Electricity ($0.09 kWh)					$124,000
Treated Water ($1.75 per 1,000 gallons)					$6,392,000
Operation & Maintenance					$78,000
Total Annual Costs					**$6,905,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$616
Per 1,000 Gallons					$1.89
UNIT COSTS (After Amortization)					
Per Acre-Foot					$588
Per 1,000 Gallons					$1.80

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-158
Terrell - Line to Feed Wholesale Customer (Kaufman Co WCID)

Owner: Terrell
Amount: 2,803 acre-feet/year

CAPITAL COSTS*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	16 in.	3,800	LF	$112	$425,600
Pavement Repair		3,800	LF	$50	$190,000
Pipeline	20 in.	2,700	LF	$140	$378,000
Boring and Casing	30 in.	200	LF	$525	$105,000
Subtotal of Pipeline					**$1,098,600**
Contingency (20%)					$219,720
Engineering/Survey (15%)					$197,750
CONSTRUCTION TOTAL					**$1,516,100**
Interest During Construction (12 months)					**$53,000**
TOTAL COST					**$1,569,100**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$131,000
Electricity ($0.09 kWh)					$34,000
Treated Water ($1.75 per 1,000 gallons)					$1,598,000
Operation & Maintenance					$10,000
Total Annual Costs					**$1,773,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$633
Per 1,000 Gallons					$1.94
UNIT COSTS (After Amortization)					
Per Acre-Foot					$586
Per 1,000 Gallons					$1.80

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-159
Terrell - Line to Feed Wholesale Customer (Fairfield Development)

Owner: Terrell
Amount: 4,484 acre-feet/year

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Pipeline	20 in.	4,600	LF	$140	$644,000
Boring and Casing	34 in.	700	LF	$595	$416,500
Subtotal of Pipeline					**$1,060,500**
Contingency (20%)*					$212,100
Engineering/Survey (15%)*					$190,900
CONSTRUCTION TOTAL					**$1,463,500**
Interest During Construction (12 months)					**$51,000**
TOTAL COST					**$1,514,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$127,000
Electricity ($0.09 kWh)					$53,000
Treated Water ($1.75 per 1,000 gallons)					$2,557,000
Operation & Maintenance					$8,000
Total Annual Costs					**$2,745,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$612
Per 1,000 Gallons					$1.88
UNIT COSTS (After Amortization)					
Per Acre-Foot					$584
Per 1,000 Gallons					$1.79

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-160
Terrell - Line to Feed Wholesale Customer (Fairfield Development Extension)

Owner: Terrell
Amount: 4,484 acre-feet/year

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Pipeline	20 in.	15,300	LF	$140	$2,142,000
Boring and Casing	34 in.	1,600	LF	$595	$952,000
Subtotal of Pipeline					**$3,094,000**
Contingency (20%)*					$618,800
Engineering/Survey (15%)*					$556,900
CONSTRUCTION TOTAL					**$4,269,700**
Interest During Construction (12 months)					**$149,000**
TOTAL COST					**$4,418,700**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$370,000
Electricity ($0.09 kWh)					$63,000
Treated Water ($1.75 per 1,000 gallons)					$2,557,000
Operation & Maintenance					$26,000
Total Annual Costs					**$3,016,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$673
Per 1,000 Gallons					$2.06
UNIT COSTS (After Amortization)					
Per Acre-Foot					$590
Per 1,000 Gallons					$1.81

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-161
Terrell - Line to Feed Wholesale Customers (Las Lomas MUD and Kaufman Co WCID)

Owner: Terrell
Amount: 6,726 acre-feet/year

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline*					
Pipeline	24 in.	5,300	LF	$168	$890,400
Pavement Repair		400	LF	$50	$20,000
Boring and Casing	38 in.	100	LF	$665	$66,500
Subtotal of Pipeline					**$976,900**
Contingency (20%)*					$195,400
Engineering/Survey (15%)*					$175,800
CONSTRUCTION TOTAL					**$1,348,100**
Interest During Construction (12 months)					**$47,000**
TOTAL COST					**$1,395,100**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$117,000
Electricity ($0.09 kWh)					$80,000
Treated Water ($1.75 per 1,000 gallons)					$3,835,000
Operation & Maintenance					$11,000
Total Annual Costs					**$4,043,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$601
Per 1,000 Gallons					$1.84
UNIT COSTS (After Amortization)					
Per Acre-Foot					$584
Per 1,000 Gallons					$1.79

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-162
Terrell - Lines Along I-20 to Complete Looping in Southern System for Wholesale Customers

Owner: Terrell
Amount: 4,484 acre-feet/year

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Pipeline	16 in.	13,000	LF	$112	$1,456,000
Pavement Repair		7,000	LF	$50	$350,000
Boring and Casing	30 in.	1,200	LF	$525	$630,000
Pipeline	20 in.	8,500	LF	$140	$1,190,000
Boring and Casing	34 in.	600	LF	$595	$357,000
Subtotal of Pipeline					**$3,983,000**
Contingency (20%)					$796,600
Engineering/Survey (15%)					$716,940
CONSTRUCTION TOTAL					**$5,496,500**
Interest During Construction (12 months)					**$192,000**
TOTAL COST					**$5,688,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$476,000
Electricity ($0.09 kWh)					$91,000
Treated Water ($1.75 per 1,000 gallons)					$2,557,000
Operation & Maintenance					$32,000
Total Annual Costs					**$3,156,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$704
Per 1,000 Gallons					$2.16
UNIT COSTS (After Amortization)					
Per Acre-Foot					$598
Per 1,000 Gallons					$1.84

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-163

Terrell - New Delivery Point Connection from NTMWD (Waterlines, Pump Station, & Ground Storage)

Owner: Terrell
Amount: 13,452 Ac-Ft/Yr

CAPITAL COSTS*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline	30 in.	30,600	LF	$210	$6,426,000
Boring and Casing	48 in.	3,300	LF	$840	$2,772,000
Pipeline	24 in.	11,500	LF	$168	$1,932,000
Boring and Casing	38 in.	1,000	LF	$665	$665,000
Subtotal of Pipeline					**$11,795,000**
Pump Station(s)					
Booster Pump Station	12 MGD	1	LS	$2,100,000	$2,100,000
Ground Storage Tank	3.0 MG	1	LS	$4,000,000	$4,000,000
Subtotal of Pump Station(s)					**$6,100,000**
Contingency (20%)*					$3,579,000
Engineering/Survey (15%)*					$3,221,100
CONSTRUCTION TOTAL					**$24,695,100**
Interest During Construction (12 months)					**$864,000**
TOTAL COST					**$25,559,100**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$2,139,000
Electricity ($0.09 kWh)					$333,000
Treated Water ($1.75 per 1,000 gallons)					$7,671,000
Operation & Maintenance					$283,000
Total Annual Costs					**$10,426,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$775
Per 1,000 Gallons					$2.38
UNIT COSTS (After Amortization)					
Per Acre-Foot					$616
Per 1,000 Gallons					$1.89

* Values obtained from City of Terrell's 2013 - 2018 CIP

Table Q-164
Blooming Grove - New Well in Trinity Aquifer
Navarro County, Trinity Aquifer

Need	160 Ac-ft/yr	99 gpm
Depth to Water	400 ft	
Well Depth	3000 ft	
Well Yield	112 gpm	180 ac-ft (peak)
Well Size	8 in	160 ac-ft (average)
Wells Needed	1	

Total capital cost of well and treatment facility*				**$1,669,300**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$140,000
O&M				
Well				$50,000
Add Chemicals etc.	52,136	$0.33	1,000 gal	$17,000
Pumping Costs	98,000	kW-h	$0.09	$9,000
Total Annual Cost				**$216,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,350
Cost per 1,000 gallons				$4.14
UNIT COSTS (After Amortization)				
Cost per ac-ft				$475
Cost per 1,000 gallons				$1.46

*Cost is based on information provided by Blooming Grove

Table Q-165
Chatfield WSC - Water System Improvements
Navarro County, Trinity Aquifer

	Need	150 Ac-ft/yr	
	Depth to Water	175	
	Well Depth	730 ft	
	Well Yield	694 gpm	1,118 ac-ft (peak)
	Well Size	15 in	559 ac-ft (average)
	Wells Needed	1	

Total Capital Cost of Water System Improvements*			**$1,000,000**
ANNUAL COSTS			
Debt Service (5.5% for 20 years)			$84,000
O&M			
Transmission and Well	2.5%		$25,000
Add Chemicals etc.	48,878	$0.33 per 1000 gal	$16,400
Pumping Costs			$15,000
Total Annual Cost			**$140,400**
UNIT COSTS (During Amortization)			
Cost per ac-ft			$936.00
Cost per 1000 gallons			$2.87
UNIT COSTS (After Amortization)			
Cost per ac-ft			$376
Cost per 1000 gallons			$1.15

*From Chatfield Engineer's email

Table Q-166
M E N WSC - Upsize Lake Halbert Connection

Owner: M E N WSC
Amount: 408 AF/Y

CAPITAL COSTS

	Size	Quantity	Units	Unit Price	Cost
Transmission Facilities					
Pipeline (Rural)	8 in.	10,560	LF	$31	$331,000
Right of Way Easements		5	AC	$2,746	$13,000
Pipeline Eng. & Contingencies (30%)					$99,000
Pipeline Subtotal					**$443,000**
New 12" Tap & Metering Facilities					
New 12" Tap & Metering Facilities		1	LS	$279,100	$279,100
Engineering and Contingencies (35%)					$98,000
Tap & Metering Subtotal					**$377,100**
Elevated Storage Tank					
Elevated Storage Tank	0.5 MG	1	LS	$1,151,228	$1,151,000
Land Acquisition		2	AC	$2,746	$5,000
Engineering and Contingencies (35%)					$403,000
Storage Subtotal					**$1,559,000**
Permitting and Mitigation					**$57,700**
Interest During Construction			**(12 months)**		**$85,000**
TOTAL CAPITAL COST					**$2,521,800**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$211,000
Pipeline O&M (1%)					$4,000
Storage and Metering O&M (2.5%)					$43,000
TOTAL ANNUAL COST					**$258,000**
Unit Costs (During Amortization)					
Cost per acre-ft					$632
Cost per 1000 gallons					$1.94
Unit Costs (After Amortization)					
Cost per acre-ft					$115
Cost per 1000 gallons					$0.35

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-167 Navarro County SEP - Purchase Water from Corsicana	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (24 in dia., 10 miles)	$5,438,000
Transmission Pump Station(s) & Storage Tank(s)	$6,212,000
TOTAL COST OF FACILITIES	**$11,650,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$3,805,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$73,000
Interest During Construction (4% for 1 years with a 1% ROI)	$553,000
TOTAL COST OF PROJECT	**$16,331,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,367,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$189,000
Pumping Energy Costs (2084784 kW-hr @ 0.09 $/kW-hr)	$188,000
Purchase of Water (5440 acft/yr @ 3.67 $/acft)	$20,000
TOTAL ANNUAL COST	**$1,764,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	5,440
Annual Cost of Water ($ per acft)	$324
Annual Cost of Water ($ per 1,000 gallons)	$0.99
AGG	4/13/2015

Table Q-168
Navarro Mills WSC - New Well in Woodbine Aquifer
Navarro County, Woodbine Aquifer

Need	180 Ac-ft/yr	
Depth to Water	259 ft	
Well Depth	1500 ft	
Well Yield	125 gpm	201.6 ac-ft (peak)
Well Size	8 in	180 ac-ft (average)
Wells Needed	1	

Total capital cost of well*				**$1,339,500**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$112,100
O&M				
Well				$40,185
Add Chemicals etc.	58,653	1,000 gal	$0.33	$19,600
Pumping Costs	76,000	kW-h	$0.09	$6,840
Total Annual Cost				**$178,700**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$993
Cost per 1,000 gallons				$3.05
UNIT COSTS (After Amortization)				
Cost per ac-ft				$370
Cost per 1,000 gallons				$1.14

*Cost is based on information provided by Navarro Mills WSC

Table Q-169

Aledo - Parallel Pipeline & Pump Station Expansion to Purchase Additional Water from Fort Worth (TRWD)

Probable Owner: Aledo
Amount: 277 AF/Y

CONSTRUCTION COSTS

TRANSMISSION FACILITIES

Pipelines*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline from Fort Worth	12 in.	7,000	LF	$54	$375,000
Pipeline Westside IV	16 in.	24,000	LF	$89	$2,133,000
Pipeline Westside IV	20 in.	14,000	LF	$124	$1,732,000
Engineering and Contingencies (30%)					$1,272,000
Subtotal of Pipelines					**$5,512,000**
Pump Station(s)*	**Size**	**Quantity**	**Unit**		**Cost**
Pump Station Expansion		1	Ea	$1,339,500	$1,339,500
Engineering and Contingencies (35%)					$469,000
Subtotal of Pump Stations					**$1,808,500**
Permitting and mitigation					$67,000
CONSTRUCTION TOTAL					**$7,387,500**
Interest During Construction	**(12 months)**				**$256,000**
TOTAL COST					**$7,710,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$645,000
Electricity ($0.09 per kWh)					$2,000
Operation & Maintenance					$91,000
Total Annual Costs					**$738,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$2,664
Per 1,000 Gallons					$8.18
UNIT COSTS (After Amortization)					
Per Acre-Foot					$336
Per 1,000 Gallons					$1.03

* Costs are based on more detailed information.

Table Q-170
Cresson - New Well in Trinity Aquifer
Parker County, Trinity Aquifer

Need	113 Ac-ft/yr	
Depth to Water	167	
Well Depth	271 ft	
Well Yield	80 gpm	129 ac-ft (peak)
Well Size	6 in	65 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$159,029	$318,100
Connection to Transmission System	2	EA	$178,605	$357,200
Engineering and Contingencies				$218,000
Subtotal of Well(s)				**$893,300**
Permitting and Mitigation				$8,000
Construction Total				**$901,300**
Interest During Construction	6 months			$16,000
Total Capital Cost				**$917,300**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$77,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$10,000
Add Chemicals etc.	36,821	$0.33 per 1000 gal		$12,300
Pumping Costs				$3,000
Total Annual Cost				**$106,300**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$941
Cost per 1000 gallons				$2.89
UNIT COSTS (After Amortization)				
Cost per ac-ft				$259
Cost per 1000 gallons				$0.79

Table Q-171

Annetta, Annetta North, Annetta South and Willow Park - Connect to and Purchase Water from Weatherford (TRWD)

Owner:	Multiple		
Amount:	306 Ac-Ft/Yr	Willow Park	54.4%
	196 Ac-Ft/Yr	Annetta	34.9%
	38 Ac-Ft/Yr	Annetta North	6.8%
	22 Ac-Ft/Yr	Annetta South	3.9%
	562 Ac-Ft/Yr	Total	

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline					
Pipeline (everyone)	12 in.	14,730	LF	$38	$565,000
Right of Way Easements (ROW)		7	AC	$6,533	$44,000
Engineering and Contingencies (30%)					$170,000
Permitting and Mitigation					$70,000
Subtotal of Pipeline (everyone)					**$849,000**
Pipeline (Annetta N.)	10 in.	0	LF	$35	$0
Right of Way Easements (ROW)		0	AC	$6,533	$0
Engineering and Contingencies (30%)					$0
Permitting and Mitigation					$0
Subtotal of Pipeline (Annetta N.)					**$0**
Pipeline (Willow Park)	10 in.	2,000	LF	$35	$70,000
Right of Way Easements (ROW)		1	AC	$6,533	$6,000
Engineering and Contingencies (30%)					$21,000
Permitting and Mitigation					$9,000
Subtotal of Pipeline (Willow Park)					**$106,000**
Pipeline (Annetta & Annetta S.)	8 in.	19,287	LF	$31	$604,000
Right of Way Easements (ROW)		9	AC	$6,533	$58,000
Engineering and Contingencies (30%)					$181,000
Permitting and Mitigation					$91,000
Subtotal of Pipeline (Annetta & Annetta S.)					**$934,000**
Pipeline (Annetta S.)	6 in.	27,000	LF	$20	$545,000
Right of Way Easements (ROW)		12	AC	$6,533	$81,000
Engineering and Contingencies (30%)					$164,000
Permitting and Mitigation					$128,000
Subtotal of Pipeline (Annetta S.)					**$918,000**
Total of Pipeline Cost					**$2,807,000**
Annetta N. portion of pipelines	*6.8% of shared line*				*$57,406*
Willow Park portion of pipelines	*54.4% of shared line, 100% of 10 in line*				*$568,267*
Annetta portion of pipelines	*34.9% of shared line, 89.9% of 10 in line*				*$1,135,836*
Annetta S. portion of pipelines	*3.9% of shared line, 10.1% of 8 in line, 100% of 6 inch line*				*$1,045,491.76*
					$2,807,000

Table Q-171, Continued					
Pump Stations					
Booster Pump Station 1	9 HP	1	LS	$669,400	$669,400
Land Acquisition		5	AC	$6,533	$33,000
Engineering and Contingencies (35%)					$234,000
Permitting and Mitigation					$33,000
Subtotal of Pump Station 1					**$969,400**
Total of Pump Stations					**$969,400**
Annetta N. portion of P.S.	*0% PS1*				*$0*
Willow Park portion of P.S	*0% of PS1*				*$0*
Annetta portion of P.S	*95.5% of PS1*				*$871,571*
Annetta S. portion of P.S	*4.5% of PS1*				*$97,829*
					$969,400
CONSTRUCTION TOTAL					**$3,776,400**
Interest During Construction		**(12 months)**			**$132,000**
TOTAL COST					**$3,908,400**
Annetta N. portion					*$59,400*
Willow Park portion					*$588,100*
Annetta portion					*$2,077,600*
Annetta S. portion					*$1,183,300*
					$3,908,400
ANNUAL COSTS					
Annetta N.					
Debt Service (5.5% for 20 years)					$5,000
Electricity ($0.09 kWh)					$0
Treated Water ($3.78 per 1,000 gallons)					$47,000
Operation & Maintenance					$1,000
Total Annual Costs					**$53,000**
Willow Park					
Debt Service (5.5% for 20 years)					$49,000
Electricity ($0.09 kWh)					$0
Treated Water ($3.78 per 1,000 gallons)					$377,000
Operation & Maintenance					$16,000
Total Annual Costs					**$442,000**

Table Q-171, Continued	
Annetta	
Debt Service (5.5% for 20 years)	$174,000
Electricity ($0.09 kWh)	$3,000
Treated Water ($3.78 per 1,000 gallons)	$241,000
Operation & Maintenance	$16,000
Total Annual Costs	**$434,000**
Annetta S.	
Debt Service (5.5% for 20 years)	$99,000
Electricity ($0.09 kWh)	$0
Treated Water ($3.78 per 1,000 gallons)	$27,000
Operation & Maintenance	$9,000
Total Annual Costs	**$135,000**
TOTAL ANNUAL COSTS	
Debt Service (5.5% for 20 years)	$327,000
Electricity ($0.09 kWh)	$3,000
Treated Water ($3.78 per 1,000 gallons)	$692,000
Operation & Maintenance	$42,000
Total Annual Costs	**$1,064,000**
UNIT COSTS (During Amortization)	
Annetta N.	
Per Acre-Foot	$1,395
Per 1,000 Gallons	$4.28
Willow Park	
Per Acre-Foot	$1,444
Per 1,000 Gallons	$4.43
Annetta	
Per Acre-Foot	$2,214
Per 1,000 Gallons	$6.80
Annetta S.	
Per Acre-Foot	$6,136
Per 1,000 Gallons	$18.83
UNIT COSTS (After Amortization)	
Annetta N.	
Per Acre- Foot	$1,263
Per 1,000 Gallons	$3.88
Willow Park	
Per Acre- Foot	$1,284
Per 1,000 Gallons	$3.94
Annetta	
Per Acre- Foot	$1,327
Per 1,000 Gallons	$4.07
Annetta S.	
Per Acre- Foot	$1,636
Per 1,000 Gallons	$5.02

Table Q-172
Parker County SUD - New Wells in Trinity Aquifer
Parker County, Trinity Aquifer

Need	513 Ac-ft/yr	
Depth to Water	164	
Well Depth	335	
Well Yield	88 gpm	142 ac-ft (peak)
Well Size	6 in	71 ac-ft (average)
Wells Needed	8	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	8	EA	$176,148	$1,409,000
Connection to Transmission System	8	EA	$178,605	$1,429,000
Engineering and Contingencies				$922,000
Subtotal of Well(s)				**$3,760,000**
Permitting and Mitigation				$34,000
Construction Total				**$3,794,000**
Interest During Construction		6 months		$66,000
Total Capital Cost				**$3,860,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$323,000
O&M				
Transmission	1%			$17,000
Well(s)	2.5%			$42,000
Add Chemicals etc.	167,162	$0.33 per 1000 gal		$56,000
Pumping Costs				$14,000
Total Annual Cost				**$452,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$881
Cost per 1000 gallons				$2.70
UNIT COSTS (After Amortization)				
Cost per ac-ft				$251
Cost per 1000 gallons				$0.77

Q-173
Parker County Other - New Wells in Trinity Aquifer
Parker County, Trinity Aquifer

Need	200 Ac-ft/yr	
Depth to Water	164	
Well Depth	335	
Well Yield	88 gpm	142 ac-ft (peak)
Well Size	6 in	71 ac-ft (average)
Wells Needed	3	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	3	EA	$176,148	$528,000
Connection to Transmission System	3	EA	$178,605	$536,000
Engineering and Contingencies				$346,000
Subtotal of Well(s)				**$1,410,000**
Permitting and Mitigation				$13,000
Construction Total				**$1,423,000**
Interest During Construction	6 months			$25,000
Total Capital Cost				**$1,448,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$121,000
O&M				
Transmission	1%			$6,000
Well(s)	2.5%			$16,000
Add Chemicals etc.	65,170	$0.33 per 1000 gal		$21,800
Pumping Costs				$5,000
Total Annual Cost				**$169,800**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$849
Cost per 1000 gallons				$2.61
UNIT COSTS (After Amortization)				
Cost per ac-ft				$244
Cost per 1000 gallons				$0.75

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-174 Parker County Other - Connect to and Purchase Water from TRWD*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (36 in dia., 21 miles)	$22,383,000
Transmission Pump Station(s) & Storage Tank(s)	$9,934,000
Water Treatment Plant (17.2 MGD)	$51,350,000
TOTAL COST OF FACILITIES	**$83,667,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$28,164,000
Environmental & Archaeology Studies and Mitigation	$573,000
Land Acquisition and Surveying (59 acres)	$422,000
Interest During Construction (4% for 1 years with a 1% ROI)	$3,949,000
TOTAL COST OF PROJECT	**$116,775,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$9,772,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$440,000
Water Treatment Plant (2.5% of Cost of Facilities)	$5,135,000
Pumping Energy Costs (7899993 kW-hr @ 0.09 $/kW-hr)	$711,000
Purchase of Water (9618 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$16,058,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	9,618
Annual Cost of Water ($ per acft)	$1,670
Annual Cost of Water ($ per 1,000 gallons)	$5.12
AGG	4/13/2015

Table Q-175
Springtown - Lake Intake Modifications

Owner: Springtown
Amount: 244 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Intake					
Lake Intake Modifications		1	LS	$202,000	$202,000
Engineering and Contingencies (35%)					$71,000
Subtotal of Intake					**$273,000**
Permitting and Mitigation					**$2,400**
CONSTRUCTION TOTAL					**$275,400**
Interest During Construction			**(6 months)**		**$4,800**
TOTAL COST					**$280,200**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$23,000
Operation & Maintenance					$6,100
Total Annual Costs					**$29,100**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$119.26
Cost per 1000 gallons					$0.37
UNIT COSTS (After Amortization)					
Cost per ac-ft					$25
Cost per 1000 gallons					$0.08

Table Q-176
Springtown - New Well in Trinity Aquifer
Parker County, Trinity Aquifer

Need	70 Ac-ft/yr	
Depth to Water	267	
Well Depth	383 ft	
Well Yield	76 gpm	122 ac-ft (peak)
Well Size	6 in	61 ac-ft (average)
Wells Needed	2	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	2	EA	$188,076	$376,200
Connection to Transmission System	2	EA	$178,605	$357,200
Engineering and Contingencies				$239,000
Subtotal of Well(s)				**$972,400**
Permitting and Mitigation				$9,000
Construction Total				**$981,400**
Interest During Construction	6 months			$17,000
Total Capital Cost				**$998,400**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$84,000
O&M				
Transmission	1%			$4,000
Well(s)	2.5%			$11,000
Add Chemicals etc.	22,810	$0.33 per 1000 gal		$7,600
Pumping Costs				$3,000
Total Annual Cost				**$109,600**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,566
Cost per 1000 gallons				$4.81
UNIT COSTS (After Amortization)				
Cost per ac-ft				$366
Cost per 1000 gallons				$1.12

Table Q-177
Weatherford - Develop Lake Weatherford Reuse Project

Owner: Weatherford
Amount: 2,240 Ac-Ft/Yr

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
16" Pipeline and Appurtenances	16 in.	31,253	LF		$3,753,300
Outfall Structure		1	LS	$10,000	$10,000
Permanent Right of Way Easements (ROW)		31,253	LF	$20	$625,100
Temporary Right of Way Easements (ROW)		31,253	LF	$15	$468,800
Contingencies (25%)					$941,000
Mobilization (5%)					$235,000
Engineering (12%)					$593,000
Subtotal of Pipeline					**$6,626,200**
Pump Station(s)					
Pump Station		1	LS	$2,958,750	$2,958,800
Contingencies (25%)					$740,000
Mobilization (5%)					$185,000
Engineering/Survey (12%)					$466,000
Subtotal of Pump Station(s)					**$4,349,800**
Water Treatment Plant					
Water Treatment Plant Upgrades		1	LS	$1,460,000	$1,460,000
Subtotal of Water Treatment Plant					**$1,460,000**
CONSTRUCTION TOTAL					**$12,436,000**
Interest During Construction			**(18 months)**		**$653,000**
TOTAL COST					**$13,089,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,095,000
Electricity ($0.09 kWh)					$67,000
Operation & Maintenance					$134,000
Total Annual Costs					**$1,296,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$579
Per 1,000 Gallons					$1.78
UNIT COSTS (After Amortization)					
Per Acre-Foot					$90
Per 1,000 Gallons					$0.28

*Costs provided by Freese and Nichols, Inc.

Table Q-178
Weatherford - Increase Benbrook Pump Station Capacity

Probable Owner: Weatherford
Quantity: 448 AF/Y

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES					
Pump Station(s)*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Expansion of Existing Benbrook Pump Station		1	LS	$1,436,030	$1,436,000
Mobilization (5%)					$71,800
OH & P (25%)					$377,000
Contingency (20%)					$377,000
Subtotal of Pump Station(s)					**$2,261,800**
CONSTRUCTION TOTAL					**$2,261,800**
Interest During Construction			**(6 months)**		**$40,000**
TOTAL COST					**$2,301,800**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$193,000
Electricity ($0.09 kWh)					$5,000
Raw water purchase ($0.67/ kgal)					$98,000
Operation & Maintenance					$43,000
Total Annual Costs					**$339,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$756
Per 1,000 gallons					$2.32
UNIT COSTS (After Amortization)					
Per Acre-Foot					$326
Per 1,000 gallons					$1.00

* Cost provided by Freese and Nichols, Inc.

Table Q-179
Blackland WSC - Direct Connect to NTMWD and Purchase Additional Water from NTMWD

Owner: Blackland WSC
Amount: 807 Ac-Ft/Yr

CONSTRUCTION COSTS*	Size	Quantity	Unit	Unit Price	Cost
NTMWD Meter Vault (if necessary)		1	LS	$125,000	$125,000
Underground Concrete Storage Tank	0.5 MG	1	LS	$800,000	$800,000
SCADA Control/Disinfection/Storage Building		1	LS	$85,000	$85,000
Vertical Turbine Pumps	750 gpm	2	LS	$45,000	$90,000
Disinfection Equipment, Electrical, SCADA & Controls		1	LS	$175,000	$175,000
Yard Piping, Fencing & Appurtenances		1	LS	$75,000	$75,000
Subtotal of Take-Point Site					**$1,350,000**
Transmission Line	12 in	26,000	LF	$36	$936,000
Material & Installation					$225,000
Subtotal of Transmission Line					**$1,161,000**
Subtotal Construction Cost					**$2,511,000**
Construction Contingency (10%)					$251,100
Basic Engineering Services					$245,970
Resident Project Representative					$69,050
Additional Services					$45,000
Subtotal of Engineering and Testing Costs					**$360,020**
Estimated Legal Costs					$41,430
Interest During Construction			**(18 months)**		**$132,000**
TOTAL COST					**$3,295,550**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$276,000
Electricity ($0.09 kWh)					$14,000
Operation & Maintenance					$38,000
Total Annual Costs					**$328,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$406
Per 1,000 Gallons					$1.25
UNIT COSTS (After Amortization)					
Per Acre-Foot					$64
Per 1,000 Gallons					$0.20

*Costs provided by Blackland WSC's engineer.

Table Q-180
Cash WSC - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Owner:	Cash WSC					
Amount:	1,165	Ac-Ft/Yr				
CONSTRUCTION COSTS						
TRANSMISSION FACILITIES*						
	Qty.	**Units**		**Unit Cost**		**Total Cost**
16" Water Line	53,790	LF		$84	$	4,500,000
Pump Station Upgrades	1	LS	$	250,000	$	250,000
Engineering and Contingencies	30%				$	1,425,000
Subtotal of Transmission Facilities					**$**	**6,175,000**
PERMITTING AND MITIGATION					**$**	**254,700**
CONSTRUCTION TOTAL					**$**	**6,429,700**
Interest During Construction		(12 months)			**$**	**225,000**
TOTAL CAPITAL COST					**$**	**6,654,700**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)					$	557,000
Operation and Maintenance					$	62,000
Total Annual Costs					**$**	**619,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot					$	531
Per 1,000 Gallons					$	1.63
UNIT COSTS (After Amortization)						
Per Acre-Foot					$	53
Per 1,000 Gallons					$	0.16
*Costs provided by Cash WSC's engineer						

Table Q-181

East Fork Special Utility District - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Owner: East Fork SUD
Amount: 1,624 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Pipelines*					$1,450,000
Subtotal of Pipeline					**$1,450,000**
Pump Station(s) & Storage					
Elevated Storage Tank*		1	LS	$1,875,000	$1,875,000
Subtotal of Pump Station(s) & Storage					**$1,875,000**
CONSTRUCTION TOTAL					**$3,325,000**
Interest During Construction		**(18 months)**			**$175,000**
TOTAL COST					**$3,500,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$293,000
Treated Water ($1.75 per 1,000 gallons)					$926,000
Operation & Maintenance					$73,000
Total Annual Costs					**$1,292,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$796
Per 1,000 Gallons					$2.44
UNIT COSTS (After Amortization)					
Per Acre-Foot					$615
Per 1,000 Gallons					$1.89

*Costs provided by East Fork SUD

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-182 Fate - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (18 in dia., 14 miles)	$5,040,000
Transmission Pump Station(s) & Storage Tank(s)	$5,578,000
TOTAL COST OF FACILITIES	**$10,618,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$3,464,000
Environmental & Archaeology Studies and Mitigation	$348,000
Land Acquisition and Surveying (34 acres)	$135,000
Interest During Construction (4% for 1 years with a 1% ROI)	$510,000
TOTAL COST OF PROJECT	**$15,075,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,261,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$177,000
Pumping Energy Costs (1508981 kW-hr @ 0.09 $/kW-hr)	$136,000
Purchase of Water (2982 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,574,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	2,982
Annual Cost of Water ($ per acft)	$528
Annual Cost of Water ($ per 1,000 gallons)	$1.62
AGG	4/10/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-183 Rockwall - Increase Delivery Infrastructure to Purchase Additional Water from NTMWD

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (42 in dia., 11 miles)	$11,409,000
Transmission Pump Station(s) & Storage Tank(s)	$4,882,000
TOTAL COST OF FACILITIES	**$16,291,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$5,131,000
Environmental & Archaeology Studies and Mitigation	$264,000
Land Acquisition and Surveying (26 acres)	$102,000
Interest During Construction (4% for 1 years with a 1% ROI)	$763,000
TOTAL COST OF PROJECT	**$22,551,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,887,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$217,000
Pumping Energy Costs (2847290 kW-hr @ 0.09 $/kW-hr)	$256,000
Purchase of Water (12990 acft/yr @ 1.7 $/acft)	$22,000
TOTAL ANNUAL COST	**$2,382,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	12,990
Annual Cost of Water ($ per acft)	$183
Annual Cost of Water ($ per 1,000 gallons)	$0.56
AGG	4/13/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-184 Bethesda WSC - Connect to and Purchase Water from Arlington

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (18 in dia., 17 miles)	$8,688,000
Transmission Pump Station(s) & Storage Tank(s)	$4,482,000
TOTAL COST OF FACILITIES	**$13,170,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$4,175,000
Environmental & Archaeology Studies and Mitigation	$424,000
Land Acquisition and Surveying (41 acres)	$296,000
Interest During Construction (4% for 1 years with a 1% ROI)	$633,000
TOTAL COST OF PROJECT	**$18,698,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,565,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$187,000
Pumping Energy Costs (981890 kW-hr @ 0.09 $/kW-hr)	$88,000
Purchase of Water (2614 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,840,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	2,614
Annual Cost of Water ($ per acft)	$704
Annual Cost of Water ($ per 1,000 gallons)	$2.16
AGG	4/9/2015

Table Q-185
Blue Mound - Purchase Existing Water System from Monarch Utilities

Owner: Blue Mound
Amount: N/A Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Purchase Existing Monarch Utilities System		1	LS	$5,000,000	$5,000,000
TOTAL COST					**$5,000,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$418,000
Operation & Maintenance					$150,000
Total Annual Costs					**$568,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft				N/A	
Cost per 1000 gallons				N/A	
UNIT COSTS (After Amortization)					
Cost per ac-ft				N/A	
Cost per 1000 gallons				N/A	

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-186 Burleson - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (24 in dia., 12 miles)	$9,356,000
Transmission Pump Station(s) & Storage Tank(s)	$6,254,000
TOTAL COST OF FACILITIES	**$15,610,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$4,996,000
Environmental & Archaeology Studies and Mitigation	$307,000
Land Acquisition and Surveying (30 acres)	$130,000
Interest During Construction (4% for 1 years with a 1% ROI)	$737,000
TOTAL COST OF PROJECT	**$21,780,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,823,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$229,000
Pumping Energy Costs (1883332 kW-hr @ 0.09 $/kW-hr)	$169,000
Purchase of Water (5541 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$2,221,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	5,541
Annual Cost of Water ($ per acft)	$401
Annual Cost of Water ($ per 1,000 gallons)	$1.23
AMH	4/13/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-187 Crowley - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (18 in dia., 7 miles)	$3,780,000
Transmission Pump Station(s) & Storage Tank(s)	$4,399,000
TOTAL COST OF FACILITIES	**$8,179,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$2,674,000
Environmental & Archaeology Studies and Mitigation	$185,000
Land Acquisition and Surveying (18 acres)	$129,000
Interest During Construction (4% for 1 years with a 1% ROI)	$391,000
TOTAL COST OF PROJECT	**$11,558,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$967,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$135,000
Pumping Energy Costs (974574 kW-hr @ 0.09 $/kW-hr)	$88,000
Purchase of Water (3028 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,190,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	3,028
Annual Cost of Water ($ per acft)	$393
Annual Cost of Water ($ per 1,000 gallons)	$1.21
AMH	4/13/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* ***Q-188 Johnson County SUD - Connect to Purchase Water from Grand Prairie***	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (30 in dia., 50 miles)	$50,341,000
Transmission Pump Station(s) & Storage Tank(s)	$11,612,000
TOTAL COST OF FACILITIES	**$61,953,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$19,166,000
Environmental & Archaeology Studies and Mitigation	$1,242,000
Land Acquisition and Surveying (120 acres)	$866,000
Interest During Construction (4% for 1 years with a 1% ROI)	$2,913,000
TOTAL COST OF PROJECT	**$86,140,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$7,208,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$757,000
Pumping Energy Costs (4820161 kW-hr @ 0.09 $/kW-hr)	$434,000
Purchase of Water (6726 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$8,399,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	6,726
Annual Cost of Water ($ per acft)	$1,249
Annual Cost of Water ($ per 1,000 gallons)	$3.83
AGG	4/10/2015

Table Q-189
Keller - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Owner: Keller
Amount: 10,089 Ac-Ft/Yr

CAPITAL COSTS	Size	Quantity	Unit	Unit Price	Cost
Pipeline					
Alta Vista Pipeline*					$5,328,000
Right of Way Easements (ROW)*					$405,000
Engineering and Contingencies (30%)					$1,720,000
Subtotal of Pipeline					**$7,453,000**
Pump Station(s)					
Alta Vista Pump Station*		1	LS	$5,600,000	$5,600,000
Off-Site Capacity Cost Sharing with Fort Worth*		1	LS	$1,220,000	$1,220,000
Engineering and Contingencies (35%)					$2,387,000
Subtotal of Pump Station(s)					**$9,207,000**
CONSTRUCTION TOTAL					**$16,660,000**
Interest During Construction			**(18 months)**		**$875,000**
TOTAL COST					**$17,535,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$1,467,000
Electricity ($0.09 kWh)					$232,000
Operation & Maintenance					$269,000
Total Annual Costs					**$1,968,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$195
Per 1,000 Gallons					$0.60
UNIT COSTS (After Amortization)					
Per Acre-Foot					$50
Per 1,000 Gallons					$0.15

* Cost provided by Freese and Nichols, Inc.

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-190 Kennedale - Connect to and Purchase Water from Arlington*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 2 miles)	$237,000
Transmission Pump Station(s) & Storage Tank(s)	$946,000
TOTAL COST OF FACILITIES	**$1,183,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$402,000
Environmental & Archaeology Studies and Mitigation	$45,000
Land Acquisition and Surveying (4 acres)	$31,000
Interest During Construction (4% for 1 years with a 1% ROI)	$59,000
TOTAL COST OF PROJECT	**$1,720,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$144,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$23,000
Pumping Energy Costs (66982 kW-hr @ 0.09 $/kW-hr)	$6,000
Purchase of Water (280 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$173,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	280
Annual Cost of Water ($ per acft)	$618
Annual Cost of Water ($ per 1,000 gallons)	$1.90
AGG	4/9/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-191 Kennedale - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 5 miles)	$641,000
Transmission Pump Station(s) & Storage Tank(s)	$1,869,000
TOTAL COST OF FACILITIES	**$2,510,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$846,000
Environmental & Archaeology Studies and Mitigation	$120,000
Land Acquisition and Surveying (12 acres)	$84,000
Interest During Construction (4% for 1 years with a 1% ROI)	$125,000
TOTAL COST OF PROJECT	**$3,685,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$308,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$48,000
Pumping Energy Costs (74060 kW-hr @ 0.09 $/kW-hr)	$7,000
Purchase of Water (283 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$363,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	283
Annual Cost of Water ($ per acft)	$1,283
Annual Cost of Water ($ per 1,000 gallons)	$3.94
AGG	4/10/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-192 Pantego - Connect to and Purchase Water from Arlington*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 1 miles)	$134,000
Transmission Pump Station(s) & Storage Tank(s)	$399,000
TOTAL COST OF FACILITIES	**$533,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$180,000
Environmental & Archaeology Studies and Mitigation	$25,000
Land Acquisition and Surveying (2 acres)	$13,000
Interest During Construction (4% for 1 years with a 1% ROI)	$27,000
TOTAL COST OF PROJECT	**$778,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$65,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$9,000
Pumping Energy Costs (5830 kW-hr @ 0.09 $/kW-hr)	$1,000
Purchase of Water (27 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$75,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	27
Annual Cost of Water ($ per acft)	$2,778
Annual Cost of Water ($ per 1,000 gallons)	$8.52
KNR	4/13/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-193 Pantego - Connect to and Purchase Water from Fort Worth

Cost based on ENR CCI 9552 for 41518 and
a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (6 in dia., 1 miles)	$134,000
Transmission Pump Station(s) & Storage Tank(s)	$437,000
TOTAL COST OF FACILITIES	**$571,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$193,000
Environmental & Archaeology Studies and Mitigation	$25,000
Land Acquisition and Surveying (2 acres)	$13,000
Interest During Construction (4% for 1 years with a 1% ROI)	$29,000
TOTAL COST OF PROJECT	**$831,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$70,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$10,000
Pumping Energy Costs (6766 kW-hr @ 0.09 $/kW-hr)	$1,000
Purchase of Water (27 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$81,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	27
Annual Cost of Water ($ per acft)	$3,000
Annual Cost of Water ($ per 1,000 gallons)	$9.21
KNR	4/13/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-194 Pelican Bay - Connect to and Purchase Water from Azle (TRWD)*	
Cost based on ENR CCI 9552 for 41518 and *a PPI of 187 for 41518*	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 2 miles)	$328,000
Transmission Pump Station(s) & Storage Tank(s)	$298,000
TOTAL COST OF FACILITIES	**$626,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$203,000
Environmental & Archaeology Studies and Mitigation	$62,000
Land Acquisition and Surveying (4 acres)	$32,000
Interest During Construction (4% for 1 years with a 1% ROI)	$33,000
TOTAL COST OF PROJECT	**$956,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$80,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$8,000
Pumping Energy Costs (3338 kW-hr @ 0.09 $/kW-hr)	$0
Purchase of Water (12 acft/yr @ 0.97 $/acft)	$0
TOTAL ANNUAL COST	**$88,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	12
Annual Cost of Water ($ per acft)	$7,333
Annual Cost of Water ($ per 1,000 gallons)	$22.50
KNR	4/9/2015

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-195 Southlake - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	*Estimated Costs for Facilities*
Transmission Pipeline (30 in dia., 26 miles)	$26,552,000
Transmission Pump Station(s) & Storage Tank(s)	$4,407,000
TOTAL COST OF FACILITIES	**$30,959,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$9,508,000
Environmental & Archaeology Studies and Mitigation	$655,000
Land Acquisition and Surveying (64 acres)	$457,000
Interest During Construction (4% for 1 years with a 1% ROI)	$1,456,000
TOTAL COST OF PROJECT	**$43,035,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$3,601,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$361,000
Pumping Energy Costs (346778 kW-hr @ 0.09 $/kW-hr)	$31,000
Purchase of Water (8349 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$3,993,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	8,349
Annual Cost of Water ($ per acft)	$478
Annual Cost of Water ($ per 1,000 gallons)	$1.47
AMH	4/13/2015

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-196 Tarrant County SEP - Direct Reuse	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (18 in dia., 10 miles)	$5,118,000
Transmission Pump Station(s) & Storage Tank(s)	$4,118,000
TOTAL COST OF FACILITIES	**$9,236,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$2,977,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$174,000
Interest During Construction (4% for 1 years with a 1% ROI)	$443,000
TOTAL COST OF PROJECT	**$13,080,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,094,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$143,000
Pumping Energy Costs (898449 kW-hr @ 0.09 $/kW-hr)	$81,000
Purchase of Water (2360 acft/yr @ 0.97 $/acft)	$2,000
TOTAL ANNUAL COST	**$1,320,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	2,360
Annual Cost of Water ($ per acft)	$559
Annual Cost of Water ($ per 1,000 gallons)	$1.72
KNR	4/9/2015

Table Q-197
Trophy Club, Westlake, Fort Worth - Phase I: Joint 36" Water Delivery Line

Probable Owner: Fort Worth, Westlake, and Trophy Club
Amount: 5,895 acre-ft/year

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES*					
Pipelines	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline and Appurtenances	36 in.	13,150	LF	$497.82	$6,546,300
ROW Easements					$1,146,000
Contingency (20%)					$1,309,300
Engineering (12%)					$943,000
Subtotal of Pipelines					**$9,944,600**
CONSTRUCTION TOTAL					**$9,944,600**
Interest During Construction	**(18 months)**				**$522,000**
TOTAL COST					**$10,466,600**
Fort Worth's Share (50%)					**$5,233,000**
Westlake's Share (28%)					**$2,961,000**
Trophy Club's Share (22%)					**$2,273,000**
ANNUAL COSTS FOR FORT WORTH					
Debt Service (5.5% for 20 years)					$438,000
Operation & Maintenance					$39,500
Total Annual Costs					**$478,000**
ANNUAL COSTS FOR WESTLAKE					
Debt Service (5.5% for 20 years)					$248,000
Operation & Maintenance					$22,346
Total Annual Costs					**$270,346**
ANNUAL COSTS FOR TROPHY CLUB					
Debt Service (5.5% for 20 years)					$190,000
Operation & Maintenance					$17,154
Total Annual Costs					**$207,154**
UNIT COSTS (During Amortization)					
Fort Worth					
Per Acre-Foot					$162
Per 1,000 Gallons					$0.50
Westlake					
Per Acre-Foot					$162
Per 1,000 Gallons					$0.50

Table Q-197, Continued	
Trophy Club	
Per Acre-Foot	$162
Per 1,000 Gallons	$0.50
UNIT COSTS (After Amortization)	
Fort Worth	
Per Acre-Foot	$13.40
Per 1,000 Gallons	$0.04
West Lake	
Per Acre-Foot	$13
Per 1,000 Gallons	$0.04
Trophy Club	
Per Acre-Foot	$13
Per 1,000 Gallons	$0.04
* Pipeline costs based on information provided in the Northeast Pipeline Route Study.	

Table Q-198
Trophy Club - Phase II: Increase delivery infrastructure from Ft Worth

Probable Owner: Trophy Club
Amount: 2,560 acre-ft/year

CONSTRUCTION COSTS					
TRANSMISSION FACILITIES*					
Pipelines	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline and Appurtenances	24 in.	23,760	LF		$4,638,000
ROW Easements					$812,000
Contingency (20%)					$927,600
Engineering (12%)					$668,000
Subtotal of Pipelines					**$7,045,600**
CONSTRUCTION TOTAL					**$7,045,600**
Interest During Construction	**(12 months)**				**$247,000**
TOTAL COST					**$7,292,600**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$610,000
Operation & Maintenance					$56,000
Total Annual Costs					**$666,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot					$260
Per 1,000 Gallons					$0.80
UNIT COSTS (After Amortization)					
Per Acre-Foot					$21.88
Per 1,000 Gallons					$0.07

* Pipeline costs based on information provided in the Northeast Pipeline Route Study.

Table Q-199

Watauga and North Richland Hills - Increase Delivery Infrastructure to Purchase Additional Water from Fort Worth

Probable Owner: North Richland Hills
Amount 3,323 Ac-ft/yr

Capital Costs*	**Description**	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline (30 in.)	Fort Worth Water Supply	30 in.	5,900	LF	$207	$1,219,600
40" Boring and Casing	Improvements	40 in.	500	LF	$652	$326,000
Pavement Repair			4,720	LF	$53	$250,200
New Wholesale Meter			1	LS	$265,009	$265,000
Pump Station Expansion	Watauga Pump Station	15 MGD	1	LS	$2,163,427	$2,163,400
Ground Storage Tank	Expansion	5.0 MG	1	LS	$2,915,104	$2,915,100
Subtotal						$7,139,300
Engineering and Contingencies (20%)						$1,427,860
Subtotal						$8,567,160
Eng/Survey (12%)						$1,028,059
CONSTRUCTION TOTAL						**$9,595,000**
Interest During Construction		**(12 months)**				**$336,000**
TOTAL COST						**$9,931,000**
ANNUAL COSTS						
Debt Service (5.5% for 20 years)						$831,000
Electricity ($0.09 per kwh)						$215,000
Operation & Maintenance						$167,000
Total Annual Costs						**$1,213,000**
UNIT COSTS (During Amortization)						
Per Acre-Foot						$365
Per 1,000 Gallons						$1.12
UNIT COSTS (After Amortization)						
Per Acre-Foot						$50
Per 1,000 Gallons						$0.15

* Capital Costs obtained from the North Richland Hills Capital Improvements Plan

Table Q-200
Bridgeport - Expand Capacity of Lake Intake and Pump Station

Owner: Bridgeport
Amount: 1,610 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pump Station(s)					
Pump Station and Intake Upgrades		1	LS	$558,100	$558,100
Engineering and Contingencies (35%)					$195,000
Subtotal of Pump Station(s)					**$753,100**
CONSTRUCTION TOTAL					**$753,100**
Interest During Construction			**(6 months)**		**$13,000**
TOTAL COST					**$766,100**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$64,000
Operation & Maintenance					$17,000
Total Annual Costs					**$81,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$50.31
Cost per 1000 gallons					$0.15
UNIT COSTS (After Amortization)					
Cost per ac-ft					$11
Cost per 1000 gallons					$0.03

Cost Estimate Summary
Water Supply Project Option
Sep-13 Prices

Q-201 Chico - Increase Delivery Infrastructure to Purchase Additional Water from West Wise SUD

Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518

Item	***Estimated Costs for Facilities***
Transmission Pipeline (8 in dia., 7 miles)	$1,434,000
Transmission Pump Station(s) & Storage Tank(s)	$986,000
TOTAL COST OF FACILITIES	**$2,420,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$775,000
Environmental & Archaeology Studies and Mitigation	$172,000
Land Acquisition and Surveying (17 acres)	$120,000
Interest During Construction (4% for 1 years with a 1% ROI)	$123,000
TOTAL COST OF PROJECT	**$3,610,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$302,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$36,000
Pumping Energy Costs (108690 kW-hr @ 0.09 $/kW-hr)	$10,000
Purchase of Water (369 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$348,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	369
Annual Cost of Water ($ per acft)	$943
Annual Cost of Water ($ per 1,000 gallons)	$2.89
AGG	4/9/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-202 New Fairview - Connect to and Purchase Water from Rhome*	
Cost based on ENR CCI 9552 for 41518 and *a PPI of 187 for 41518*	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (6 in dia., 5 miles)	$703,000
Transmission Pump Station(s) & Storage Tank(s)	$1,778,000
TOTAL COST OF FACILITIES	**$2,481,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$833,000
Environmental & Archaeology Studies and Mitigation	$132,000
Land Acquisition and Surveying (13 acres)	$92,000
Interest During Construction (4% for 1 years with a 1% ROI)	$124,000
TOTAL COST OF PROJECT	**$3,662,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$306,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$46,000
Pumping Energy Costs (67949 kW-hr @ 0.09 $/kW-hr)	$6,000
Purchase of Water (221 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$358,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	221
Annual Cost of Water ($ per acft)	$1,620
Annual Cost of Water ($ per 1,000 gallons)	$4.97
AMH	4/13/2015

Cost Estimate Summary Water Supply Project Option Sep-13 Prices Q-203 Newark - Connect to and Purchase Water from Rhome	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (10 in dia., 4 miles)	$909,000
Transmission Pump Station(s) & Storage Tank(s)	$826,000
TOTAL COST OF FACILITIES	**$1,735,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$562,000
Environmental & Archaeology Studies and Mitigation	$97,000
Land Acquisition and Surveying (9 acres)	$67,000
Interest During Construction (4% for 1 years with a 1% ROI)	$87,000
TOTAL COST OF PROJECT	**$2,548,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$213,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$27,000
Purchase of Water (646 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$240,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	646
Annual Cost of Water ($ per acft)	$372
Annual Cost of Water ($ per 1,000 gallons)	$1.14
AMH	4/13/2015

Table Q-204
Runaway Bay - Increase Capacity of Lake Intake

Owner: Runaway Bay
Amount: 100 Ac-Ft/Yr

CAPITAL COSTS	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Intake					
Increase Capacity of Lake Bridgeport Intake		1	LS	$36,400	$36,400
Engineering and Contingencies (35%)					$13,000
Subtotal of Intake					**$49,400**
Permitting and mitigation					$2,200
CONSTRUCTION TOTAL					**$51,600**
Interest During Construction			**(6 months)**		**$900**
TOTAL COST					**$52,500**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$4,000
Operation & Maintenance					$1,100
Total Annual Costs					**$5,100**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$50.85
Cost per 1000 gallons					$0.16
UNIT COSTS (After Amortization)					
Cost per ac-ft					$11
Cost per 1000 gallons					$0.03

Table Q-205
Wise County Manufacturing - New Wells in Trinity Aquifer
Wise County

Need	250 Ac-ft/yr	
Depth to Water	62	
Well Depth	119 ft	
Well Yield	70 gpm	113 ac-ft (peak)
Well Size	6 in	57 ac-ft (average)
Wells Needed	5	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	5	EA	$64,113	$320,600
Connection to Transmission System	5	EA	$178,605	$893,000
Engineering and Contingencies				$380,000
Subtotal of Well(s)				**$1,593,600**
Permitting and Mitigation				$15,000
Construction Total				**$1,608,600**
Interest During Construction	6 months			$28,000
Total Capital Cost				**$1,636,600**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$137,000
O&M				
Transmission	1%			$11,000
Well(s)	2.5%			$10,000
Add Chemicals etc.	81,463	$0.33 per 1000 gal		$27,300
Pumping Costs				$4,000
Total Annual Cost				**$189,300**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$757
Cost per 1000 gallons				$2.32
UNIT COSTS (After Amortization)				
Cost per ac-ft				$209
Cost per 1000 gallons				$0.64

Cost Estimate Summary ***Water Supply Project Option*** ***Sep-13 Prices*** ***Q-206 Willow Park - Connect to and Purchase Water from Fort Worth***	
Cost based on ENR CCI 9552 for 41518 and ***a PPI of 187 for 41518***	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (14 in dia., 5 miles)	$1,524,000
Transmission Pump Station(s) & Storage Tank(s)	$1,539,000
TOTAL COST OF FACILITIES	**$3,063,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$996,000
Environmental & Archaeology Studies and Mitigation	$130,000
Land Acquisition and Surveying (13 acres)	$91,000
Interest During Construction (4% for 1 years with a 1% ROI)	$150,000
TOTAL COST OF PROJECT	**$4,430,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$371,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$49,000
Pumping Energy Costs (252973 kW-hr @ 0.09 $/kW-hr)	$23,000
Purchase of Water (1562 acft/yr @ 1.96 $/acft)	$3,000
TOTAL ANNUAL COST	**$446,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	1,562
Annual Cost of Water ($ per acft)	$286
Annual Cost of Water ($ per 1,000 gallons)	$0.88
AGG	4/20/2015

Table Q-207
Leonard - Water System Improvements
Fannin County

Need	273 Ac-ft/yr	
Depth to Water	491	
Well Depth	1672 ft	
Well Yield	423 gpm	682 ac-ft (peak)
Well Size	12 in	341 ac-ft (average)
Wells Needed	1	

	Quantity	Unit	Unit Cost	Total Cost
CONSTRUCTION COSTS				
Well(s)				
Water Wells	1	EA	$936,991	$937,000
Connection to Transmission System	1	EA	$178,605	$178,600
Engineering and Contingencies				$382,000
Subtotal of Well(s)				**$1,497,600**
Elevated Storage Tank				
Elevated Storage Tank	1	LS	$740,400	$740,000
Land Acquisition	2	AC	$3,376	$7,000
Engineering and Contingencies				$259,000
Storage Subtotal				**$1,006,000**
Permitting and Mitigation				$20,000
Construction Total				**$2,523,600**
Interest During Construction	6 months			$44,000
Total Capital Cost				**$2,567,600**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$215,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$50,000
Add Chemicals etc.	88,957	$0.33 per 1000 gal		$29,800
Pumping Costs				$18,000
Total Annual Cost				**$314,800**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,153
Cost per 1000 gallons				$3.54
UNIT COSTS (After Amortization)				
Cost per ac-ft				$366
Cost per 1000 gallons				$1.12

Table Q-208
Bedford - Municipal Conservation - Water Distribution System

Owner: Bedford
Amount: 868 Ac-Ft/Yr

CAPITAL COSTS*	**Size**	**Quantity**	**Unit**	**Unit Price**	**Cost**
Pipeline	8 in.	700,000	LF	$100.00	$70,000,000
Pipeline	12 in.	90,909	LF	$110.00	$10,000,000
Water Meters		15,000	LS	$666.67	$10,000,000
CONSTRUCTION TOTAL					**$90,000,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$7,531,000
Total Annual Costs					**$7,531,000**
UNIT COSTS (During Amortization)					
Cost per ac-ft					$8,676.27
Cost per 1000 gallons					$26.63
UNIT COSTS (After Amortization)					
Cost per ac-ft					$0
Cost per 1000 gallons					$0.00
*Cost provided by Bedford					

Table Q-209
Fort Worth - Municipal Conservation - Advanced Meter Infrastructure Program

Owner: Fort Worth
Amount: 11,226 Ac-Ft/Yr

CAPITAL COSTS*	**Quantity**	**Unit**	**Unit Price**	**Cost**
2016-Planning, Design, Permitting	1	LS	$1,000,000	$1,000,000
2017-Network Installation/Pilot	1	LS	$12,000,000	$12,000,000
2018-Full Deployment	1	LS	$30,000,000	$30,000,000
2019-Full Deployment	1	LS	$27,000,000	$27,000,000
2020-Clean Up/Confirm Benefits	1	LS	$6,000,000	$6,000,000
CONSTRUCTION TOTAL				**$76,000,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$6,360,000
Total Annual Costs				**$6,360,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$566.54
Cost per 1000 gallons				$1.74
UNIT COSTS (After Amortization)				
Cost per ac-ft				$0
Cost per 1000 gallons				$0.00

*Cost provided by Fort Worth

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-210 Grayson County Manufacturing - Direct Reuse from Sherman*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (8 in dia., 10 miles)	$1,493,000
Transmission Pump Station(s) & Storage Tank(s)	$3,000,000
TOTAL COST OF FACILITIES	**$4,493,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$1,498,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$90,000
Interest During Construction (4% for 1 years with a 1% ROI)	$222,000
TOTAL COST OF PROJECT	**$6,553,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$548,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$81,000
Pumping Energy Costs (307925 kW-hr @ 0.09 $/kW-hr)	$28,000
Purchase of Water (561 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$657,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	561
Annual Cost of Water ($ per acft)	$1,171
Annual Cost of Water ($ per 1,000 gallons)	$3.59
AGG	4/28/2015

Cost Estimate Summary *Water Supply Project Option* *Sep-13 Prices* *Q-211 Grayson County SEP - Direct Reuse from Sherman*	
Cost based on ENR CCI 9552 for 41518 and a PPI of 187 for 41518	
Item	***Estimated Costs for Facilities***
Transmission Pipeline (30 in dia., 10 miles)	$7,251,000
Transmission Pump Station(s) & Storage Tank(s)	$4,062,000
TOTAL COST OF FACILITIES	**$11,313,000**
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	$3,597,000
Environmental & Archaeology Studies and Mitigation	$250,000
Land Acquisition and Surveying (24 acres)	$90,000
Interest During Construction (4% for 1 years with a 1% ROI)	$534,000
TOTAL COST OF PROJECT	**$15,784,000**
ANNUAL COST	
Debt Service (5.5 percent, 20 years)	$1,321,000
Operation and Maintenance	
Intake, Pipeline, Pump Station (1% of Cost of Facilities)	$162,000
Pumping Energy Costs (2357630 kW-hr @ 0.09 $/kW-hr)	$212,000
Purchase of Water (6548 acft/yr @ 0 $/acft)	$0
TOTAL ANNUAL COST	**$1,695,000**
Available Project Yield (acft/yr), based on a Peaking Factor of 2	6,548
Annual Cost of Water ($ per acft)	$259
Annual Cost of Water ($ per 1,000 gallons)	$0.79
AGG	4/28/2015

Table Q-212

Fort Worth - Municipal Conservation - Conservation & Condition Assessment Program (WCCAP)

Owner: Fort Worth
Amount: 9,317 Ac-Ft/Yr

CAPITAL COSTS*	**Quantity**	**Unit**	**Unit Price**	**Cost**
2016 (Year 1) Planning, Design, Permitting by segment				
SS2-28	1	LS	$378,850	$378,850
WS2-10	1	LS	$959,071	$959,071
WS2-05	1	LS	$637,367	$637,367
HOL-34	1	LS	$1,530,376	$1,530,376
HOL-40	1	LS	$2,303,281	$2,303,281
WS2-24	1	LS	$985,819	$985,819
SS2-25	1	LS	$1,459,207	$1,459,207
SS2-05	1	LS	$1,692,020	$1,692,020
SS2-06	1	LS	$1,103,440	$1,103,440
SS2-04	1	LS	$187,775	$187,775
WS3-03	1	LS	$415,306	$415,306
WS2-14	1	LS	$1,415,181	$1,415,181
Year 2 Planning, Design, Permitting	1	LS	$11,990,400	$11,990,400
Year 3 Planning, Design, Permitting	1	LS	$13,688,800	$13,688,800
Year 4 Planning, Design, Permitting	1	LS	$13,190,100	$13,190,100
Year 5 Planning, Design, Permitting	1	LS	$13,743,100	$13,743,100
Year 6 Planning, Design, Permitting	1	LS	$13,182,200	$13,182,200
Year 7 Planning, Design, Permitting	1	LS	$13,548,100	$13,548,100
Year 8 Planning, Design, Permitting	1	LS	$13,758,600	$13,758,600
Year 9 Planning, Design, Permitting	1	LS	$13,541,800	$13,541,800
Year 10 Planning, Design, Permitting	1	LS	$17,589,900	$17,589,900
Pumping upgrades	1	LS	$24,699,307	$24,699,307
CONSTRUCTION TOTAL				**$162,000,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$13,556,000
Total Annual Costs				**$13,556,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,454.97
Cost per 1000 gallons				$4.47
UNIT COSTS (After Amortization)				
Cost per ac-ft				$0
Cost per 1000 gallons				$0.00

*Cost provided by Fort Worth

Table Q-213
Euless - Service to DFW International Airport Development (Tarrant County Other)
(Alternative Strategy)

Owner: Euless
Amount: 2,000 Ac-Ft/Yr

CAPITAL COSTS*	Quantity	Unit	Unit Price	Cost
Pipeline segment 1	1	LS	$50,000	$50,000
Pipeline segment 2	1	LS	$50,000	$50,000
CONSTRUCTION TOTAL				**$100,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$8,000
Total Annual Costs				**$8,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$4.00
Cost per 1000 gallons				$0.01
UNIT COSTS (After Amortization)				
Cost per ac-ft				$0
Cost per 1000 gallons				$0.00

*Cost provided by Euless

Table Q-214
Rowlett - Water System Improvements

Owner: Rowlett
Amount: 4,125 acre-feet/year

CAPITAL COSTS*	Size	Quantity	Unit	Unit Price	Cost
Pump Station Expansion	5.8 MGD	1	LS	$2,030,000	$2,030,000
Increase Capacity of Meter and Vault		1	LS	$500,000	$500,000
Subtotal of Pump Station Expansion					**$2,530,000**
Contingency (20%)					$506,000
Engineering/Survey (12%)					$364,000
CONSTRUCTION TOTAL					**$3,400,000**
Interest During Construction (12 months)					**$119,000**
TOTAL COST					**$3,519,000**
ANNUAL COSTS					
Debt Service (5.5% for 20 years)					$294,000
Electricity ($0.09 kWh)					$90,000
Treated Water ($1.75 per 1,000 gallons)					$2,472,000
Operation & Maintenance					$76,000
Total Annual Costs					**$2,932,000**
UNIT COSTS (During Amortization)					
Per Acre-Foot of treated water					$676
Per 1,000 Gallons					$2.08
UNIT COSTS (After Amortization)					
Per Acre-Foot					$609
Per 1,000 Gallons					$1.87

* Values obtained from City of Rowlett's engineer

Table Q-215
Weston - New Wells in Woodbine Aquifer

Need	71 Ac-ft/yr	
Depth to Water	536	
Well Depth	1134	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	81 ac-ft (average)
Wells Needed	1	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	1	EA	$411,619	$412,000
Connection to Transmission System	1	EA	$178,605	$179,000
Engineering and Contingencies				$198,000
Subtotal of Well(s)				**$789,000**
Permitting and Mitigation				$7,000
Construction Total				**$796,000**
Interest During Construction	12	months		$28,000
Total Capital Cost				**$824,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$69,000
O&M				
Transmission	1%			$2,000
Well(s)	2.5%			$12,000
Add Chemicals etc.	23,135	$0.33 per 1000 gal		$7,700
Pumping Costs				$5,000
Total Annual Cost				**$95,700**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$1,347.89
Cost per 1000 gallons				$4.14
UNIT COSTS (After Amortization)				
Cost per ac-ft				$376
Cost per 1000 gallons				$1.15

Table Q-216
Kaufman County Mining - New Wells in Trinity Aquifer

Need	344 Ac-ft/yr	
Depth to Water	100	
Well Depth	150 ft	
Well Yield	100 gpm	161 ac-ft (peak)
Well Size	6 in	81 ac-ft (average)
Wells Needed	5	

CONSTRUCTION COSTS				
Well(s)	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
Water Wells	5	EA	$68,800	$344,000
Engineering and Contingencies				$120,000
Subtotal of Well(s)				**$464,000**
Permitting and Mitigation				$4,000
Construction Total				**$468,000**
Interest During Construction	12 months			$16,000
Total Capital Cost				**$484,000**
ANNUAL COSTS				
Debt Service (5.5% for 20 years)				$41,000
O&M				
Well(s)	2.5%			$10,000
Pumping Costs				$2,000
Total Annual Cost				**$53,000**
UNIT COSTS (During Amortization)				
Cost per ac-ft				$154
Cost per 1000 gallons				$0.47
UNIT COSTS (After Amortization)				
Cost per ac-ft				$35
Cost per 1000 gallons				$0.11

Appendix R

APPENDIX R

INFRASTRUCTURE FINANCING

APPENDIX R

INFRASTRUCTURE FINANCING

This appendix contains information related to Chapter 9, Infrastructure Funding Recommendations. An Infrastructure Financing Survey, developed by the TWDB, requested information from water suppliers regarding the amount of desired funding from TWDB financial assistance categories. A cover letter was provided with each survey to explain the intent of the survey. The capital cost of each water management strategy project was provided based information entered by consultants in TWDB's online regional planning database (DB17). Recipients were asked to provide updated contact information, an amount of funding requested for each TWDB category, the first year that the funding would be needed for each category, and the percent state participation in excess capacity of the project that may be required.

This appendix includes information related to infrastructure financing. Specific items included are:

- Cover letter mailed with surveys
- Example of infrastructure financing survey sent to water suppliers (first 2 pages only)
- Summary of survey responses to questionnaires

REGION C WATER PLANNING GROUP

Senate Bill One Fourth Round of Regional Water Planning - Texas Water Development Board

c/o TRA
5300 South Collins Street
Arlington, Texas 76018
P. O. Box 60
Arlington, Texas 76004
817/467-4343
817/465-0970/Fax
RegionCWPG@trinityra.org
www.regioncwater.org

July 20, 2015

Subject: Financing of Water Management Strategies in the Regional Water Plan

Dear Water Provider:

As you may know, the *2016 Initially Prepared Region C Water Plan* (IPP) is available for public review and comment. You were contacted earlier this year regarding the future water supply plans for your entity, and those future plans have been included in the IPP. A copy of the IPP can be found at www.regioncwater.org and clicking on the link at the top of the page. Information specific to your entity can be found in either Chapter 5C (Wholesale Water Providers) or Chapter 5D (Water User Groups by County).

As required by TWDB, at this time we are soliciting input on the manner in which you will be financing the projects listed in the IPP for your entity, and in particular whether you intend to seek TWDB funding for these projects. This information will assist the Texas Water Development Board in financially preparing to meet the State's water needs through their SWIFT fund (State Water Infrastructure Implementation Fund for Texas) and other funds.

Attached is a brief questionnaire developed by TWDB using information from the Region C Initially Prepared Plan. The survey includes all the projects for which you are listed as a sponsor and simply asks how much, if any, of the cost you anticipate needing from TWDB funding programs and when (what year) the funds would be needed. **Please respond to the attached questions and return by August 10, 2015 using the enclosed envelope.** If you do not intent to use TWDB funding for any of your projects, please still do return the survey indicating this information. Please note a few items:

- The projects are in alphabetical order rather than the order in which you would construct them.
- The projects listed as "Conservation, Water Loss Control" represent our estimation of replacement cost for distribution pipelines that are currently a source of excessive water losses. (This does not represent your entire pipe replacement program).
- Many project titles contain a "Q-##" that corresponds to the cost estimates shown in Appendix Q of the Region C Initially Prepared Plan. Please refer to that appendix if you would like further details on the cost estimate.

If you have any questions or want additional information, please call Dario Sanchez of CP&Y at (214)589-6940 or Amy Kaarlela of Freese & Nichols at (817)735-7438. Thank you for taking time to respond.

Sincerely,

Jo M. Puckett

Jo M. (Jody) Puckett
Chair, Region C Water Planning Group

Infrastructure Financing Survey Report

Entity Name:	FORT WORTH
Primary Planning Region:	C

Contact Information:

Name:	
Phone Number:	
Email:	
Comments:	

As part of the state water planning process, regional water planning groups recommend water supply projects for each of their respective regions. The Texas Water Development Board (TWDB) has several funding programs for water projects that support the planning, design, and construction of water supply projects with several financing options including low-interest loans and deferral of principal and interest. Texas Water Code (TAC 16.053 (q)) requires the regional water planning groups to examine the financing needed to implement the water management strategies and projects recommended in their regional plan.

This Infrastructure Financing Survey is a tool to gather information regarding how you, as a project sponsor, anticipate financing the water supply projects recommended to meet your needs in the 2016 regional water plan, including whether you, as a sponsor, intend to use financial assistance programs offered by the State of Texas and administered by the TWDB.

More information on these financial assistance programs can be found at the TWDB website at:
http://www.twdb.texas.gov/financial/index.asp

Your cooperation and responses to these questions are crucial to assisting the state in providing ongoing funding opportunities to ensure that our communities and our citizens have adequate water supplies. Note that a response to this survey is required for any entity seeking SWIFT funding for state water plan projects.

Please enter only the share of total project costs that you wish to receive through a TWDB program in the "Share of Costs" fields and do not enter a specific portion of a project cost more than once.

Projects you are designated as sponsoring in the Regional Water Plan

For each of the project(s) listed below **for which you are designated as sponsor**, please enter only the funding amounts you anticipate requesting from TWDB categories in the '**Amount**' field; enter the earliest '**Year Needed**' date that you anticipate requiring these amounts; and, enter in the '**State Ownership**' field the percent share of the overall project capacity that you anticipate the state taking initial ownership of. Note that the total amount entered into the separate funding categories may not exceed the **Project Total Capital Cost**. **Only enter the amount of funding that you expect to request from state funding programs.**

Data descriptions:
1) Planning, Design, Permitting, and Acquisition Funding: Enter portion of total costs into the 'Planning and Acquisition' category for which you anticipate applying for a low interest loan from TWDB for development efforts leading up to construction. This option includes providing funding for all pre-construction stages of the project.

2) Construction Funding: Enter portion of total costs into the 'Construction' category for which you anticipate applying for state funding to construct your project using a low interest loan from TWDB.

3) Percent State Participation in Excess Capacity of the Project: Enter the percent share of the total project capacity that will not be needed within the first 10 years of the project life. For some larger projects that qualify, the state may acquire a temporary ownership interest in some percentage portion of the project which allows entities to optimally size a regional project with excess capacity that won't be needed until the future. The entity buys back the state's portion of the facility over time. Principal and interest are deferred on the state-owned portion of project.

Water Management Strategy-Project Name:	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	**Project Total Capital Cost:**	$ 80,176,073
1) Planning, Design, Permitting & Acquisition Funding	Amount: $	Year Needed:	
2) Construction Funding	Amount: $	Year Needed:	
Total Anticipated State Funding Assistance:	$ *sum above*		
3) Percent State Participation in Owning Excess Capacity		State Ownership:	%

Water Management Strategy-Project Name:	FORT WORTH - 50 MGD EXPANSION 1 Q-13	**Project Total Capital Cost:**	$ 93,960,000
1) Planning, Design, Permitting & Acquisition Funding	Amount: $	Year Needed:	
2) Construction Funding	Amount: $	Year Needed:	
Total Anticipated State Funding Assistance:	$ *sum above*		
3) Percent State Participation in Owning Excess Capacity		State Ownership:	%

Water Management Strategy-Project Name:	FORT WORTH - 50 MGD EXPANSION 2 Q-13	**Project Total Capital Cost:**	$ 93,960,000
1) Planning, Design, Permitting & Acquisition Funding	Amount: $	Year Needed:	
2) Construction Funding	Amount: $	Year Needed:	
Total Anticipated State Funding Assistance:	$ *sum above*		
3) Percent State Participation in Owning Excess Capacity		State Ownership:	%

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
ABLES SPRINGS WSC	C	CONSERVATION, WATER LOSS CONTROL - ABLES SPRINGS WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				155	832	1
ABLES SPRINGS WSC	C	CONSERVATION, WATER LOSS CONTROL - ABLES SPRINGS WSC	C	CONSTRUCTION FUNDING				155	832	2
ABLES SPRINGS WSC	C	CONSERVATION, WATER LOSS CONTROL - ABLES SPRINGS WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				155	832	3
ADDISON	C	CONSERVATION, WATER LOSS CONTROL - ADDISON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				157	1279	1
ADDISON	C	CONSERVATION, WATER LOSS CONTROL - ADDISON	C	CONSTRUCTION FUNDING				157	1279	2
ADDISON	C	CONSERVATION, WATER LOSS CONTROL - ADDISON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				157	1279	3
ALEDO	C	ALEDO - PARALLEL PIPELINE & PUMP STATION EXPANSION TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-169	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			162	1099	1
ALEDO	C	ALEDO - PARALLEL PIPELINE & PUMP STATION EXPANSION TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-169	C	CONSTRUCTION FUNDING	$0.00			162	1099	2
ALEDO	C	ALEDO - PARALLEL PIPELINE & PUMP STATION EXPANSION TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-169	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			162	1099	3
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			162	1280	1
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	CONSTRUCTION FUNDING	$0.00			162	1280	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			162	1280	3
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			164	1281	1
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	CONSTRUCTION FUNDING	$0.00			164	1281	2
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			164	1281	3
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				171	1282	1
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	CONSTRUCTION FUNDING				171	1282	2
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				171	1282	3
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			177	1283	1
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	CONSTRUCTION FUNDING	$0.00			177	1283	2
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			177	1283	3
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1284	1
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	CONSTRUCTION FUNDING				178	1284	2
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1284	3
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1101	1
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				178	1101	2
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1101	3
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2931	1285	1
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	CONSTRUCTION FUNDING	"blank"			2931	1285	2
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2931	1285	3
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2931	1101	1
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING	"blank"			2931	1101	2
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2931	1101	3
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				179	1286	1
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	CONSTRUCTION FUNDING				179	1286	2
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				179	1286	3
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				179	1101	1
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				179	1101	2
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				179	1101	3
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				188	1287	1
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	CONSTRUCTION FUNDING				188	1287	2
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				188	1287	3
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				189	1288	1
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	CONSTRUCTION FUNDING				189	1288	2
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				189	1288	3
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				189	1564	1
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	CONSTRUCTION FUNDING				189	1564	2
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				189	1564	3
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				190	1289	1
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	CONSTRUCTION FUNDING				190	1289	2
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				190	1289	3
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				195	1290	1
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	CONSTRUCTION FUNDING				195	1290	2
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				195	1290	3
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				195	1565	1
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	CONSTRUCTION FUNDING				195	1565	2
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				195	1565	3
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			197	1291	1
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	CONSTRUCTION FUNDING	$0.00			197	1291	2
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			197	1291	3
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				198	1292	1
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	CONSTRUCTION FUNDING				198	1292	2
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				198	1292	3
AZLE	C	AZLE - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				199	859	1
AZLE	C	AZLE - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				199	859	2
AZLE	C	AZLE - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				199	859	3
AZLE	C	CONSERVATION, WATER LOSS CONTROL - AZLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				199	1293	1
AZLE	C	CONSERVATION, WATER LOSS CONTROL - AZLE	C	CONSTRUCTION FUNDING				199	1293	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
AZLE	C	CONSERVATION, WATER LOSS CONTROL - AZLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				199	1293	3
BALCH SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - BALCH SPRINGS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				203	1294	1
BALCH SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - BALCH SPRINGS	C	CONSTRUCTION FUNDING				203	1294	2
BALCH SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - BALCH SPRINGS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				203	1294	3
BARDWELL	C	CONSERVATION, WATER LOSS CONTROL - BARDWELL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				208	1295	1
BARDWELL	C	CONSERVATION, WATER LOSS CONTROL - BARDWELL	C	CONSTRUCTION FUNDING				208	1295	2
BARDWELL	C	CONSERVATION, WATER LOSS CONTROL - BARDWELL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				208	1295	3
BARTONVILLE	C	CONSERVATION, WATER LOSS CONTROL - BARTONVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				211	1296	1
BARTONVILLE	C	CONSERVATION, WATER LOSS CONTROL - BARTONVILLE	C	CONSTRUCTION FUNDING				211	1296	2
BARTONVILLE	C	CONSERVATION, WATER LOSS CONTROL - BARTONVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				211	1296	3
BEDFORD	C	BEDFORD - MUNICIPAL CONSERVATION - WATER DISTRIBUTION SYSTEM CONSERVATION Q-208	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			221	1141	1
BEDFORD	C	BEDFORD - MUNICIPAL CONSERVATION - WATER DISTRIBUTION SYSTEM CONSERVATION Q-208	C	CONSTRUCTION FUNDING	$90,000,000.00	2016		221	1141	2
BEDFORD	C	BEDFORD - MUNICIPAL CONSERVATION - WATER DISTRIBUTION SYSTEM CONSERVATION Q-208	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			221	1141	3
BEDFORD	C	CONSERVATION, WATER LOSS CONTROL - BEDFORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			221	1297	1
BEDFORD	C	CONSERVATION, WATER LOSS CONTROL - BEDFORD	C	CONSTRUCTION FUNDING	$0.00			221	1297	2
BEDFORD	C	CONSERVATION, WATER LOSS CONTROL - BEDFORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			221	1297	3
BELLS	C	BELLS - NEW WELL IN WOODBINE AQUIFER Q-136	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				226	1066	1
BELLS	C	BELLS - NEW WELL IN WOODBINE AQUIFER Q-136	C	CONSTRUCTION FUNDING				226	1066	2
BELLS	C	BELLS - NEW WELL IN WOODBINE AQUIFER Q-136	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				226	1066	3
BELLS	C	CONSERVATION, WATER LOSS CONTROL - BELLS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				226	1298	1
BELLS	C	CONSERVATION, WATER LOSS CONTROL - BELLS	C	CONSTRUCTION FUNDING				226	1298	2
BELLS	C	CONSERVATION, WATER LOSS CONTROL - BELLS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				226	1298	3
BENBROOK	C	BENBROOK - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				230	860	1
BENBROOK	C	BENBROOK - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				230	860	2
BENBROOK	C	BENBROOK - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				230	860	3
BENBROOK	C	CONSERVATION, IRRIGATION RESTRICTION - BENBROOK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				230	1577	1
BENBROOK	C	CONSERVATION, IRRIGATION RESTRICTION - BENBROOK	C	CONSTRUCTION FUNDING				230	1577	2
BENBROOK	C	CONSERVATION, IRRIGATION RESTRICTION - BENBROOK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				230	1577	3
BENBROOK	C	CONSERVATION, WATER LOSS CONTROL - BENBROOK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				230	1299	1
BENBROOK	C	CONSERVATION, WATER LOSS CONTROL - BENBROOK	C	CONSTRUCTION FUNDING				230	1299	2
BENBROOK	C	CONSERVATION, WATER LOSS CONTROL - BENBROOK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				230	1299	3
BENBROOK	C	CONSERVATION, WATER WASTE PROHIBITION - BENBROOK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				230	1566	1
BENBROOK	C	CONSERVATION, WATER WASTE PROHIBITION - BENBROOK	C	CONSTRUCTION FUNDING				230	1566	2
BENBROOK	C	CONSERVATION, WATER WASTE PROHIBITION - BENBROOK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				230	1566	3
BLACKLAND WSC	C	BLACKLAND WSC - DIRECT CONNECT TO NTMWD AND PURCHASE ADDITIONAL WATER FROM NTMWD Q-179	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				246	1109	1
BLACKLAND WSC	C	BLACKLAND WSC - DIRECT CONNECT TO NTMWD AND PURCHASE ADDITIONAL WATER FROM NTMWD Q-179	C	CONSTRUCTION FUNDING				246	1109	2
BLACKLAND WSC	C	BLACKLAND WSC - DIRECT CONNECT TO NTMWD AND PURCHASE ADDITIONAL WATER FROM NTMWD Q-179	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				246	1109	3
BLACKLAND WSC	C	CONSERVATION, WATER LOSS CONTROL - BLACKLAND WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				246	1302	1
BLACKLAND WSC	C	CONSERVATION, WATER LOSS CONTROL - BLACKLAND WSC	C	CONSTRUCTION FUNDING				246	1302	2
BLACKLAND WSC	C	CONSERVATION, WATER LOSS CONTROL - BLACKLAND WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				246	1302	3
BLOOMING GROVE	C	BLOOMING GROVE - NEW WELL IN TRINITY AQUIFER Q-164	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				248	1094	1
BLOOMING GROVE	C	BLOOMING GROVE - NEW WELL IN TRINITY AQUIFER Q-164	C	CONSTRUCTION FUNDING				248	1094	2
BLOOMING GROVE	C	BLOOMING GROVE - NEW WELL IN TRINITY AQUIFER Q-164	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				248	1094	3
BLOOMING GROVE	C	CONSERVATION, WATER LOSS CONTROL - BLOOMING GROVE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				248	1303	1
BLOOMING GROVE	C	CONSERVATION, WATER LOSS CONTROL - BLOOMING GROVE	C	CONSTRUCTION FUNDING				248	1303	2
BLOOMING GROVE	C	CONSERVATION, WATER LOSS CONTROL - BLOOMING GROVE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				248	1303	3
BLUE MOUND	C	CONSERVATION, WATER LOSS CONTROL - BLUE MOUND	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			251	1304	1
BLUE MOUND	C	CONSERVATION, WATER LOSS CONTROL - BLUE MOUND	C	CONSTRUCTION FUNDING	$0.00			251	1304	2
BLUE MOUND	C	CONSERVATION, WATER LOSS CONTROL - BLUE MOUND	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			251	1304	3
BLUE RIDGE	C	BLUE RIDGE - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-69	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				252	999	1
BLUE RIDGE	C	BLUE RIDGE - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-69	C	CONSTRUCTION FUNDING				252	999	2
BLUE RIDGE	C	BLUE RIDGE - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-69	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				252	999	3
BLUE RIDGE	C	BLUE RIDGE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-70	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				252	1000	1
BLUE RIDGE	C	BLUE RIDGE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-70	C	CONSTRUCTION FUNDING				252	1000	2
BLUE RIDGE	C	BLUE RIDGE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-70	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				252	1000	3
BLUE RIDGE	C	CONSERVATION, WATER LOSS CONTROL - BLUE RIDGE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				252	1305	1
BLUE RIDGE	C	CONSERVATION, WATER LOSS CONTROL - BLUE RIDGE	C	CONSTRUCTION FUNDING				252	1305	2
BLUE RIDGE	C	CONSERVATION, WATER LOSS CONTROL - BLUE RIDGE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				252	1305	3
BOLIVAR WSC	C	CONSERVATION, WATER LOSS CONTROL - BOLIVAR WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				255	1306	1
BOLIVAR WSC	C	CONSERVATION, WATER LOSS CONTROL - BOLIVAR WSC	C	CONSTRUCTION FUNDING				255	1306	2
BOLIVAR WSC	C	CONSERVATION, WATER LOSS CONTROL - BOLIVAR WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				255	1306	3
BONHAM	C	CONSERVATION, WATER LOSS CONTROL - BONHAM	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$9,000.00	2017		256	1307	1
BONHAM	C	CONSERVATION, WATER LOSS CONTROL - BONHAM	C	CONSTRUCTION FUNDING	$82,630.00	2018		256	1307	2
BONHAM	C	CONSERVATION, WATER LOSS CONTROL - BONHAM	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			256	1307	3
BOYD	C	CONSERVATION, WATER LOSS CONTROL - BOYD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				260	1308	1
BOYD	C	CONSERVATION, WATER LOSS CONTROL - BOYD	C	CONSTRUCTION FUNDING				260	1308	2
BOYD	C	CONSERVATION, WATER LOSS CONTROL - BOYD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				260	1308	3
BRIDGEPORT	C	BRIDGEPORT - EXPAND CAPACITY OF LAKE INTAKE AND PUMP STATION Q-200	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				272	1133	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
BRIDGEPORT	C	BRIDGEPORT - EXPAND CAPACITY OF LAKE INTAKE AND PUMP STATION Q-200	C	CONSTRUCTION FUNDING				272	1133	2
BRIDGEPORT	C	BRIDGEPORT - EXPAND CAPACITY OF LAKE INTAKE AND PUMP STATION Q-200	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				272	1133	3
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				272	861	1
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				272	861	2
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				272	861	3
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				272	862	1
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				272	862	2
BRIDGEPORT	C	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				272	862	3
BRIDGEPORT	C	CONSERVATION, WATER LOSS CONTROL - BRIDGEPORT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				272	1310	1
BRIDGEPORT	C	CONSERVATION, WATER LOSS CONTROL - BRIDGEPORT	C	CONSTRUCTION FUNDING				272	1310	2
BRIDGEPORT	C	CONSERVATION, WATER LOSS CONTROL - BRIDGEPORT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				272	1310	3
BRYSON	C	CONSERVATION, WATER LOSS CONTROL - BRYSON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				284	1311	1
BRYSON	C	CONSERVATION, WATER LOSS CONTROL - BRYSON	C	CONSTRUCTION FUNDING				284	1311	2
BRYSON	C	CONSERVATION, WATER LOSS CONTROL - BRYSON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				284	1311	3
BUENA VISTA - BETHEL SUD	C	CONSERVATION, WATER LOSS CONTROL - BUENA VISTA - BETHEL SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			286	1312	1
BUENA VISTA - BETHEL SUD	C	CONSERVATION, WATER LOSS CONTROL - BUENA VISTA - BETHEL SUD	C	CONSTRUCTION FUNDING	"blank"			286	1312	2
BUENA VISTA - BETHEL SUD	C	CONSERVATION, WATER LOSS CONTROL - BUENA VISTA - BETHEL SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			286	1312	3
CARROLLTON	C	CONSERVATION, WATER LOSS CONTROL - CARROLLTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			305	1315	1
CARROLLTON	C	CONSERVATION, WATER LOSS CONTROL - CARROLLTON	C	CONSTRUCTION FUNDING	$0.00			305	1315	2
CARROLLTON	C	CONSERVATION, WATER LOSS CONTROL - CARROLLTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			305	1315	3
CEDAR HILL	C	CONSERVATION, WATER LOSS CONTROL - CEDAR HILL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				23	1317	1
CEDAR HILL	C	CONSERVATION, WATER LOSS CONTROL - CEDAR HILL	C	CONSTRUCTION FUNDING				23	1317	2
CEDAR HILL	C	CONSERVATION, WATER LOSS CONTROL - CEDAR HILL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				23	1317	3
CEDAR HILL	C	CONSERVATION, WATER WASTE PROHIBITION - CEDAR HILL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				23	1567	1
CEDAR HILL	C	CONSERVATION, WATER WASTE PROHIBITION - CEDAR HILL	C	CONSTRUCTION FUNDING				23	1567	2
CEDAR HILL	C	CONSERVATION, WATER WASTE PROHIBITION - CEDAR HILL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				23	1567	3
CELINA	C	CELINA - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-71	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				309	1001	1
CELINA	C	CELINA - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-71	C	CONSTRUCTION FUNDING				309	1001	2
CELINA	C	CELINA - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-71	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				309	1001	3
CELINA	C	CONSERVATION, WATER LOSS CONTROL - CELINA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				309	1318	1
CELINA	C	CONSERVATION, WATER LOSS CONTROL - CELINA	C	CONSTRUCTION FUNDING				309	1318	2
CELINA	C	CONSERVATION, WATER LOSS CONTROL - CELINA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				309	1318	3
CHATFIELD WSC	C	CHATFIELD WSC - WATER SYSTEM IMPROVEMENTS Q-165	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				315	1095	1
CHATFIELD WSC	C	CHATFIELD WSC - WATER SYSTEM IMPROVEMENTS Q-165	C	CONSTRUCTION FUNDING				315	1095	2
CHATFIELD WSC	C	CHATFIELD WSC - WATER SYSTEM IMPROVEMENTS Q-165	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				315	1095	3
CHATFIELD WSC	C	CONSERVATION, WATER LOSS CONTROL - CHATFIELD WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				315	1319	1
CHATFIELD WSC	C	CONSERVATION, WATER LOSS CONTROL - CHATFIELD WSC	C	CONSTRUCTION FUNDING				315	1319	2
CHATFIELD WSC	C	CONSERVATION, WATER LOSS CONTROL - CHATFIELD WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				315	1319	3
CHICO	C	CHICO - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM WEST WISE SUD Q-201	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				316	1134	1
CHICO	C	CHICO - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM WEST WISE SUD Q-201	C	CONSTRUCTION FUNDING				316	1134	2
CHICO	C	CHICO - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM WEST WISE SUD Q-201	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				316	1134	3
CHICO	C	CONSERVATION, WATER LOSS CONTROL - CHICO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				316	1320	1
CHICO	C	CONSERVATION, WATER LOSS CONTROL - CHICO	C	CONSTRUCTION FUNDING				316	1320	2
CHICO	C	CONSERVATION, WATER LOSS CONTROL - CHICO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				316	1320	3
COCKRELL HILL	C	CONSERVATION, WATER LOSS CONTROL - COCKRELL HILL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				339	1321	1
COCKRELL HILL	C	CONSERVATION, WATER LOSS CONTROL - COCKRELL HILL	C	CONSTRUCTION FUNDING				339	1321	2
COCKRELL HILL	C	CONSERVATION, WATER LOSS CONTROL - COCKRELL HILL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				339	1321	3
COLLEGE MOUND WSC	C	COLLEGE MOUND - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM TERRELL Q-153	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				342	1083	1
COLLEGE MOUND WSC	C	COLLEGE MOUND - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM TERRELL Q-153	C	CONSTRUCTION FUNDING				342	1083	2
COLLEGE MOUND WSC	C	COLLEGE MOUND - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM TERRELL Q-153	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				342	1083	3
COLLEGE MOUND WSC	C	CONSERVATION, WATER LOSS CONTROL - COLLEGE MOUND WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				342	1322	1
COLLEGE MOUND WSC	C	CONSERVATION, WATER LOSS CONTROL - COLLEGE MOUND WSC	C	CONSTRUCTION FUNDING				342	1322	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	CONSTRUCTION FUNDING	$0.00			162	1280	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			162	1280	3
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			164	1281	1
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	CONSTRUCTION FUNDING	$0.00			164	1281	2
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			164	1281	3
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				171	1282	1
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	CONSTRUCTION FUNDING				171	1282	2
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				171	1282	3
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			177	1283	1
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	CONSTRUCTION FUNDING	$0.00			177	1283	2
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			177	1283	3
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1284	1
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	CONSTRUCTION FUNDING				178	1284	2
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1284	3
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1101	1
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				178	1101	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
COPPELL	C	CONSERVATION, WATER LOSS CONTROL - COPPELL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				359	1328	1
COPPELL	C	CONSERVATION, WATER LOSS CONTROL - COPPELL	C	CONSTRUCTION FUNDING				359	1328	2
COPPELL	C	CONSERVATION, WATER LOSS CONTROL - COPPELL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				359	1328	3
COPPER CANYON	C	CONSERVATION, WATER LOSS CONTROL - COPPER CANYON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				360	1329	1
COPPER CANYON	C	CONSERVATION, WATER LOSS CONTROL - COPPER CANYON	C	CONSTRUCTION FUNDING				360	1329	2
COPPER CANYON	C	CONSERVATION, WATER LOSS CONTROL - COPPER CANYON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				360	1329	3
CORBET WSC	C	CONSERVATION, WATER LOSS CONTROL - CORBET WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2815	1330	1
CORBET WSC	C	CONSERVATION, WATER LOSS CONTROL - CORBET WSC	C	CONSTRUCTION FUNDING	"blank"			2815	1330	2
CORBET WSC	C	CONSERVATION, WATER LOSS CONTROL - CORBET WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2815	1330	3
CORINTH	C	CONSERVATION, IRRIGATION RESTRICTION - CORINTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				362	1578	1
CORINTH	C	CONSERVATION, IRRIGATION RESTRICTION - CORINTH	C	CONSTRUCTION FUNDING				362	1578	2
CORINTH	C	CONSERVATION, IRRIGATION RESTRICTION - CORINTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				362	1578	3
CORINTH	C	CONSERVATION, WATER LOSS CONTROL - CORINTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				362	1331	1
CORINTH	C	CONSERVATION, WATER LOSS CONTROL - CORINTH	C	CONSTRUCTION FUNDING				362	1331	2
CORINTH	C	CONSERVATION, WATER LOSS CONTROL - CORINTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				362	1331	3
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2020) Q-96	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				362	1026	1
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2020) Q-96	C	CONSTRUCTION FUNDING				362	1026	2
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2020) Q-96	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				362	1026	3
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2030) Q-97	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				362	1027	1
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2030) Q-97	C	CONSTRUCTION FUNDING				362	1027	2
CORINTH	C	CORINTH - NEW WELL IN TRINITY AQUIFER (2030) Q-97	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				362	1027	3
CORINTH	C	CORINTH - UPGRADE EXISTING WELL Q-98	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				362	1028	1
CORINTH	C	CORINTH - UPGRADE EXISTING WELL Q-98	C	CONSTRUCTION FUNDING				362	1028	2
CORINTH	C	CORINTH - UPGRADE EXISTING WELL Q-98	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				362	1028	3
CORSICANA	C	CONSERVATION, WATER LOSS CONTROL - CORSICANA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			33	1332	1
CORSICANA	C	CONSERVATION, WATER LOSS CONTROL - CORSICANA	C	CONSTRUCTION FUNDING	$240,918.00	2020		33	1332	2
CORSICANA	C	CONSERVATION, WATER LOSS CONTROL - CORSICANA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			33	1332	3
CORSICANA	C	CORSICANA - NEW 8 MGD WATER TREATMENT PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			33	853	1
CORSICANA	C	CORSICANA - NEW 8 MGD WATER TREATMENT PLANT Q-12	C	CONSTRUCTION FUNDING	$37,370,000.00	2020		33	853	2
CORSICANA	C	CORSICANA - NEW 8 MGD WATER TREATMENT PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			33	853	3
CORSICANA	C	CORSICANA - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$1,800,000.00	2034		33	863	1
CORSICANA	C	CORSICANA - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING	$19,889,000.00	2035		33	863	2
CORSICANA	C	CORSICANA - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			33	863	3
COUNTY-OTHER, COLLIN	C	COLLIN COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-73	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			409	1003	1
COUNTY-OTHER, COLLIN	C	COLLIN COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-73	C	CONSTRUCTION FUNDING	$0.00			409	1003	2
COUNTY-OTHER, COLLIN	C	COLLIN COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-73	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			409	1003	3
COUNTY-OTHER, COLLIN	C	CONSERVATION, WATER LOSS CONTROL - COLLIN COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			409	1548	1
COUNTY-OTHER, COLLIN	C	CONSERVATION, WATER LOSS CONTROL - COLLIN COUNTY	C	CONSTRUCTION FUNDING	$0.00			409	1548	2
COUNTY-OTHER, COLLIN	C	CONSERVATION, WATER LOSS CONTROL - COLLIN COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			409	1548	3
COUNTY-OTHER, COOKE	C	CONSERVATION, WATER LOSS CONTROL - COOKE COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				415	1549	1
COUNTY-OTHER, COOKE	C	CONSERVATION, WATER LOSS CONTROL - COOKE COUNTY	C	CONSTRUCTION FUNDING				415	1549	2
COUNTY-OTHER, COOKE	C	CONSERVATION, WATER LOSS CONTROL - COOKE COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				415	1549	3
COUNTY-OTHER, DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				423	1550	1
COUNTY-OTHER, DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS COUNTY	C	CONSTRUCTION FUNDING				423	1550	2
COUNTY-OTHER, DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				423	1550	3
COUNTY-OTHER, DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			427	1551	1
COUNTY-OTHER, DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY	C	CONSTRUCTION FUNDING	$0.00			427	1551	2
COUNTY-OTHER, DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			427	1551	3
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-101	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			427	1031	1
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-101	C	CONSTRUCTION FUNDING	$0.00			427	1031	2
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-101	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			427	1031	3
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN TRINITY AQUIFER Q-102	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			427	1032	1
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN TRINITY AQUIFER Q-102	C	CONSTRUCTION FUNDING	$0.00			427	1032	2
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER - NEW WELL IN TRINITY AQUIFER Q-102	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			427	1032	3
COUNTY-OTHER, ELLIS	C	CONSERVATION, WATER LOSS CONTROL - ELLIS COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				436	1552	1
COUNTY-OTHER, ELLIS	C	CONSERVATION, WATER LOSS CONTROL - ELLIS COUNTY	C	CONSTRUCTION FUNDING				436	1552	2
COUNTY-OTHER, ELLIS	C	CONSERVATION, WATER LOSS CONTROL - ELLIS COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				436	1552	3
COUNTY-OTHER, FANNIN	C	CONSERVATION, WATER LOSS CONTROL - FANNIN COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				440	1553	1
COUNTY-OTHER, FANNIN	C	CONSERVATION, WATER LOSS CONTROL - FANNIN COUNTY	C	CONSTRUCTION FUNDING				440	1553	2
COUNTY-OTHER, FANNIN	C	CONSERVATION, WATER LOSS CONTROL - FANNIN COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				440	1553	3
COUNTY-OTHER, FREESTONE	C	CONSERVATION, WATER LOSS CONTROL - FREESTONE COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				447	1554	1
COUNTY-OTHER, FREESTONE	C	CONSERVATION, WATER LOSS CONTROL - FREESTONE COUNTY	C	CONSTRUCTION FUNDING				447	1554	2
COUNTY-OTHER, FREESTONE	C	CONSERVATION, WATER LOSS CONTROL - FREESTONE COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				447	1554	3
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-134	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				447	1064	1
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-134	C	CONSTRUCTION FUNDING				447	1064	2
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-134	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				447	1064	3
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CO Q-133	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				447	1063	1
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CO Q-133	C	CONSTRUCTION FUNDING				447	1063	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
COUNTY-OTHER, FREESTONE	C	FREESTONE COUNTY OTHER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CO Q-133	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				447	1063	3
COUNTY-OTHER, GRAYSON	C	CONSERVATION, WATER LOSS CONTROL - GRAYSON COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				457	1555	1
COUNTY-OTHER, GRAYSON	C	CONSERVATION, WATER LOSS CONTROL - GRAYSON COUNTY	C	CONSTRUCTION FUNDING				457	1555	2
COUNTY-OTHER, GRAYSON	C	CONSERVATION, WATER LOSS CONTROL - GRAYSON COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				457	1555	3
COUNTY-OTHER, JACK	C	CONSERVATION, WATER LOSS CONTROL - JACK COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				485	1557	1
COUNTY-OTHER, JACK	C	CONSERVATION, WATER LOSS CONTROL - JACK COUNTY	C	CONSTRUCTION FUNDING				485	1557	2
COUNTY-OTHER, JACK	C	CONSERVATION, WATER LOSS CONTROL - JACK COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				485	1557	3
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM JACKSBORO Q-151	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				485	1081	1
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM JACKSBORO Q-151	C	CONSTRUCTION FUNDING				485	1081	2
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM JACKSBORO Q-151	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				485	1081	3
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM WALNUT CREEK SUD Q-152	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				485	1082	1
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM WALNUT CREEK SUD Q-152	C	CONSTRUCTION FUNDING				485	1082	2
COUNTY-OTHER, JACK	C	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM WALNUT CREEK SUD Q-152	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				485	1082	3
COUNTY-OTHER, KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				495	1558	1
COUNTY-OTHER, KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN COUNTY	C	CONSTRUCTION FUNDING				495	1558	2
COUNTY-OTHER, KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				495	1558	3
COUNTY-OTHER, KAUFMAN	C	KAUFMAN COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-149	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				495	1079	1
COUNTY-OTHER, KAUFMAN	C	KAUFMAN COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-149	C	CONSTRUCTION FUNDING				495	1079	2
COUNTY-OTHER, KAUFMAN	C	KAUFMAN COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-149	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				495	1079	3
COUNTY-OTHER, NAVARRO	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				541	1559	1
COUNTY-OTHER, NAVARRO	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO COUNTY	C	CONSTRUCTION FUNDING				541	1559	2
COUNTY-OTHER, NAVARRO	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				541	1559	3
COUNTY-OTHER, PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				550	1560	1
COUNTY-OTHER, PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY	C	CONSTRUCTION FUNDING				550	1560	2
COUNTY-OTHER, PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				550	1560	3
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-174	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				550	1104	1
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-174	C	CONSTRUCTION FUNDING				550	1104	2
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-174	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				550	1104	3
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - NEW WELLS IN TRINITY AQUIFER Q-173	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				550	1103	1
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - NEW WELLS IN TRINITY AQUIFER Q-173	C	CONSTRUCTION FUNDING				550	1103	2
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER - NEW WELLS IN TRINITY AQUIFER Q-173	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				550	1103	3
COUNTY-OTHER, ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			565	1561	1
COUNTY-OTHER, ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL COUNTY	C	CONSTRUCTION FUNDING	$0.00			565	1561	2
COUNTY-OTHER, ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			565	1561	3
COUNTY-OTHER, TARRANT	C	CONSERVATION, WATER LOSS CONTROL - TARRANT COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				586	1562	1
COUNTY-OTHER, TARRANT	C	CONSERVATION, WATER LOSS CONTROL - TARRANT COUNTY	C	CONSTRUCTION FUNDING				586	1562	2
COUNTY-OTHER, TARRANT	C	CONSERVATION, WATER LOSS CONTROL - TARRANT COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				586	1562	3
COUNTY-OTHER, WISE	C	CONSERVATION, WATER LOSS CONTROL - WISE COUNTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				615	1563	1
COUNTY-OTHER, WISE	C	CONSERVATION, WATER LOSS CONTROL - WISE COUNTY	C	CONSTRUCTION FUNDING				615	1563	2
COUNTY-OTHER, WISE	C	CONSERVATION, WATER LOSS CONTROL - WISE COUNTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				615	1563	3
CRANDALL	C	CONSERVATION, WATER LOSS CONTROL - CRANDALL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				622	1333	1
CRANDALL	C	CONSERVATION, WATER LOSS CONTROL - CRANDALL	C	CONSTRUCTION FUNDING				622	1333	2
CRANDALL	C	CONSERVATION, WATER LOSS CONTROL - CRANDALL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				622	1333	3
CROSS ROADS	C	CONSERVATION, WATER LOSS CONTROL - CROSS ROADS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				632	1335	1
CROSS ROADS	C	CONSERVATION, WATER LOSS CONTROL - CROSS ROADS	C	CONSTRUCTION FUNDING				632	1335	2
CROSS ROADS	C	CONSERVATION, WATER LOSS CONTROL - CROSS ROADS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				632	1335	3
CROSS TIMBERS WSC	C	CROSS TIMBERS WSC - INFRASTRUCTURE IMPROVEMENTS Q-99	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			212	1029	1
CROSS TIMBERS WSC	C	CROSS TIMBERS WSC - INFRASTRUCTURE IMPROVEMENTS Q-99	C	CONSTRUCTION FUNDING	$0.00			212	1029	2
CROSS TIMBERS WSC	C	CROSS TIMBERS WSC - INFRASTRUCTURE IMPROVEMENTS Q-99	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			212	1029	3
CROWLEY	C	CONSERVATION, WATER LOSS CONTROL - CROWLEY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				634	1336	1
CROWLEY	C	CONSERVATION, WATER LOSS CONTROL - CROWLEY	C	CONSTRUCTION FUNDING				634	1336	2
CROWLEY	C	CONSERVATION, WATER LOSS CONTROL - CROWLEY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				634	1336	3
CROWLEY	C	CROWLEY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-187	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				634	1117	1
CROWLEY	C	CROWLEY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-187	C	CONSTRUCTION FUNDING				634	1117	2
CROWLEY	C	CROWLEY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-187	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				634	1117	3
CULLEOKA WSC	C	CONSERVATION, WATER LOSS CONTROL - CULLEOKA WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			639	1337	1
CULLEOKA WSC	C	CONSERVATION, WATER LOSS CONTROL - CULLEOKA WSC	C	CONSTRUCTION FUNDING	$0.00			639	1337	2
CULLEOKA WSC	C	CONSERVATION, WATER LOSS CONTROL - CULLEOKA WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			639	1337	3
DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			34	1338	1
DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS	C	CONSTRUCTION FUNDING	"blank"			34	1338	2
DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			34	1338	3
DALLAS	C	DWU - CONNECT LAKE PALESTINE Q-36	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"delete"			34	966	1
DALLAS	C	DWU - CONNECT LAKE PALESTINE Q-36	C	CONSTRUCTION FUNDING	"delete"			34	966	2
DALLAS	C	DWU - CONNECT LAKE PALESTINE Q-36	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"delete"			34	966	3
DALLAS	C	DWU - CONNECT TO BACHMAN Q-37	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$95,193,000.00	2016		34	967	1
DALLAS	C	DWU - CONNECT TO BACHMAN Q-37	C	CONSTRUCTION FUNDING	$124,562,000.00	2023		34	967	2
DALLAS	C	DWU - CONNECT TO BACHMAN Q-37	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	967	3
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2020 NEW WATER PLANT Q-40	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			34	1155	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2020 NEW WATER PLANT Q-40	C	CONSTRUCTION FUNDING	"blank"			34	1155	2
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2020 NEW WATER PLANT Q-40	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			34	1155	3
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2025 WTP EXPANSIONS Q-40	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	1156	1
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2025 WTP EXPANSIONS Q-40	C	CONSTRUCTION FUNDING	$257,000,000.00	2018		34	1156	2
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2025 WTP EXPANSIONS Q-40	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	1156	3
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2035 WTP EXPANSIONS Q-40	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	1157	1
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2035 WTP EXPANSIONS Q-40	C	CONSTRUCTION FUNDING	$240,000,000.00	2024		34	1157	2
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2035 WTP EXPANSIONS Q-40	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	1157	3
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2045 WTP EXPANSIONS Q-40	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	1158	1
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2045 WTP EXPANSIONS Q-40	C	CONSTRUCTION FUNDING	$434,000,000.00	2030		34	1158	2
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2045 WTP EXPANSIONS Q-40	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	1158	3
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2058 WTP EXPANSIONS Q-40	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	1160	1
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2058 WTP EXPANSIONS Q-40	C	CONSTRUCTION FUNDING	$434,000,000.00	2045		34	1160	2
DALLAS	C	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2058 WTP EXPANSIONS Q-40	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	1160	3
DALLAS	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"delete"			34	977	1
DALLAS	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	CONSTRUCTION FUNDING	"delete"			34	977	2
DALLAS	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"delete"			34	977	3
DALLAS	C	DWU - LAKE COLUMBIA Q-39	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	969	1
DALLAS	C	DWU - LAKE COLUMBIA Q-39	C	CONSTRUCTION FUNDING	$175,000,000.00	2030		34	969	2
DALLAS	C	DWU - LAKE COLUMBIA Q-39	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	100%			34	969	3
DALLAS	C	DWU - MAIN STEM BALANCING RESERVOIR Q-35	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$176,363,000.00	2039		34	834	1
DALLAS	C	DWU - MAIN STEM BALANCING RESERVOIR Q-35	C	CONSTRUCTION FUNDING	$498,100,000.00	2045		34	834	2
DALLAS	C	DWU - MAIN STEM BALANCING RESERVOIR Q-35	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	834	3
DALLAS	C	DWU - MAIN STEM PUMP STATION Q-34	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	833	1
DALLAS	C	DWU - MAIN STEM PUMP STATION Q-34	C	CONSTRUCTION FUNDING	$40,048,000.00	2017		34	833	2
DALLAS	C	DWU - MAIN STEM PUMP STATION Q-34	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	833	3
DALLAS	C	DWU - NECHES RIVER RUN-OF-THE-RIVER DIVERSIONS PROJECT Q-38	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			34	968	1
DALLAS	C	DWU - NECHES RIVER RUN-OF-THE-RIVER DIVERSIONS PROJECT Q-38	C	CONSTRUCTION FUNDING	$210,000,000.00	2058		34	968	2
DALLAS	C	DWU - NECHES RIVER RUN-OF-THE-RIVER DIVERSIONS PROJECT Q-38	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	968	3
DALLAS	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$159,350,000.00	2016		34	978	1
DALLAS	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	CONSTRUCTION FUNDING	$692,604,087.00	2028		34	978	2
DALLAS	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			34	978	3
DALWORTHINGTON GARDENS	C	CONSERVATION, WATER LOSS CONTROL - DALWORTHINGTON GARDENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				646	1339	1
DALWORTHINGTON GARDENS	C	CONSERVATION, WATER LOSS CONTROL - DALWORTHINGTON GARDENS	C	CONSTRUCTION FUNDING				646	1339	2
DALWORTHINGTON GARDENS	C	CONSERVATION, WATER LOSS CONTROL - DALWORTHINGTON GARDENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				646	1339	3
DAWSON	C	CONSERVATION, WATER LOSS CONTROL - DAWSON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				648	1340	1
DAWSON	C	CONSERVATION, WATER LOSS CONTROL - DAWSON	C	CONSTRUCTION FUNDING				648	1340	2
DAWSON	C	CONSERVATION, WATER LOSS CONTROL - DAWSON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				648	1340	3
DECATUR	C	CONSERVATION, WATER LOSS CONTROL - DECATUR	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				653	1341	1
DECATUR	C	CONSERVATION, WATER LOSS CONTROL - DECATUR	C	CONSTRUCTION FUNDING				653	1341	2
DECATUR	C	CONSERVATION, WATER LOSS CONTROL - DECATUR	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				653	1341	3
DENISON	C	CONSERVATION, WATER LOSS CONTROL - DENISON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				655	1342	1
DENISON	C	CONSERVATION, WATER LOSS CONTROL - DENISON	C	CONSTRUCTION FUNDING				655	1342	2
DENISON	C	CONSERVATION, WATER LOSS CONTROL - DENISON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				655	1342	3
DENISON	C	DENISON - EXPAND RAW WATER DELIVERY FROM LAKE TEXOMA Q-137	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				655	1067	1
DENISON	C	DENISON - EXPAND RAW WATER DELIVERY FROM LAKE TEXOMA Q-137	C	CONSTRUCTION FUNDING				655	1067	2
DENISON	C	DENISON - EXPAND RAW WATER DELIVERY FROM LAKE TEXOMA Q-137	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				655	1067	3
DENISON	C	DENISON - NEW 4 MGD WATER TREATMENT PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				655	854	1
DENISON	C	DENISON - NEW 4 MGD WATER TREATMENT PLANT Q-12	C	CONSTRUCTION FUNDING				655	854	2
DENISON	C	DENISON - NEW 4 MGD WATER TREATMENT PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				655	854	3
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				655	865	1
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				655	865	2
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				655	865	3
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				655	866	1
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				655	866	2
DENISON	C	DENISON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				655	866	3
DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	1343	1
DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON	C	CONSTRUCTION FUNDING				38	1343	2
DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	1343	3
DENTON	C	DENTON - 20 MGD RAY ROBERTS PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	869	1
DENTON	C	DENTON - 20 MGD RAY ROBERTS PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				38	869	2
DENTON	C	DENTON - 20 MGD RAY ROBERTS PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	869	3
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	867	1
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				38	867	2
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	867	3
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	868	1
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				38	868	2
DENTON	C	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	868	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	870	1
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				38	870	2
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	870	3
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				38	871	1
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				38	871	2
DENTON	C	DENTON - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				38	871	3
DENTON COUNTY FWSD #10	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #10	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2869	1579	1
DENTON COUNTY FWSD #10	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #10	C	CONSTRUCTION FUNDING				2869	1579	2
DENTON COUNTY FWSD #10	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #10	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2869	1579	3
DENTON COUNTY FWSD #10	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #10	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2869	1344	1
DENTON COUNTY FWSD #10	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #10	C	CONSTRUCTION FUNDING				2869	1344	2
DENTON COUNTY FWSD #10	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #10	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2869	1344	3
DENTON COUNTY FWSD #1A	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #1A	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				656	1345	1
DENTON COUNTY FWSD #1A	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #1A	C	CONSTRUCTION FUNDING				656	1345	2
DENTON COUNTY FWSD #1A	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #1A	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				656	1345	3
DENTON COUNTY FWSD #7	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #7	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2867	1580	1
DENTON COUNTY FWSD #7	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #7	C	CONSTRUCTION FUNDING	$0.00			2867	1580	2
DENTON COUNTY FWSD #7	C	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #7	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2867	1580	3
DENTON COUNTY FWSD #7	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #7	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2867	1346	1
DENTON COUNTY FWSD #7	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #7	C	CONSTRUCTION FUNDING	$0.00			2867	1346	2
DENTON COUNTY FWSD #7	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #7	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2867	1346	3
DESOTO	C	CONSERVATION, IRRIGATION RESTRICTION - DESOTO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2586	1581	1
DESOTO	C	CONSERVATION, IRRIGATION RESTRICTION - DESOTO	C	CONSTRUCTION FUNDING				2586	1581	2
DESOTO	C	CONSERVATION, IRRIGATION RESTRICTION - DESOTO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2586	1581	3
DESOTO	C	CONSERVATION, WATER LOSS CONTROL - DESOTO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2586	1347	1
DESOTO	C	CONSERVATION, WATER LOSS CONTROL - DESOTO	C	CONSTRUCTION FUNDING				2586	1347	2
DESOTO	C	CONSERVATION, WATER LOSS CONTROL - DESOTO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2586	1347	3
DOUBLE OAK	C	CONSERVATION, WATER LOSS CONTROL - DOUBLE OAK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				667	1348	1
DOUBLE OAK	C	CONSERVATION, WATER LOSS CONTROL - DOUBLE OAK	C	CONSTRUCTION FUNDING				667	1348	2
DOUBLE OAK	C	CONSERVATION, WATER LOSS CONTROL - DOUBLE OAK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				667	1348	3
DUNCANVILLE	C	CONSERVATION, WATER LOSS CONTROL - DUNCANVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				672	1349	1
DUNCANVILLE	C	CONSERVATION, WATER LOSS CONTROL - DUNCANVILLE	C	CONSTRUCTION FUNDING				672	1349	2
DUNCANVILLE	C	CONSERVATION, WATER LOSS CONTROL - DUNCANVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				672	1349	3
EAST CEDAR CREEK FWSD	C	CONSERVATION, WATER LOSS CONTROL - EAST CEDAR CREEK FWSD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				43	1350	1
EAST CEDAR CREEK FWSD	C	CONSERVATION, WATER LOSS CONTROL - EAST CEDAR CREEK FWSD	C	CONSTRUCTION FUNDING				43	1350	2
EAST CEDAR CREEK FWSD	C	CONSERVATION, WATER LOSS CONTROL - EAST CEDAR CREEK FWSD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				43	1350	3
EAST CEDAR CREEK FWSD	C	EAST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				43	872	1
EAST CEDAR CREEK FWSD	C	EAST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				43	872	2
EAST CEDAR CREEK FWSD	C	EAST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				43	872	3
EAST FORK SUD	C	CONSERVATION, WATER LOSS CONTROL - EAST FORK SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				676	1351	1
EAST FORK SUD	C	CONSERVATION, WATER LOSS CONTROL - EAST FORK SUD	C	CONSTRUCTION FUNDING				676	1351	2
EAST FORK SUD	C	CONSERVATION, WATER LOSS CONTROL - EAST FORK SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				676	1351	3
EAST FORK SUD	C	EAST FORK SUD- INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-181	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				676	1111	1
EAST FORK SUD	C	EAST FORK SUD- INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-181	C	CONSTRUCTION FUNDING				676	1111	2
EAST FORK SUD	C	EAST FORK SUD- INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-181	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				676	1111	3
ECTOR	C	CONSERVATION, WATER LOSS CONTROL - ECTOR	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				683	1352	1
ECTOR	C	CONSERVATION, WATER LOSS CONTROL - ECTOR	C	CONSTRUCTION FUNDING				683	1352	2
ECTOR	C	CONSERVATION, WATER LOSS CONTROL - ECTOR	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				683	1352	3
EDGECLIFF VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - EDGECLIFF VILLAGE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2587	1353	1
EDGECLIFF VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - EDGECLIFF VILLAGE	C	CONSTRUCTION FUNDING				2587	1353	2
EDGECLIFF VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - EDGECLIFF VILLAGE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2587	1353	3
ENNIS	C	CONSERVATION, IRRIGATION RESTRICTION - ENNIS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			49	1582	1
ENNIS	C	CONSERVATION, IRRIGATION RESTRICTION - ENNIS	C	CONSTRUCTION FUNDING	"blank"			49	1582	2
ENNIS	C	CONSERVATION, IRRIGATION RESTRICTION - ENNIS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	1582	3
ENNIS	C	CONSERVATION, WATER LOSS CONTROL - ENNIS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			49	1354	1
ENNIS	C	CONSERVATION, WATER LOSS CONTROL - ENNIS	C	CONSTRUCTION FUNDING	"blank"			49	1354	2
ENNIS	C	CONSERVATION, WATER LOSS CONTROL - ENNIS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	1354	3
ENNIS	C	CONSERVATION, WATER WASTE PROHIBITION - ENNIS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			49	1568	1
ENNIS	C	CONSERVATION, WATER WASTE PROHIBITION - ENNIS	C	CONSTRUCTION FUNDING	"blank"			49	1568	2
ENNIS	C	CONSERVATION, WATER WASTE PROHIBITION - ENNIS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	1568	3
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2020		49	873	1
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING	"blank"	2021		49	873	2
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	873	3
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2020		49	874	1
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING	"blank"	2021		49	874	2
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	874	3
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2020		49	875	1
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING	"blank"	2021		49	875	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
ENNIS	C	ENNIS - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	875	3
ENNIS	C	ENNIS INDIRECT REUSE Q-108	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2018		49	1038	1
ENNIS	C	ENNIS INDIRECT REUSE Q-108	C	CONSTRUCTION FUNDING	"blank"	2019		49	1038	2
ENNIS	C	ENNIS INDIRECT REUSE Q-108	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			49	1038	3
EULESS	C	CONSERVATION, WATER LOSS CONTROL - EULESS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			704	1355	1
EULESS	C	CONSERVATION, WATER LOSS CONTROL - EULESS	C	CONSTRUCTION FUNDING	$0.00			704	1355	2
EULESS	C	CONSERVATION, WATER LOSS CONTROL - EULESS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			704	1355	3
EULESS	C	CONSERVATION, WATER WASTE PROHIBITION - EULESS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			704	1569	1
EULESS	C	CONSERVATION, WATER WASTE PROHIBITION - EULESS	C	CONSTRUCTION FUNDING	$0.00			704	1569	2
EULESS	C	CONSERVATION, WATER WASTE PROHIBITION - EULESS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			704	1569	3
EUSTACE	C	CONSERVATION, WATER LOSS CONTROL - EUSTACE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2017		705	1356	1
EUSTACE	C	CONSERVATION, WATER LOSS CONTROL - EUSTACE	C	CONSTRUCTION FUNDING	$5,043.00			705	1356	2
EUSTACE	C	CONSERVATION, WATER LOSS CONTROL - EUSTACE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			705	1356	3
EUSTACE	C	EUSTACE - NEW WELL IN CARRIZO-WILCOX Q-146	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$30,000.00	2016		705	1076	1
EUSTACE	C	EUSTACE - NEW WELL IN CARRIZO-WILCOX Q-146	C	CONSTRUCTION FUNDING	$882,400.00	2017		705	1076	2
EUSTACE	C	EUSTACE - NEW WELL IN CARRIZO-WILCOX Q-146	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	20%			705	1076	3
EVERMAN	C	CONSERVATION, WATER LOSS CONTROL - EVERMAN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				706	1357	1
EVERMAN	C	CONSERVATION, WATER LOSS CONTROL - EVERMAN	C	CONSTRUCTION FUNDING				706	1357	2
EVERMAN	C	CONSERVATION, WATER LOSS CONTROL - EVERMAN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				706	1357	3
FAIRFIELD	C	CONSERVATION, WATER LOSS CONTROL - FAIRFIELD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			708	1358	1
FAIRFIELD	C	CONSERVATION, WATER LOSS CONTROL - FAIRFIELD	C	CONSTRUCTION FUNDING	$0.00			708	1358	2
FAIRFIELD	C	CONSERVATION, WATER LOSS CONTROL - FAIRFIELD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			708	1358	3
FAIRFIELD	C	FAIRFIELD - CONNECT TO AND PURCHASE WATER FROM TRWD (RICHLAND-CHAMBERS) Q-132	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			708	1062	1
FAIRFIELD	C	FAIRFIELD - CONNECT TO AND PURCHASE WATER FROM TRWD (RICHLAND-CHAMBERS) Q-132	C	CONSTRUCTION FUNDING	$0.00			708	1062	2
FAIRFIELD	C	FAIRFIELD - CONNECT TO AND PURCHASE WATER FROM TRWD (RICHLAND-CHAMBERS) Q-132	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			708	1062	3
FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - FAIRVIEW	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				709	1359	1
FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - FAIRVIEW	C	CONSTRUCTION FUNDING				709	1359	2
FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - FAIRVIEW	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				709	1359	3
FARMERS BRANCH	C	CONSERVATION, IRRIGATION RESTRICTION - FARMERS BRANCH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				712	1583	1
FARMERS BRANCH	C	CONSERVATION, IRRIGATION RESTRICTION - FARMERS BRANCH	C	CONSTRUCTION FUNDING				712	1583	2
FARMERS BRANCH	C	CONSERVATION, IRRIGATION RESTRICTION - FARMERS BRANCH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				712	1583	3
FARMERS BRANCH	C	CONSERVATION, WATER LOSS CONTROL - FARMERS BRANCH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				712	1360	1
FARMERS BRANCH	C	CONSERVATION, WATER LOSS CONTROL - FARMERS BRANCH	C	CONSTRUCTION FUNDING				712	1360	2
FARMERS BRANCH	C	CONSERVATION, WATER LOSS CONTROL - FARMERS BRANCH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				712	1360	3
FARMERS BRANCH	C	CONSERVATION, WATER WASTE PROHIBITION - FARMERS BRANCH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				712	1570	1
FARMERS BRANCH	C	CONSERVATION, WATER WASTE PROHIBITION - FARMERS BRANCH	C	CONSTRUCTION FUNDING				712	1570	2
FARMERS BRANCH	C	CONSERVATION, WATER WASTE PROHIBITION - FARMERS BRANCH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				712	1570	3
FARMERSVILLE	C	CONSERVATION, WATER LOSS CONTROL - FARMERSVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				713	1361	1
FARMERSVILLE	C	CONSERVATION, WATER LOSS CONTROL - FARMERSVILLE	C	CONSTRUCTION FUNDING				713	1361	2
FARMERSVILLE	C	CONSERVATION, WATER LOSS CONTROL - FARMERSVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				713	1361	3
FATE	C	CONSERVATION, WATER LOSS CONTROL - FATE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2499	1362	1
FATE	C	CONSERVATION, WATER LOSS CONTROL - FATE	C	CONSTRUCTION FUNDING				2499	1362	2
FATE	C	CONSERVATION, WATER LOSS CONTROL - FATE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2499	1362	3
FATE	C	FATE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-182	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2499	1112	1
FATE	C	FATE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-182	C	CONSTRUCTION FUNDING				2499	1112	2
FATE	C	FATE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-182	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2499	1112	3
FERRIS	C	CONSERVATION, WATER LOSS CONTROL - FERRIS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				717	1363	1
FERRIS	C	CONSERVATION, WATER LOSS CONTROL - FERRIS	C	CONSTRUCTION FUNDING				717	1363	2
FERRIS	C	CONSERVATION, WATER LOSS CONTROL - FERRIS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				717	1363	3
FERRIS	C	FERRIS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-109	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				717	1039	1
FERRIS	C	FERRIS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-109	C	CONSTRUCTION FUNDING				717	1039	2
FERRIS	C	FERRIS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-109	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				717	1039	3
FLOWER MOUND	C	CONSERVATION, WATER LOSS CONTROL - FLOWER MOUND	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				723	1366	1
FLOWER MOUND	C	CONSERVATION, WATER LOSS CONTROL - FLOWER MOUND	C	CONSTRUCTION FUNDING				723	1366	2
FLOWER MOUND	C	CONSERVATION, WATER LOSS CONTROL - FLOWER MOUND	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				723	1366	3
FOREST HILL	C	CONSERVATION, WATER LOSS CONTROL - FOREST HILL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				725	1367	1
FOREST HILL	C	CONSERVATION, WATER LOSS CONTROL - FOREST HILL	C	CONSTRUCTION FUNDING				725	1367	2
FOREST HILL	C	CONSERVATION, WATER LOSS CONTROL - FOREST HILL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				725	1367	3
FORNEY	C	CONSERVATION, WATER LOSS CONTROL - FORNEY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				50	1368	1
FORNEY	C	CONSERVATION, WATER LOSS CONTROL - FORNEY	C	CONSTRUCTION FUNDING				50	1368	2
FORNEY	C	CONSERVATION, WATER LOSS CONTROL - FORNEY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				50	1368	3
FORNEY	C	FORNEY - INCREASE PUMP STATION CAPACITY Q-154	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				50	1084	1
FORNEY	C	FORNEY - INCREASE PUMP STATION CAPACITY Q-154	C	CONSTRUCTION FUNDING				50	1084	2
FORNEY	C	FORNEY - INCREASE PUMP STATION CAPACITY Q-154	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				50	1084	3
FORNEY LAKE WSC	C	CONSERVATION, WATER LOSS CONTROL - FORNEY LAKE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				726	1369	1
FORNEY LAKE WSC	C	CONSERVATION, WATER LOSS CONTROL - FORNEY LAKE WSC	C	CONSTRUCTION FUNDING				726	1369	2
FORNEY LAKE WSC	C	CONSERVATION, WATER LOSS CONTROL - FORNEY LAKE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				726	1369	3
FORT WORTH	C	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	1370	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
FORT WORTH	C	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	C	CONSTRUCTION FUNDING	$0.00			53	1370	2
FORT WORTH	C	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	1370	3
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	903	1
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2040		53	903	2
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	903	3
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	905	1
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2048		53	905	2
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	905	3
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	906	1
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2055		53	906	2
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	906	3
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 4 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	907	1
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 4 Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2065		53	907	2
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 4 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	907	3
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 5 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	908	1
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 5 Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2065		53	908	2
FORT WORTH	C	FORT WORTH - 50 MGD EXPANSION 5 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	908	3
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 30 MGD EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	880	1
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 30 MGD EXPANSION Q-13	C	CONSTRUCTION FUNDING	$59,977,000.00	2035		53	880	2
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 30 MGD EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	880	3
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 35 MGD EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	876	1
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 35 MGD EXPANSION Q-13	C	CONSTRUCTION FUNDING	$68,472,000.00	2021		53	876	2
FORT WORTH	C	FORT WORTH - EAGLE MOUNTAIN 35 MGD EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	876	3
FORT WORTH	C	FORT WORTH - MUNICIPAL CONSERVATION - ADVANCED METER INFRASTRUCTURE PROGRAM Q-209	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"Already Funded"			53	1142	1
FORT WORTH	C	FORT WORTH - MUNICIPAL CONSERVATION - ADVANCED METER INFRASTRUCTURE PROGRAM Q-209	C	CONSTRUCTION FUNDING	"Already Funded"			53	1142	2
FORT WORTH	C	FORT WORTH - MUNICIPAL CONSERVATION - ADVANCED METER INFRASTRUCTURE PROGRAM Q-209	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"Already Funded"			53	1142	3
FORT WORTH	C	FORT WORTH - ROLLING HILLS 50 MGD EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	878	1
FORT WORTH	C	FORT WORTH - ROLLING HILLS 50 MGD EXPANSION Q-13	C	CONSTRUCTION FUNDING	$93,960,000.00	2024		53	878	2
FORT WORTH	C	FORT WORTH - ROLLING HILLS 50 MGD EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	878	3
FORT WORTH	C	FORT WORTH - WEST PLANT 23 MGD EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	877	1
FORT WORTH	C	FORT WORTH - WEST PLANT 23 MGD EXPANSION Q-13	C	CONSTRUCTION FUNDING	$48,082,000.00	2027		53	877	2
FORT WORTH	C	FORT WORTH - WEST PLANT 23 MGD EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	877	3
FORT WORTH	C	FORT WORTH - WEST PLANT 35 MGD EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	879	1
FORT WORTH	C	FORT WORTH - WEST PLANT 35 MGD EXPANSION Q-13	C	CONSTRUCTION FUNDING	$68,472,000.00	2037		53	879	2
FORT WORTH	C	FORT WORTH - WEST PLANT 35 MGD EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	879	3
FORT WORTH	C	FORT WORTH DIRECT REUSE - ALLIANCE CORRIDOR Q-68	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	998	1
FORT WORTH	C	FORT WORTH DIRECT REUSE - ALLIANCE CORRIDOR Q-68	C	CONSTRUCTION FUNDING	$0.00			53	998	2
FORT WORTH	C	FORT WORTH DIRECT REUSE - ALLIANCE CORRIDOR Q-68	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	998	3
FORT WORTH	C	FORT WORTH FUTURE DIRECT REUSE Q-67	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	997	1
FORT WORTH	C	FORT WORTH FUTURE DIRECT REUSE Q-67	C	CONSTRUCTION FUNDING	$129,976,000.00	2035		53	997	2
FORT WORTH	C	FORT WORTH FUTURE DIRECT REUSE Q-67	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	997	3
FORT WORTH	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			53	1129	1
FORT WORTH	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	CONSTRUCTION FUNDING	$0.00			53	1129	2
FORT WORTH	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			53	1129	3
FRISCO	C	CONSERVATION, WATER LOSS CONTROL - FRISCO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			743	1371	1
FRISCO	C	CONSERVATION, WATER LOSS CONTROL - FRISCO	C	CONSTRUCTION FUNDING	$0.00			743	1371	2
FRISCO	C	CONSERVATION, WATER LOSS CONTROL - FRISCO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			743	1371	3
FRISCO	C	FRISCO - DEVELOP DIRECT REUSE Q-74	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			743	1004	1
FRISCO	C	FRISCO - DEVELOP DIRECT REUSE Q-74	C	CONSTRUCTION FUNDING	$0.00			743	1004	2
FRISCO	C	FRISCO - DEVELOP DIRECT REUSE Q-74	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			743	1004	3
FROST	C	CONSERVATION, WATER LOSS CONTROL - FROST	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				745	1372	1
FROST	C	CONSERVATION, WATER LOSS CONTROL - FROST	C	CONSTRUCTION FUNDING				745	1372	2
FROST	C	CONSERVATION, WATER LOSS CONTROL - FROST	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				745	1372	3
GAINESVILLE	C	CONSERVATION, WATER LOSS CONTROL - GAINESVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	1373	1
GAINESVILLE	C	CONSERVATION, WATER LOSS CONTROL - GAINESVILLE	C	CONSTRUCTION FUNDING				55	1373	2
GAINESVILLE	C	CONSERVATION, WATER LOSS CONTROL - GAINESVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	1373	3
GAINESVILLE	C	GAINESVILLE - DIRECT REUSE Q-81	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	1011	1
GAINESVILLE	C	GAINESVILLE - DIRECT REUSE Q-81	C	CONSTRUCTION FUNDING				55	1011	2
GAINESVILLE	C	GAINESVILLE - DIRECT REUSE Q-81	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	1011	3
GAINESVILLE	C	GAINESVILLE - INFRASTRUCTURE TO DELIVER TO CUSTOMERS Q-82	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	1012	1
GAINESVILLE	C	GAINESVILLE - INFRASTRUCTURE TO DELIVER TO CUSTOMERS Q-82	C	CONSTRUCTION FUNDING				55	1012	2
GAINESVILLE	C	GAINESVILLE - INFRASTRUCTURE TO DELIVER TO CUSTOMERS Q-82	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	1012	3
GAINESVILLE	C	GAINESVILLE - LAKE TEXOMA Q-83	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	1013	1
GAINESVILLE	C	GAINESVILLE - LAKE TEXOMA Q-83	C	CONSTRUCTION FUNDING				55	1013	2
GAINESVILLE	C	GAINESVILLE - LAKE TEXOMA Q-83	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	1013	3
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	910	1
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				55	910	2
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	910	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				55	911	1
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				55	911	2
GAINESVILLE	C	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				55	911	3
GARLAND	C	CONSERVATION, WATER LOSS CONTROL - GARLAND	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				58	1374	1
GARLAND	C	CONSERVATION, WATER LOSS CONTROL - GARLAND	C	CONSTRUCTION FUNDING				58	1374	2
GARLAND	C	CONSERVATION, WATER LOSS CONTROL - GARLAND	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				58	1374	3
GARRETT	C	CONSERVATION, WATER LOSS CONTROL - GARRETT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2936	1375	1
GARRETT	C	CONSERVATION, WATER LOSS CONTROL - GARRETT	C	CONSTRUCTION FUNDING				2936	1375	2
GARRETT	C	CONSERVATION, WATER LOSS CONTROL - GARRETT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2936	1375	3
GASTONIA-SCURRY SUD	C	CONSERVATION, WATER LOSS CONTROL - GASTONIA-SCURRY SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				752	1376	1
GASTONIA-SCURRY SUD	C	CONSERVATION, WATER LOSS CONTROL - GASTONIA-SCURRY SUD	C	CONSTRUCTION FUNDING				752	1376	2
GASTONIA-SCURRY SUD	C	CONSERVATION, WATER LOSS CONTROL - GASTONIA-SCURRY SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				752	1376	3
GASTONIA-SCURRY SUD	C	GASTONIA-SCURRY SUD - CONNECT TO SEAGOVILLE (DWU) Q-155	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				752	1085	1
GASTONIA-SCURRY SUD	C	GASTONIA-SCURRY SUD - CONNECT TO SEAGOVILLE (DWU) Q-155	C	CONSTRUCTION FUNDING				752	1085	2
GASTONIA-SCURRY SUD	C	GASTONIA-SCURRY SUD - CONNECT TO SEAGOVILLE (DWU) Q-155	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				752	1085	3
GLENN HEIGHTS	C	CONSERVATION, WATER LOSS CONTROL - GLENN HEIGHTS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				762	1377	1
GLENN HEIGHTS	C	CONSERVATION, WATER LOSS CONTROL - GLENN HEIGHTS	C	CONSTRUCTION FUNDING				762	1377	2
GLENN HEIGHTS	C	CONSERVATION, WATER LOSS CONTROL - GLENN HEIGHTS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				762	1377	3
GLENN HEIGHTS	C	GLENN HEIGHTS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-86	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				762	1016	1
GLENN HEIGHTS	C	GLENN HEIGHTS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-86	C	CONSTRUCTION FUNDING				762	1016	2
GLENN HEIGHTS	C	GLENN HEIGHTS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-86	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				762	1016	3
GRAND PRAIRIE	C	CONSERVATION, WATER LOSS CONTROL - GRAND PRARIE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$150,000.00			772	1378	1
GRAND PRAIRIE	C	CONSERVATION, WATER LOSS CONTROL - GRAND PRARIE	C	CONSTRUCTION FUNDING	$1,910,148.00	2015		772	1378	2
GRAND PRAIRIE	C	CONSERVATION, WATER LOSS CONTROL - GRAND PRARIE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			772	1378	3
GRAND PRAIRIE	C	GRAND PRAIRIE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-87	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$500,000.00	2017		772	1017	1
GRAND PRAIRIE	C	GRAND PRAIRIE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-87	C	CONSTRUCTION FUNDING	$4,450,500.00	2018		772	1017	2
GRAND PRAIRIE	C	GRAND PRAIRIE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-87	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			772	1017	3
GRAND PRAIRIE	C	GRAND PRAIRIE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-88	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$3,500,000.00	2020		772	1018	1
GRAND PRAIRIE	C	GRAND PRAIRIE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-88	C	CONSTRUCTION FUNDING	$30,806,000.00	2022		772	1018	2
GRAND PRAIRIE	C	GRAND PRAIRIE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-88	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			772	1018	3
GRAPEVINE	C	CONSERVATION, WATER LOSS CONTROL - GRAPEVINE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				778	1379	1
GRAPEVINE	C	CONSERVATION, WATER LOSS CONTROL - GRAPEVINE	C	CONSTRUCTION FUNDING				778	1379	2
GRAPEVINE	C	CONSERVATION, WATER LOSS CONTROL - GRAPEVINE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				778	1379	3
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE EAST-WEST WATER LINE Q-65	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				60	995	1
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE EAST-WEST WATER LINE Q-65	C	CONSTRUCTION FUNDING				60	995	2
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE EAST-WEST WATER LINE Q-65	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				60	995	3
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE WATER TRANSMISSION SYSTEM - PHASE 2 Q-66	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				60	996	1
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE WATER TRANSMISSION SYSTEM - PHASE 2 Q-66	C	CONSTRUCTION FUNDING				60	996	2
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE WATER TRANSMISSION SYSTEM - PHASE 2 Q-66	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				60	996	3
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - GRAYSON COUNTY WATER SUPPLY PROJECT Q-64	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				60	994	1
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - GRAYSON COUNTY WATER SUPPLY PROJECT Q-64	C	CONSTRUCTION FUNDING				60	994	2
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - GRAYSON COUNTY WATER SUPPLY PROJECT Q-64	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				60	994	3
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - REUSE FOR GRAYSON COUNTY STEAM ELECTRIC POWER Q-63	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				60	993	1
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - REUSE FOR GRAYSON COUNTY STEAM ELECTRIC POWER Q-63	C	CONSTRUCTION FUNDING				60	993	2
GREATER TEXOMA UTILITY AUTHORITY	C	GTUA - REUSE FOR GRAYSON COUNTY STEAM ELECTRIC POWER Q-63	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				60	993	3
GUN BARREL CITY	C	CONSERVATION, WATER LOSS CONTROL - GUN BARREL CITY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				788	1380	1
GUN BARREL CITY	C	CONSERVATION, WATER LOSS CONTROL - GUN BARREL CITY	C	CONSTRUCTION FUNDING				788	1380	2
GUN BARREL CITY	C	CONSERVATION, WATER LOSS CONTROL - GUN BARREL CITY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				788	1380	3
GUNTER	C	CONSERVATION, WATER LOSS CONTROL - GUNTER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				789	1381	1
GUNTER	C	CONSERVATION, WATER LOSS CONTROL - GUNTER	C	CONSTRUCTION FUNDING				789	1381	2
GUNTER	C	CONSERVATION, WATER LOSS CONTROL - GUNTER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				789	1381	3
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2020) Q-139	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				789	1069	1
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2020) Q-139	C	CONSTRUCTION FUNDING				789	1069	2
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2020) Q-139	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				789	1069	3
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2030) Q-140	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				789	1070	1
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2030) Q-140	C	CONSTRUCTION FUNDING				789	1070	2
GUNTER	C	GUNTER - NEW WELL IN TRINITY AQUIFER (2030) Q-140	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				789	1070	3
HACKBERRY	C	CONSERVATION, WATER LOSS CONTROL - HACKBERRY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"n/a"			791	1382	1
HACKBERRY	C	CONSERVATION, WATER LOSS CONTROL - HACKBERRY	C	CONSTRUCTION FUNDING	"n/a"			791	1382	2
HACKBERRY	C	CONSERVATION, WATER LOSS CONTROL - HACKBERRY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"n/a"			791	1382	3
HACKBERRY	C	HACKBERRY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-103	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"n/a"			791	1033	1
HACKBERRY	C	HACKBERRY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-103	C	CONSTRUCTION FUNDING	"n/a"			791	1033	2
HACKBERRY	C	HACKBERRY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-103	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"n/a"			791	1033	3
HALTOM CITY	C	CONSERVATION, WATER LOSS CONTROL - HALTOM CITY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				796	1383	1
HALTOM CITY	C	CONSERVATION, WATER LOSS CONTROL - HALTOM CITY	C	CONSTRUCTION FUNDING				796	1383	2
HALTOM CITY	C	CONSERVATION, WATER LOSS CONTROL - HALTOM CITY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				796	1383	3
HASLET	C	CONSERVATION, WATER LOSS CONTROL - HASLET	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				824	1384	1
HASLET	C	CONSERVATION, WATER LOSS CONTROL - HASLET	C	CONSTRUCTION FUNDING				824	1384	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
HASLET	C	CONSERVATION, WATER LOSS CONTROL - HASLET	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				824	1384	3
HASLET	C	CONSERVATION, WATER WASTE PROHIBITION - HASLET	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				824	1571	1
HASLET	C	CONSERVATION, WATER WASTE PROHIBITION - HASLET	C	CONSTRUCTION FUNDING				824	1571	2
HASLET	C	CONSERVATION, WATER WASTE PROHIBITION - HASLET	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				824	1571	3
HEATH	C	CONSERVATION, IRRIGATION RESTRICTION - HEATH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				829	1584	1
HEATH	C	CONSERVATION, IRRIGATION RESTRICTION - HEATH	C	CONSTRUCTION FUNDING				829	1584	2
HEATH	C	CONSERVATION, IRRIGATION RESTRICTION - HEATH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				829	1584	3
HEATH	C	CONSERVATION, WATER LOSS CONTROL - HEATH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				829	1385	1
HEATH	C	CONSERVATION, WATER LOSS CONTROL - HEATH	C	CONSTRUCTION FUNDING				829	1385	2
HEATH	C	CONSERVATION, WATER LOSS CONTROL - HEATH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				829	1385	3
HICKORY CREEK	C	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				840	1386	1
HICKORY CREEK	C	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK	C	CONSTRUCTION FUNDING				840	1386	2
HICKORY CREEK	C	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				840	1386	3
HIGH POINT WSC	C	CONSERVATION, WATER LOSS CONTROL - HIGH POINT WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				845	1388	1
HIGH POINT WSC	C	CONSERVATION, WATER LOSS CONTROL - HIGH POINT WSC	C	CONSTRUCTION FUNDING				845	1388	2
HIGH POINT WSC	C	CONSERVATION, WATER LOSS CONTROL - HIGH POINT WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				845	1388	3
HIGHLAND PARK	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND PARK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				846	1389	1
HIGHLAND PARK	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND PARK	C	CONSTRUCTION FUNDING				846	1389	2
HIGHLAND PARK	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND PARK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				846	1389	3
HIGHLAND VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND VILLAGE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				847	1390	1
HIGHLAND VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND VILLAGE	C	CONSTRUCTION FUNDING				847	1390	2
HIGHLAND VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND VILLAGE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				847	1390	3
HONEY GROVE	C	CONSERVATION, WATER LOSS CONTROL - HONEY GROVE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				858	1391	1
HONEY GROVE	C	CONSERVATION, WATER LOSS CONTROL - HONEY GROVE	C	CONSTRUCTION FUNDING				858	1391	2
HONEY GROVE	C	CONSERVATION, WATER LOSS CONTROL - HONEY GROVE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				858	1391	3
HOWE	C	CONSERVATION, WATER LOSS CONTROL - HOWE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			860	1392	1
HOWE	C	CONSERVATION, WATER LOSS CONTROL - HOWE	C	CONSTRUCTION FUNDING	$0.00			860	1392	2
HOWE	C	CONSERVATION, WATER LOSS CONTROL - HOWE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			860	1392	3
HUDSON OAKS	C	CONSERVATION, WATER LOSS CONTROL - HUDSON OAKS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				863	1393	1
HUDSON OAKS	C	CONSERVATION, WATER LOSS CONTROL - HUDSON OAKS	C	CONSTRUCTION FUNDING				863	1393	2
HUDSON OAKS	C	CONSERVATION, WATER LOSS CONTROL - HUDSON OAKS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				863	1393	3
HUDSON OAKS	C	CONSERVATION, WATER WASTE PROHIBITION - HUDSON OAKS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				863	1572	1
HUDSON OAKS	C	CONSERVATION, WATER WASTE PROHIBITION - HUDSON OAKS	C	CONSTRUCTION FUNDING				863	1572	2
HUDSON OAKS	C	CONSERVATION, WATER WASTE PROHIBITION - HUDSON OAKS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				863	1572	3
HURST	C	CONSERVATION, WATER LOSS CONTROL - HURST	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				869	1394	1
HURST	C	CONSERVATION, WATER LOSS CONTROL - HURST	C	CONSTRUCTION FUNDING				869	1394	2
HURST	C	CONSERVATION, WATER LOSS CONTROL - HURST	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				869	1394	3
HUTCHINS	C	CONSERVATION, WATER LOSS CONTROL - HUTCHINS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				870	1395	1
HUTCHINS	C	CONSERVATION, WATER LOSS CONTROL - HUTCHINS	C	CONSTRUCTION FUNDING				870	1395	2
HUTCHINS	C	CONSERVATION, WATER LOSS CONTROL - HUTCHINS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				870	1395	3
IRVING	C	CONSERVATION, WATER LOSS CONTROL - IRVING	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1119	1396	1
IRVING	C	CONSERVATION, WATER LOSS CONTROL - IRVING	C	CONSTRUCTION FUNDING	$0.00			1119	1396	2
IRVING	C	CONSERVATION, WATER LOSS CONTROL - IRVING	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1119	1396	3
IRVING	C	IRVING - OKLAHOMA (LAKE HUGO) Q-91	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1119	1021	1
IRVING	C	IRVING - OKLAHOMA (LAKE HUGO) Q-91	C	CONSTRUCTION FUNDING	$0.00			1119	1021	2
IRVING	C	IRVING - OKLAHOMA (LAKE HUGO) Q-91	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1119	1021	3
IRVING	C	IRVING - INDIRECT REUSE (ELLIS COUNTY OFF-CHANNEL RESERVOIR) Q-89	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1119	1019	1
IRVING	C	IRVING - INDIRECT REUSE (ELLIS COUNTY OFF-CHANNEL RESERVOIR) Q-89	C	CONSTRUCTION FUNDING	$0.00			1119	1019	2
IRVING	C	IRVING - INDIRECT REUSE (ELLIS COUNTY OFF-CHANNEL RESERVOIR) Q-89	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1119	1019	3
IRVING	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1119	956	1
IRVING	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	CONSTRUCTION FUNDING	$0.00			1119	956	2
IRVING	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1119	956	3
IRVING	C	Q-90 IRVING - TRA CENTRAL REUSE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$4,000,000.00	2018		1119	1020	1
IRVING	C	Q-90 IRVING - TRA CENTRAL REUSE	C	CONSTRUCTION FUNDING	$35,960,000.00	2020		1119	1020	2
IRVING	C	Q-90 IRVING - TRA CENTRAL REUSE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1119	1020	3
ITALY	C	CONSERVATION, WATER LOSS CONTROL - ITALY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1120	1397	1
ITALY	C	CONSERVATION, WATER LOSS CONTROL - ITALY	C	CONSTRUCTION FUNDING				1120	1397	2
ITALY	C	CONSERVATION, WATER LOSS CONTROL - ITALY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1120	1397	3
JACKSBORO	C	CONSERVATION, WATER LOSS CONTROL - JACKSBORO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1123	1398	1
JACKSBORO	C	CONSERVATION, WATER LOSS CONTROL - JACKSBORO	C	CONSTRUCTION FUNDING				1123	1398	2
JACKSBORO	C	CONSERVATION, WATER LOSS CONTROL - JACKSBORO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1123	1398	3
JOSEPHINE	C	CONSERVATION, WATER LOSS CONTROL - JOSEPHINE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1140	1400	1
JOSEPHINE	C	CONSERVATION, WATER LOSS CONTROL - JOSEPHINE	C	CONSTRUCTION FUNDING	$0.00			1140	1400	2
JOSEPHINE	C	CONSERVATION, WATER LOSS CONTROL - JOSEPHINE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1140	1400	3
JUSTIN	C	CONSERVATION, WATER LOSS CONTROL - JUSTIN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1144	1401	1
JUSTIN	C	CONSERVATION, WATER LOSS CONTROL - JUSTIN	C	CONSTRUCTION FUNDING				1144	1401	2
JUSTIN	C	CONSERVATION, WATER LOSS CONTROL - JUSTIN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1144	1401	3
JUSTIN	C	JUSTIN - NEW WELL IN TRINITY AQUIFER Q-104	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1144	1034	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
JUSTIN	C	JUSTIN - NEW WELL IN TRINITY AQUIFER Q-104	C	CONSTRUCTION FUNDING				1144	1034	2
JUSTIN	C	JUSTIN - NEW WELL IN TRINITY AQUIFER Q-104	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1144	1034	3
KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1147	1402	1
KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN	C	CONSTRUCTION FUNDING				1147	1402	2
KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1147	1402	3
KELLER	C	CONSERVATION, WATER LOSS CONTROL - KELLER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1149	1403	1
KELLER	C	CONSERVATION, WATER LOSS CONTROL - KELLER	C	CONSTRUCTION FUNDING				1149	1403	2
KELLER	C	CONSERVATION, WATER LOSS CONTROL - KELLER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1149	1403	3
KELLER	C	KELLER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-189	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1149	1119	1
KELLER	C	KELLER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-189	C	CONSTRUCTION FUNDING				1149	1119	2
KELLER	C	KELLER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-189	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1149	1119	3
KEMP	C	CONSERVATION, WATER LOSS CONTROL - KEMP	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1151	1404	1
KEMP	C	CONSERVATION, WATER LOSS CONTROL - KEMP	C	CONSTRUCTION FUNDING				1151	1404	2
KEMP	C	CONSERVATION, WATER LOSS CONTROL - KEMP	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1151	1404	3
KENNEDALE	C	CONSERVATION, WATER LOSS CONTROL - KENNEDALE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1156	1405	1
KENNEDALE	C	CONSERVATION, WATER LOSS CONTROL - KENNEDALE	C	CONSTRUCTION FUNDING				1156	1405	2
KENNEDALE	C	CONSERVATION, WATER LOSS CONTROL - KENNEDALE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1156	1405	3
KENNEDALE	C	KENNEDALE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-190	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1156	1121	1
KENNEDALE	C	KENNEDALE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-190	C	CONSTRUCTION FUNDING				1156	1121	2
KENNEDALE	C	KENNEDALE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-190	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1156	1121	3
KENNEDALE	C	KENNEDALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-191	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1156	1122	1
KENNEDALE	C	KENNEDALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-191	C	CONSTRUCTION FUNDING				1156	1122	2
KENNEDALE	C	KENNEDALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-191	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1156	1122	3
KENTUCKY TOWN WSC	C	CONSERVATION, WATER LOSS CONTROL - KENTUCKY TOWN WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2830	1406	1
KENTUCKY TOWN WSC	C	CONSERVATION, WATER LOSS CONTROL - KENTUCKY TOWN WSC	C	CONSTRUCTION FUNDING				2830	1406	2
KENTUCKY TOWN WSC	C	CONSERVATION, WATER LOSS CONTROL - KENTUCKY TOWN WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2830	1406	3
KERENS	C	CONSERVATION, WATER LOSS CONTROL - KERENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1157	1407	1
KERENS	C	CONSERVATION, WATER LOSS CONTROL - KERENS	C	CONSTRUCTION FUNDING				1157	1407	2
KERENS	C	CONSERVATION, WATER LOSS CONTROL - KERENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1157	1407	3
KRUGERVILLE	C	CONSERVATION, WATER LOSS CONTROL - KRUGERVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1169	1408	1
KRUGERVILLE	C	CONSERVATION, WATER LOSS CONTROL - KRUGERVILLE	C	CONSTRUCTION FUNDING				1169	1408	2
KRUGERVILLE	C	CONSERVATION, WATER LOSS CONTROL - KRUGERVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1169	1408	3
KRUM	C	CONSERVATION, WATER LOSS CONTROL - KRUM	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1170	1409	1
KRUM	C	CONSERVATION, WATER LOSS CONTROL - KRUM	C	CONSTRUCTION FUNDING				1170	1409	2
KRUM	C	CONSERVATION, WATER LOSS CONTROL - KRUM	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1170	1409	3
KRUM	C	KRUM - NEW WELL IN TRINITY AQUIFER Q-105	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1170	1035	1
KRUM	C	KRUM - NEW WELL IN TRINITY AQUIFER Q-105	C	CONSTRUCTION FUNDING				1170	1035	2
KRUM	C	KRUM - NEW WELL IN TRINITY AQUIFER Q-105	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1170	1035	3
LADONIA	C	CONSERVATION, WATER LOSS CONTROL - LADONIA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1183	1410	1
LADONIA	C	CONSERVATION, WATER LOSS CONTROL - LADONIA	C	CONSTRUCTION FUNDING				1183	1410	2
LADONIA	C	CONSERVATION, WATER LOSS CONTROL - LADONIA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1183	1410	3
LADONIA	C	LADONIA - CONNECT TO AND PURCHASE WATER FROM UTRWD (LAKE RALPH HALL) Q-129	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1183	1059	1
LADONIA	C	LADONIA - CONNECT TO AND PURCHASE WATER FROM UTRWD (LAKE RALPH HALL) Q-129	C	CONSTRUCTION FUNDING				1183	1059	2
LADONIA	C	LADONIA - CONNECT TO AND PURCHASE WATER FROM UTRWD (LAKE RALPH HALL) Q-129	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1183	1059	3
LAKE DALLAS	C	CONSERVATION, WATER LOSS CONTROL - LAKE DALLAS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1187	1411	1
LAKE DALLAS	C	CONSERVATION, WATER LOSS CONTROL - LAKE DALLAS	C	CONSTRUCTION FUNDING				1187	1411	2
LAKE DALLAS	C	CONSERVATION, WATER LOSS CONTROL - LAKE DALLAS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1187	1411	3
LAKE KIOWA SUD	C	CONSERVATION, WATER LOSS CONTROL - LAKE KIOWA SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2787	1412	1
LAKE KIOWA SUD	C	CONSERVATION, WATER LOSS CONTROL - LAKE KIOWA SUD	C	CONSTRUCTION FUNDING				2787	1412	2
LAKE KIOWA SUD	C	CONSERVATION, WATER LOSS CONTROL - LAKE KIOWA SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2787	1412	3
LAKE WORTH	C	CONSERVATION, WATER LOSS CONTROL - LAKE WORTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1191	1413	1
LAKE WORTH	C	CONSERVATION, WATER LOSS CONTROL - LAKE WORTH	C	CONSTRUCTION FUNDING				1191	1413	2
LAKE WORTH	C	CONSERVATION, WATER LOSS CONTROL - LAKE WORTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1191	1413	3
LAKESIDE	C	CONSERVATION, WATER LOSS CONTROL - LAKESIDE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1193	1414	1
LAKESIDE	C	CONSERVATION, WATER LOSS CONTROL - LAKESIDE	C	CONSTRUCTION FUNDING				1193	1414	2
LAKESIDE	C	CONSERVATION, WATER LOSS CONTROL - LAKESIDE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1193	1414	3
LAKEWOOD VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - LAKEWOOD VILLAGE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2942	1415	1
LAKEWOOD VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - LAKEWOOD VILLAGE	C	CONSTRUCTION FUNDING	$0.00			2942	1415	2
LAKEWOOD VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - LAKEWOOD VILLAGE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2942	1415	3
LANCASTER	C	CONSERVATION, IRRIGATION RESTRICTION - LANCASTER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1198	1585	1
LANCASTER	C	CONSERVATION, IRRIGATION RESTRICTION - LANCASTER	C	CONSTRUCTION FUNDING				1198	1585	2
LANCASTER	C	CONSERVATION, IRRIGATION RESTRICTION - LANCASTER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1198	1585	3
LANCASTER	C	CONSERVATION, WATER LOSS CONTROL - LANCASTER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1198	1416	1
LANCASTER	C	CONSERVATION, WATER LOSS CONTROL - LANCASTER	C	CONSTRUCTION FUNDING				1198	1416	2
LANCASTER	C	CONSERVATION, WATER LOSS CONTROL - LANCASTER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1198	1416	3
LAVON	C	CONSERVATION, WATER LOSS CONTROL - LAVON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2943	1417	1
LAVON	C	CONSERVATION, WATER LOSS CONTROL - LAVON	C	CONSTRUCTION FUNDING				2943	1417	2
LAVON	C	CONSERVATION, WATER LOSS CONTROL - LAVON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2943	1417	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
LAVON SUD	C	CONSERVATION, WATER LOSS CONTROL - LAVON SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2788	1418	1
LAVON SUD	C	CONSERVATION, WATER LOSS CONTROL - LAVON SUD	C	CONSTRUCTION FUNDING				2788	1418	2
LAVON SUD	C	CONSERVATION, WATER LOSS CONTROL - LAVON SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2788	1418	3
LEONARD	C	CONSERVATION, WATER LOSS CONTROL - LEONARD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1205	1420	1
LEONARD	C	CONSERVATION, WATER LOSS CONTROL - LEONARD	C	CONSTRUCTION FUNDING				1205	1420	2
LEONARD	C	CONSERVATION, WATER LOSS CONTROL - LEONARD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1205	1420	3
LEONARD	C	LEONARD - WATER SYSTEM IMPROVEMENTS Q-207	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1205	1140	1
LEONARD	C	LEONARD - WATER SYSTEM IMPROVEMENTS Q-207	C	CONSTRUCTION FUNDING				1205	1140	2
LEONARD	C	LEONARD - WATER SYSTEM IMPROVEMENTS Q-207	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1205	1140	3
LEWISVILLE	C	CONSERVATION, IRRIGATION RESTRICTION - LEWISVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1207	1586	1
LEWISVILLE	C	CONSERVATION, IRRIGATION RESTRICTION - LEWISVILLE	C	CONSTRUCTION FUNDING	$0.00			1207	1586	2
LEWISVILLE	C	CONSERVATION, IRRIGATION RESTRICTION - LEWISVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1207	1586	3
LEWISVILLE	C	CONSERVATION, WATER LOSS CONTROL - LEWISVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1207	1421	1
LEWISVILLE	C	CONSERVATION, WATER LOSS CONTROL - LEWISVILLE	C	CONSTRUCTION FUNDING	$0.00			1207	1421	2
LEWISVILLE	C	CONSERVATION, WATER LOSS CONTROL - LEWISVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1207	1421	3
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1207	913	1
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING	$0.00			1207	913	2
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1207	913	3
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1207	914	1
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING	$0.00			1207	914	2
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1207	914	3
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1207	915	1
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING	$0.00			1207	915	2
LEWISVILLE	C	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1207	915	3
LINDSAY	C	CONSERVATION, WATER LOSS CONTROL - LINDSAY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1216	1422	1
LINDSAY	C	CONSERVATION, WATER LOSS CONTROL - LINDSAY	C	CONSTRUCTION FUNDING	$0.00			1216	1422	2
LINDSAY	C	CONSERVATION, WATER LOSS CONTROL - LINDSAY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1216	1422	3
LITTLE ELM	C	CONSERVATION, WATER LOSS CONTROL - LITTLE ELM	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1217	1423	1
LITTLE ELM	C	CONSERVATION, WATER LOSS CONTROL - LITTLE ELM	C	CONSTRUCTION FUNDING				1217	1423	2
LITTLE ELM	C	CONSERVATION, WATER LOSS CONTROL - LITTLE ELM	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1217	1423	3
LOG CABIN	C	CONSERVATION, WATER LOSS CONTROL - LOG CABIN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1479	1424	1
LOG CABIN	C	CONSERVATION, WATER LOSS CONTROL - LOG CABIN	C	CONSTRUCTION FUNDING	$0.00			1479	1424	2
LOG CABIN	C	CONSERVATION, WATER LOSS CONTROL - LOG CABIN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1479	1424	3
LOWRY CROSSING	C	CONSERVATION, WATER LOSS CONTROL - LOWRY CROSSING	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1493	1425	1
LOWRY CROSSING	C	CONSERVATION, WATER LOSS CONTROL - LOWRY CROSSING	C	CONSTRUCTION FUNDING				1493	1425	2
LOWRY CROSSING	C	CONSERVATION, WATER LOSS CONTROL - LOWRY CROSSING	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1493	1425	3
LUCAS	C	CONSERVATION, IRRIGATION RESTRICTION - LUCAS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1494	1587	1
LUCAS	C	CONSERVATION, IRRIGATION RESTRICTION - LUCAS	C	CONSTRUCTION FUNDING				1494	1587	2
LUCAS	C	CONSERVATION, IRRIGATION RESTRICTION - LUCAS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1494	1587	3
LUCAS	C	CONSERVATION, WATER LOSS CONTROL - LUCAS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1494	1426	1
LUCAS	C	CONSERVATION, WATER LOSS CONTROL - LUCAS	C	CONSTRUCTION FUNDING				1494	1426	2
LUCAS	C	CONSERVATION, WATER LOSS CONTROL - LUCAS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1494	1426	3
LUELLA SUD	C	CONSERVATION, WATER LOSS CONTROL - LUELLA SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2789	1427	1
LUELLA SUD	C	CONSERVATION, WATER LOSS CONTROL - LUELLA SUD	C	CONSTRUCTION FUNDING				2789	1427	2
LUELLA SUD	C	CONSERVATION, WATER LOSS CONTROL - LUELLA SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2789	1427	3
M-E-N WSC	C	CONSERVATION, WATER LOSS CONTROL - M-E-N WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2790	1437	1
M-E-N WSC	C	CONSERVATION, WATER LOSS CONTROL - M-E-N WSC	C	CONSTRUCTION FUNDING				2790	1437	2
M-E-N WSC	C	CONSERVATION, WATER LOSS CONTROL - M-E-N WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2790	1437	3
M-E-N WSC	C	M E N WSC - UPSIZE LAKE HALBERT CONNECTION Q-166	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2790	1096	1
M-E-N WSC	C	M E N WSC - UPSIZE LAKE HALBERT CONNECTION Q-166	C	CONSTRUCTION FUNDING				2790	1096	2
M-E-N WSC	C	M E N WSC - UPSIZE LAKE HALBERT CONNECTION Q-166	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2790	1096	3
MABANK	C	CONSERVATION, WATER LOSS CONTROL - MABANK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1500	1428	1
MABANK	C	CONSERVATION, WATER LOSS CONTROL - MABANK	C	CONSTRUCTION FUNDING				1500	1428	2
MABANK	C	CONSERVATION, WATER LOSS CONTROL - MABANK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1500	1428	3
MABANK	C	MABANK - INCREASE DELIVERY INFRASTRUCTURE FROM CEDAR CREEK LAKE Q-143	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1500	1073	1
MABANK	C	MABANK - INCREASE DELIVERY INFRASTRUCTURE FROM CEDAR CREEK LAKE Q-143	C	CONSTRUCTION FUNDING				1500	1073	2
MABANK	C	MABANK - INCREASE DELIVERY INFRASTRUCTURE FROM CEDAR CREEK LAKE Q-143	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1500	1073	3
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1500	917	1
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				1500	917	2
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1500	917	3
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1500	919	1
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				1500	919	2
MABANK	C	MABANK - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1500	919	3
MALAKOFF	C	CONSERVATION, WATER LOSS CONTROL - MALAKOFF	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1506	1430	1
MALAKOFF	C	CONSERVATION, WATER LOSS CONTROL - MALAKOFF	C	CONSTRUCTION FUNDING				1506	1430	2
MALAKOFF	C	CONSERVATION, WATER LOSS CONTROL - MALAKOFF	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1506	1430	3
MANSFIELD	C	CONSERVATION, WATER LOSS CONTROL - MANSFIELD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				91	1431	1
MANSFIELD	C	CONSERVATION, WATER LOSS CONTROL - MANSFIELD	C	CONSTRUCTION FUNDING				91	1431	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
MANSFIELD	C	CONSERVATION, WATER LOSS CONTROL - MANSFIELD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				91	1431	3
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				91	920	1
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				91	920	2
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				91	920	3
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				91	921	1
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				91	921	2
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				91	921	3
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				91	922	1
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING				91	922	2
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				91	922	3
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				91	923	1
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	CONSTRUCTION FUNDING				91	923	2
MANSFIELD	C	MANSFIELD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				91	923	3
MANUFACTURING, COLLIN	C	COLLIN COUNTY MANUFACTURING - NEW WELL IN WOODBINE AQUIFER Q-72	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1536	1002	1
MANUFACTURING, COLLIN	C	COLLIN COUNTY MANUFACTURING - NEW WELL IN WOODBINE AQUIFER Q-72	C	CONSTRUCTION FUNDING	$0.00			1536	1002	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	CONSTRUCTION FUNDING	$0.00			162	1280	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			162	1280	3
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			164	1281	1
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	CONSTRUCTION FUNDING	$0.00			164	1281	2
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			164	1281	3
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				171	1282	1
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	CONSTRUCTION FUNDING				171	1282	2
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				171	1282	3
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			177	1283	1
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	CONSTRUCTION FUNDING	$0.00			177	1283	2
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			177	1283	3
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1284	1
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	CONSTRUCTION FUNDING				178	1284	2
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1284	3
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1101	1
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				178	1101	2
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1101	3
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2931	1285	1
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	CONSTRUCTION FUNDING	"blank"			2931	1285	2
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2931	1285	3
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2931	1101	1
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING	"blank"			2931	1101	2
ANNETTA NORTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2931	1101	3
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				179	1286	1
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	CONSTRUCTION FUNDING				179	1286	2
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				179	1286	3
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				179	1101	1
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				179	1101	2
ANNETTA SOUTH	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				179	1101	3
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				188	1287	1
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	CONSTRUCTION FUNDING				188	1287	2
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				188	1287	3
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				189	1288	1
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	CONSTRUCTION FUNDING				189	1288	2
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				189	1288	3
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				189	1564	1
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	CONSTRUCTION FUNDING				189	1564	2
ARGYLE WSC	C	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				189	1564	3
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				190	1289	1
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	CONSTRUCTION FUNDING				190	1289	2
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				190	1289	3
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				195	1290	1
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	CONSTRUCTION FUNDING				195	1290	2
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				195	1290	3
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				195	1565	1
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	CONSTRUCTION FUNDING				195	1565	2
ATHENS	C	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				195	1565	3
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			197	1291	1
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	CONSTRUCTION FUNDING	$0.00			197	1291	2
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			197	1291	3
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				198	1292	1
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	CONSTRUCTION FUNDING				198	1292	2
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				198	1292	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
MIDLOTHIAN	C	MIDLOTHIAN - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING	"blank"			94	926	2
MIDLOTHIAN	C	MIDLOTHIAN - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			94	926	3
MILFORD	C	CONSERVATION, WATER LOSS CONTROL - MILFORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1721	1440	1
MILFORD	C	CONSERVATION, WATER LOSS CONTROL - MILFORD	C	CONSTRUCTION FUNDING				1721	1440	2
MILFORD	C	CONSERVATION, WATER LOSS CONTROL - MILFORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1721	1440	3
MINING, GRAYSON	C	GRAYSON COUNTY MINING - NEW WELL IN TRINITY AQUIFER Q-138	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1805	1068	1
MINING, GRAYSON	C	GRAYSON COUNTY MINING - NEW WELL IN TRINITY AQUIFER Q-138	C	CONSTRUCTION FUNDING				1805	1068	2
MINING, GRAYSON	C	GRAYSON COUNTY MINING - NEW WELL IN TRINITY AQUIFER Q-138	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1805	1068	3
MINING, KAUFMAN	C	KAUFMAN COUNTY MINING - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-156	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			1839	1086	1
MINING, KAUFMAN	C	KAUFMAN COUNTY MINING - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-156	C	CONSTRUCTION FUNDING	$0.00			1839	1086	2
MINING, KAUFMAN	C	KAUFMAN COUNTY MINING - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-156	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			1839	1086	3
MOUNT ZION WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNT ZION WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2791	1442	1
MOUNT ZION WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNT ZION WSC	C	CONSTRUCTION FUNDING				2791	1442	2
MOUNT ZION WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNT ZION WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2791	1442	3
MOUNTAIN PEAK SUD	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN PEAK SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1970	1443	1
MOUNTAIN PEAK SUD	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN PEAK SUD	C	CONSTRUCTION FUNDING				1970	1443	2
MOUNTAIN PEAK SUD	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN PEAK SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1970	1443	3
MOUNTAIN PEAK SUD	C	MOUNTAIN PEAK SUD - NEW WELL IN WOODBINE AQUIFER Q-112	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1970	1042	1
MOUNTAIN PEAK SUD	C	MOUNTAIN PEAK SUD - NEW WELL IN WOODBINE AQUIFER Q-112	C	CONSTRUCTION FUNDING				1970	1042	2
MOUNTAIN PEAK SUD	C	MOUNTAIN PEAK SUD - NEW WELL IN WOODBINE AQUIFER Q-112	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1970	1042	3
MOUNTAIN SPRING WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN SPRING WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2839	1444	1
MOUNTAIN SPRING WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN SPRING WSC	C	CONSTRUCTION FUNDING				2839	1444	2
MOUNTAIN SPRING WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN SPRING WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2839	1444	3
MUENSTER	C	CONSERVATION, WATER LOSS CONTROL - MUENSTER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2018		1971	1445	1
MUENSTER	C	CONSERVATION, WATER LOSS CONTROL - MUENSTER	C	CONSTRUCTION FUNDING	"blank"	2019		1971	1445	2
MUENSTER	C	CONSERVATION, WATER LOSS CONTROL - MUENSTER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			1971	1445	3
MUENSTER	C	MUENSTER - DEVELOP MUENSTER LAKE SUPPLY Q-85	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"	2025		1971	1015	1
MUENSTER	C	MUENSTER - DEVELOP MUENSTER LAKE SUPPLY Q-85	C	CONSTRUCTION FUNDING	"blank"	2028		1971	1015	2
MUENSTER	C	MUENSTER - DEVELOP MUENSTER LAKE SUPPLY Q-85	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			1971	1015	3
MURPHY	C	CONSERVATION, WATER LOSS CONTROL - MURPHY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1975	1446	1
MURPHY	C	CONSERVATION, WATER LOSS CONTROL - MURPHY	C	CONSTRUCTION FUNDING				1975	1446	2
MURPHY	C	CONSERVATION, WATER LOSS CONTROL - MURPHY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1975	1446	3
MURPHY	C	CONSERVATION, WATER WASTE PROHIBITION - MURPHY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1975	1574	1
MURPHY	C	CONSERVATION, WATER WASTE PROHIBITION - MURPHY	C	CONSTRUCTION FUNDING				1975	1574	2
MURPHY	C	CONSERVATION, WATER WASTE PROHIBITION - MURPHY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1975	1574	3
MUSTANG SUD	C	CONSERVATION, WATER LOSS CONTROL - MUSTANG SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			96	1447	1
MUSTANG SUD	C	CONSERVATION, WATER LOSS CONTROL - MUSTANG SUD	C	CONSTRUCTION FUNDING	$0.00			96	1447	2
MUSTANG SUD	C	CONSERVATION, WATER LOSS CONTROL - MUSTANG SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			96	1447	3
NAVARRO MILLS WSC	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO MILLS WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1981	1448	1
NAVARRO MILLS WSC	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO MILLS WSC	C	CONSTRUCTION FUNDING				1981	1448	2
NAVARRO MILLS WSC	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO MILLS WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1981	1448	3
NAVARRO MILLS WSC	C	NAVARRO MILLS WSC - NEW WELL IN WOODBINE AQUIFER Q-168	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1981	1098	1
NAVARRO MILLS WSC	C	NAVARRO MILLS WSC - NEW WELL IN WOODBINE AQUIFER Q-168	C	CONSTRUCTION FUNDING				1981	1098	2
NAVARRO MILLS WSC	C	NAVARRO MILLS WSC - NEW WELL IN WOODBINE AQUIFER Q-168	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1981	1098	3
NEVADA	C	CONSERVATION, WATER LOSS CONTROL - NEVADA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1985	1449	1
NEVADA	C	CONSERVATION, WATER LOSS CONTROL - NEVADA	C	CONSTRUCTION FUNDING				1985	1449	2
NEVADA	C	CONSERVATION, WATER LOSS CONTROL - NEVADA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1985	1449	3
NEW FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - NEW FAIRVIEW	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1991	1450	1
NEW FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - NEW FAIRVIEW	C	CONSTRUCTION FUNDING				1991	1450	2
NEW FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - NEW FAIRVIEW	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1991	1450	3
NEW FAIRVIEW	C	NEW FAIRVIEW - CONNECT TO AND PURCHASE WATER FROM RHOME Q-202	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1991	1135	1
NEW FAIRVIEW	C	NEW FAIRVIEW - CONNECT TO AND PURCHASE WATER FROM RHOME Q-202	C	CONSTRUCTION FUNDING				1991	1135	2
NEW FAIRVIEW	C	NEW FAIRVIEW - CONNECT TO AND PURCHASE WATER FROM RHOME Q-202	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1991	1135	3
NEW HOPE	C	CONSERVATION, WATER LOSS CONTROL - NEW HOPE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1992	1451	1
NEW HOPE	C	CONSERVATION, WATER LOSS CONTROL - NEW HOPE	C	CONSTRUCTION FUNDING				1992	1451	2
NEW HOPE	C	CONSERVATION, WATER LOSS CONTROL - NEW HOPE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1992	1451	3
NEWARK	C	CONSERVATION, WATER LOSS CONTROL - NEWARK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1996	1452	1
NEWARK	C	CONSERVATION, WATER LOSS CONTROL - NEWARK	C	CONSTRUCTION FUNDING				1996	1452	2
NEWARK	C	CONSERVATION, WATER LOSS CONTROL - NEWARK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1996	1452	3
NEWARK	C	NEWARK - CONNECT TO AND PURCHASE WATER FROM RHOME Q-203	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				1996	1136	1
NEWARK	C	NEWARK - CONNECT TO AND PURCHASE WATER FROM RHOME Q-203	C	CONSTRUCTION FUNDING				1996	1136	2
NEWARK	C	NEWARK - CONNECT TO AND PURCHASE WATER FROM RHOME Q-203	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				1996	1136	3
NORTH COLLIN WSC	C	CONSERVATION, WATER LOSS CONTROL - NORTH COLLIN WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2011	1453	1
NORTH COLLIN WSC	C	CONSERVATION, WATER LOSS CONTROL - NORTH COLLIN WSC	C	CONSTRUCTION FUNDING				2011	1453	2
NORTH COLLIN WSC	C	CONSERVATION, WATER LOSS CONTROL - NORTH COLLIN WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2011	1453	3
NORTH RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - NORTH RICHLAND HILLS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				101	1454	1
NORTH RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - NORTH RICHLAND HILLS	C	CONSTRUCTION FUNDING				101	1454	2
NORTH RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - NORTH RICHLAND HILLS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				101	1454	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
NORTH RICHLAND HILLS	C	WATAUGA & N RICHLAND HILLS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER Q-199	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				101	1132	1
NORTH RICHLAND HILLS	C	WATAUGA & N RICHLAND HILLS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER Q-199	C	CONSTRUCTION FUNDING				101	1132	2
NORTH RICHLAND HILLS	C	WATAUGA & N RICHLAND HILLS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER Q-199	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				101	1132	3
NORTH TEXAS MWD	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	956	1
NORTH TEXAS MWD	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	CONSTRUCTION FUNDING	$0.00			102	956	2
NORTH TEXAS MWD	C	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	956	3
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA BLEND WITH SULPHUR BASIN WATER Q-26	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$60,000,000.00	2050		102	958	1
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA BLEND WITH SULPHUR BASIN WATER Q-26	C	CONSTRUCTION FUNDING	$142,000,000.00	2055		102	958	2
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA BLEND WITH SULPHUR BASIN WATER Q-26	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	958	3
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA SUPPLY BLEND WITH LOWER BOIS D'ARC Q-25	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$42,000,000.00	2029		102	957	1
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA SUPPLY BLEND WITH LOWER BOIS D'ARC Q-25	C	CONSTRUCTION FUNDING	$132,000,000.00	2030		102	957	2
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL LAKE TEXOMA SUPPLY BLEND WITH LOWER BOIS D'ARC Q-25	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	957	3
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL MEASURES TO ACCESS FULL LAKE LAVON YIELD Q-21	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	953	1
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL MEASURES TO ACCESS FULL LAKE LAVON YIELD Q-21	C	CONSTRUCTION FUNDING	$0.00			102	953	2
NORTH TEXAS MWD	C	NTMWD - ADDITIONAL MEASURES TO ACCESS FULL LAKE LAVON YIELD Q-21	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	953	3
NORTH TEXAS MWD	C	NTMWD - DREDGE LAKE LAVON Q-20	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	952	1
NORTH TEXAS MWD	C	NTMWD - DREDGE LAKE LAVON Q-20	C	CONSTRUCTION FUNDING	$0.00			102	952	2
NORTH TEXAS MWD	C	NTMWD - DREDGE LAKE LAVON Q-20	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	952	3
NORTH TEXAS MWD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR SITE Q-23	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$209,000,000.00	2016		102	955	1
NORTH TEXAS MWD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR SITE Q-23	C	CONSTRUCTION FUNDING	$417,000,000.00	2016		102	955	2
NORTH TEXAS MWD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR SITE Q-23	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	955	3
NORTH TEXAS MWD	C	NTMWD - MAIN STEM PUMP STATION Q-22	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	954	1
NORTH TEXAS MWD	C	NTMWD - MAIN STEM PUMP STATION Q-22	C	CONSTRUCTION FUNDING	$0.00			102	954	2
NORTH TEXAS MWD	C	NTMWD - MAIN STEM PUMP STATION Q-22	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	954	3
NORTH TEXAS MWD	C	NTMWD - OKLAHOMA WATER Q-27	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$42,000,000.00	2060		102	959	1
NORTH TEXAS MWD	C	NTMWD - OKLAHOMA WATER Q-27	C	CONSTRUCTION FUNDING	$125,000,000.00	2065		102	959	2
NORTH TEXAS MWD	C	NTMWD - OKLAHOMA WATER Q-27	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	959	3
NORTH TEXAS MWD	C	NTMWD - REMOVAL OF CHAPMAN SILT BARRIER Q-19	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	951	1
NORTH TEXAS MWD	C	NTMWD - REMOVAL OF CHAPMAN SILT BARRIER Q-19	C	CONSTRUCTION FUNDING	$0.00			102	951	2
NORTH TEXAS MWD	C	NTMWD - REMOVAL OF CHAPMAN SILT BARRIER Q-19	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	951	3
NORTH TEXAS MWD	C	NTMWD - TOLEDO BEND Q-57	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$173,000,000.00	2060		102	987	1
NORTH TEXAS MWD	C	NTMWD - TOLEDO BEND Q-57	C	CONSTRUCTION FUNDING	$742,000,000.00	2065		102	987	2
NORTH TEXAS MWD	C	NTMWD - TOLEDO BEND Q-57	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	987	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2010-2020 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	960	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2010-2020 Q-28	C	CONSTRUCTION FUNDING	$200,000,000.00	2016		102	960	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2010-2020 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	960	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2020-2030 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1145	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2020-2030 Q-28	C	CONSTRUCTION FUNDING	$500,000,000.00	2020		102	1145	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2020-2030 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	1145	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2030-2040 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1146	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2030-2040 Q-28	C	CONSTRUCTION FUNDING	$400,000,000.00	2030		102	1146	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2030-2040 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	1146	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2040-2050 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1147	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2040-2050 Q-28	C	CONSTRUCTION FUNDING	$400,000,000.00	2040		102	1147	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2040-2050 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	1147	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2050-2060 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1148	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2050-2060 Q-28	C	CONSTRUCTION FUNDING	$400,000,000.00	2050		102	1148	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2050-2060 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	1148	3
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2060-2070 Q-28	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1149	1
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2060-2070 Q-28	C	CONSTRUCTION FUNDING	$100,000,000.00	2060		102	1149	2
NORTH TEXAS MWD	C	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2060-2070 Q-28	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	1149	3
NORTH TEXAS MWD	C	Q-150 FANNIN COUNTY WATER SUPPLY PROJECT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			102	1080	1
NORTH TEXAS MWD	C	Q-150 FANNIN COUNTY WATER SUPPLY PROJECT	C	CONSTRUCTION FUNDING	$0.00			102	1080	2
NORTH TEXAS MWD	C	Q-150 FANNIN COUNTY WATER SUPPLY PROJECT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			102	1080	3
NORTH TEXAS MWD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$188,000,000.00	2035		102	835	1
NORTH TEXAS MWD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	CONSTRUCTION FUNDING	$910,000,000.00	2040		102	835	2
NORTH TEXAS MWD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			102	835	3
NORTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - NORTHLAKE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2015	1455	1
NORTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - NORTHLAKE	C	CONSTRUCTION FUNDING	$0.00			2015	1455	2
NORTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - NORTHLAKE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2015	1455	3
OAK GROVE	C	CONSERVATION, WATER LOSS CONTROL - OAK GROVE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2018	1457	1
OAK GROVE	C	CONSERVATION, WATER LOSS CONTROL - OAK GROVE	C	CONSTRUCTION FUNDING				2018	1457	2
OAK GROVE	C	CONSERVATION, WATER LOSS CONTROL - OAK GROVE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2018	1457	3
OAK LEAF	C	CONSERVATION, WATER LOSS CONTROL - OAK LEAF	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"n/a"			2020	1458	1
OAK LEAF	C	CONSERVATION, WATER LOSS CONTROL - OAK LEAF	C	CONSTRUCTION FUNDING	"n/a"			2020	1458	2
OAK LEAF	C	CONSERVATION, WATER LOSS CONTROL - OAK LEAF	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"n/a"			2020	1458	3
OAK POINT	C	CONSERVATION, WATER LOSS CONTROL - OAK POINT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2021	1459	1
OAK POINT	C	CONSERVATION, WATER LOSS CONTROL - OAK POINT	C	CONSTRUCTION FUNDING				2021	1459	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
OAK POINT	C	CONSERVATION, WATER LOSS CONTROL - OAK POINT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2021	1459	3
OVILLA	C	CONSERVATION, WATER LOSS CONTROL - OVILLA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2036	1461	1
OVILLA	C	CONSERVATION, WATER LOSS CONTROL - OVILLA	C	CONSTRUCTION FUNDING	"blank"			2036	1461	2
OVILLA	C	CONSERVATION, WATER LOSS CONTROL - OVILLA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2036	1461	3
OVILLA	C	OVILLA - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-92	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2036	1022	1
OVILLA	C	OVILLA - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-92	C	CONSTRUCTION FUNDING	"blank"			2036	1022	2
OVILLA	C	OVILLA - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-92	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2036	1022	3
PALMER	C	CONSERVATION, WATER LOSS CONTROL - PALMER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2042	1462	1
PALMER	C	CONSERVATION, WATER LOSS CONTROL - PALMER	C	CONSTRUCTION FUNDING				2042	1462	2
PALMER	C	CONSERVATION, WATER LOSS CONTROL - PALMER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2042	1462	3
PALMER	C	PALMER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-113	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2042	1043	1
PALMER	C	PALMER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-113	C	CONSTRUCTION FUNDING				2042	1043	2
PALMER	C	PALMER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-113	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2042	1043	3
PALOMA CREEK	C	CONSERVATION, WATER LOSS CONTROL - PALOMA CREEK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2891	1463	1
PALOMA CREEK	C	CONSERVATION, WATER LOSS CONTROL - PALOMA CREEK	C	CONSTRUCTION FUNDING	$0.00			2891	1463	2
PALOMA CREEK	C	CONSERVATION, WATER LOSS CONTROL - PALOMA CREEK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2891	1463	3
PANTEGO	C	CONSERVATION, WATER LOSS CONTROL - PANTEGO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2048	1464	1
PANTEGO	C	CONSERVATION, WATER LOSS CONTROL - PANTEGO	C	CONSTRUCTION FUNDING				2048	1464	2
PANTEGO	C	CONSERVATION, WATER LOSS CONTROL - PANTEGO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2048	1464	3
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-192	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2048	1123	1
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-192	C	CONSTRUCTION FUNDING				2048	1123	2
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-192	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2048	1123	3
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM FORT WORTH Q-193	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2048	1124	1
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM FORT WORTH Q-193	C	CONSTRUCTION FUNDING				2048	1124	2
PANTEGO	C	PANTEGO - CONNECT TO AND PURCHASE WATER FROM FORT WORTH Q-193	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2048	1124	3
PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2049	1465	1
PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER	C	CONSTRUCTION FUNDING				2049	1465	2
PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2049	1465	3
PARKER	C	PARKER - INCREASE PUMP STATION CAPACITY Q-76	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2049	1006	1
PARKER	C	PARKER - INCREASE PUMP STATION CAPACITY Q-76	C	CONSTRUCTION FUNDING				2049	1006	2
PARKER	C	PARKER - INCREASE PUMP STATION CAPACITY Q-76	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2049	1006	3
PARKER COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2844	1466	1
PARKER COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY SUD	C	CONSTRUCTION FUNDING				2844	1466	2
PARKER COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2844	1466	3
PARKER COUNTY SUD	C	PARKER COUNTY SUD - ADDITIONAL BRA WITH TREATMENT PLANT Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2844	927	1
PARKER COUNTY SUD	C	PARKER COUNTY SUD - ADDITIONAL BRA WITH TREATMENT PLANT Q-13	C	CONSTRUCTION FUNDING				2844	927	2
PARKER COUNTY SUD	C	PARKER COUNTY SUD - ADDITIONAL BRA WITH TREATMENT PLANT Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2844	927	3
PARKER COUNTY SUD	C	PARKER COUNTY SUD - NEW WELLS IN TRINITY AQUIFER Q-172	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2844	1102	1
PARKER COUNTY SUD	C	PARKER COUNTY SUD - NEW WELLS IN TRINITY AQUIFER Q-172	C	CONSTRUCTION FUNDING				2844	1102	2
PARKER COUNTY SUD	C	PARKER COUNTY SUD - NEW WELLS IN TRINITY AQUIFER Q-172	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2844	1102	3
PAYNE SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - PAYNE SPRINGS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2053	1467	1
PAYNE SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - PAYNE SPRINGS	C	CONSTRUCTION FUNDING				2053	1467	2
PAYNE SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - PAYNE SPRINGS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2053	1467	3
PAYNE SPRINGS	C	PAYNE SPRINGS - NEW WELL IN CARRIZO-WILCOX AQUIFER Q-148	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2053	1078	1
PAYNE SPRINGS	C	PAYNE SPRINGS - NEW WELL IN CARRIZO-WILCOX AQUIFER Q-148	C	CONSTRUCTION FUNDING				2053	1078	2
PAYNE SPRINGS	C	PAYNE SPRINGS - NEW WELL IN CARRIZO-WILCOX AQUIFER Q-148	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2053	1078	3
PECAN HILL	C	CONSERVATION, WATER LOSS CONTROL - PECAN HILL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2057	1468	1
PECAN HILL	C	CONSERVATION, WATER LOSS CONTROL - PECAN HILL	C	CONSTRUCTION FUNDING				2057	1468	2
PECAN HILL	C	CONSERVATION, WATER LOSS CONTROL - PECAN HILL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2057	1468	3
PELICAN BAY	C	CONSERVATION, WATER LOSS CONTROL - PELICAN BAY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2060	1469	1
PELICAN BAY	C	CONSERVATION, WATER LOSS CONTROL - PELICAN BAY	C	CONSTRUCTION FUNDING				2060	1469	2
PELICAN BAY	C	CONSERVATION, WATER LOSS CONTROL - PELICAN BAY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2060	1469	3
PELICAN BAY	C	PELICAN BAY - CONNECT TO AND PURCHASE WATER FROM AZLE (TRWD) Q-194	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2060	1125	1
PELICAN BAY	C	PELICAN BAY - CONNECT TO AND PURCHASE WATER FROM AZLE (TRWD) Q-194	C	CONSTRUCTION FUNDING				2060	1125	2
PELICAN BAY	C	PELICAN BAY - CONNECT TO AND PURCHASE WATER FROM AZLE (TRWD) Q-194	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2060	1125	3
PILOT POINT	C	CONSERVATION, WATER LOSS CONTROL - PILOT POINT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2068	1470	1
PILOT POINT	C	CONSERVATION, WATER LOSS CONTROL - PILOT POINT	C	CONSTRUCTION FUNDING				2068	1470	2
PILOT POINT	C	CONSERVATION, WATER LOSS CONTROL - PILOT POINT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2068	1470	3
PILOT POINT	C	PILOT POINT - NEW WELL IN TRINITY AQUIFER Q-106	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2068	1036	1
PILOT POINT	C	PILOT POINT - NEW WELL IN TRINITY AQUIFER Q-106	C	CONSTRUCTION FUNDING				2068	1036	2
PILOT POINT	C	PILOT POINT - NEW WELL IN TRINITY AQUIFER Q-106	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2068	1036	3
PLANO	C	CONSERVATION, WATER LOSS CONTROL - PLANO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2076	1471	1
PLANO	C	CONSERVATION, WATER LOSS CONTROL - PLANO	C	CONSTRUCTION FUNDING				2076	1471	2
PLANO	C	CONSERVATION, WATER LOSS CONTROL - PLANO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2076	1471	3
PONDER	C	CONSERVATION, WATER LOSS CONTROL - PONDER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$750,000.00	2017		2087	1472	1
PONDER	C	CONSERVATION, WATER LOSS CONTROL - PONDER	C	CONSTRUCTION FUNDING	$3,000,000.00	2019		2087	1472	2
PONDER	C	CONSERVATION, WATER LOSS CONTROL - PONDER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2087	1472	3
POST OAK BEND CITY	C	CONSERVATION, WATER LOSS CONTROL - POST OAK BEND CITY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2500	1473	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
POST OAK BEND CITY	C	CONSERVATION, WATER LOSS CONTROL - POST OAK BEND CITY	C	CONSTRUCTION FUNDING				2500	1473	2
POST OAK BEND CITY	C	CONSERVATION, WATER LOSS CONTROL - POST OAK BEND CITY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2500	1473	3
POTTSBORO	C	CONSERVATION, WATER LOSS CONTROL - POTTSBORO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2098	1474	1
POTTSBORO	C	CONSERVATION, WATER LOSS CONTROL - POTTSBORO	C	CONSTRUCTION FUNDING				2098	1474	2
POTTSBORO	C	CONSERVATION, WATER LOSS CONTROL - POTTSBORO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2098	1474	3
PRINCETON	C	CONSERVATION, WATER LOSS CONTROL - PRINCETON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2103	1475	1
PRINCETON	C	CONSERVATION, WATER LOSS CONTROL - PRINCETON	C	CONSTRUCTION FUNDING				2103	1475	2
PRINCETON	C	CONSERVATION, WATER LOSS CONTROL - PRINCETON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2103	1475	3
PROSPER	C	CONSERVATION, WATER LOSS CONTROL - PROSPER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2106	1476	1
PROSPER	C	CONSERVATION, WATER LOSS CONTROL - PROSPER	C	CONSTRUCTION FUNDING	$0.00			2106	1476	2
PROSPER	C	CONSERVATION, WATER LOSS CONTROL - PROSPER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2106	1476	3
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE I) Q-77	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2106	1007	1
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE I) Q-77	C	CONSTRUCTION FUNDING	$0.00			2106	1007	2
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE I) Q-77	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2106	1007	3
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE II) Q-78	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2106	1008	1
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE II) Q-78	C	CONSTRUCTION FUNDING	$0.00			2106	1008	2
PROSPER	C	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE II) Q-78	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2106	1008	3
PROVIDENCE VILLAGE WCID	C	CONSERVATION, WATER LOSS CONTROL - PROVIDENCE VILLAGE WCID	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2868	1477	1
PROVIDENCE VILLAGE WCID	C	CONSERVATION, WATER LOSS CONTROL - PROVIDENCE VILLAGE WCID	C	CONSTRUCTION FUNDING				2868	1477	2
PROVIDENCE VILLAGE WCID	C	CONSERVATION, WATER LOSS CONTROL - PROVIDENCE VILLAGE WCID	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2868	1477	3
RED OAK	C	CONSERVATION, WATER LOSS CONTROL - RED OAK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2120	1478	1
RED OAK	C	CONSERVATION, WATER LOSS CONTROL - RED OAK	C	CONSTRUCTION FUNDING				2120	1478	2
RED OAK	C	CONSERVATION, WATER LOSS CONTROL - RED OAK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2120	1478	3
RENO	C	CONSERVATION, WATER LOSS CONTROL - RENO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2486	1479	1
RENO	C	CONSERVATION, WATER LOSS CONTROL - RENO	C	CONSTRUCTION FUNDING				2486	1479	2
RENO	C	CONSERVATION, WATER LOSS CONTROL - RENO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2486	1479	3
RHOME	C	CONSERVATION, WATER LOSS CONTROL - RHOME	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2125	1480	1
RHOME	C	CONSERVATION, WATER LOSS CONTROL - RHOME	C	CONSTRUCTION FUNDING				2125	1480	2
RHOME	C	CONSERVATION, WATER LOSS CONTROL - RHOME	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2125	1480	3
RICE	C	CONSERVATION, WATER LOSS CONTROL - RICE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2127	1481	1
RICE	C	CONSERVATION, WATER LOSS CONTROL - RICE	C	CONSTRUCTION FUNDING				2127	1481	2
RICE	C	CONSERVATION, WATER LOSS CONTROL - RICE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2127	1481	3
RICE WSC	C	CONSERVATION, WATER LOSS CONTROL - RICE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2128	1482	1
RICE WSC	C	CONSERVATION, WATER LOSS CONTROL - RICE WSC	C	CONSTRUCTION FUNDING				2128	1482	2
RICE WSC	C	CONSERVATION, WATER LOSS CONTROL - RICE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2128	1482	3
RICE WSC	C	RICE WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CORSICANA Q-114	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2128	1044	1
RICE WSC	C	RICE WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CORSICANA Q-114	C	CONSTRUCTION FUNDING				2128	1044	2
RICE WSC	C	RICE WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CORSICANA Q-114	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2128	1044	3
RICHARDSON	C	CONSERVATION, WATER LOSS CONTROL - RICHARDSON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2129	1483	1
RICHARDSON	C	CONSERVATION, WATER LOSS CONTROL - RICHARDSON	C	CONSTRUCTION FUNDING				2129	1483	2
RICHARDSON	C	CONSERVATION, WATER LOSS CONTROL - RICHARDSON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2129	1483	3
RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - RICHLAND HILLS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2130	1484	1
RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - RICHLAND HILLS	C	CONSTRUCTION FUNDING	"blank"			2130	1484	2
RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - RICHLAND HILLS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2130	1484	3
RIVER OAKS	C	CONSERVATION, WATER LOSS CONTROL - RIVER OAKS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2142	1485	1
RIVER OAKS	C	CONSERVATION, WATER LOSS CONTROL - RIVER OAKS	C	CONSTRUCTION FUNDING				2142	1485	2
RIVER OAKS	C	CONSERVATION, WATER LOSS CONTROL - RIVER OAKS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2142	1485	3
ROANOKE	C	CONSERVATION, IRRIGATION RESTRICTION - ROANOKE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2145	1589	1
ROANOKE	C	CONSERVATION, IRRIGATION RESTRICTION - ROANOKE	C	CONSTRUCTION FUNDING				2145	1589	2
ROANOKE	C	CONSERVATION, IRRIGATION RESTRICTION - ROANOKE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2145	1589	3
ROANOKE	C	CONSERVATION, WATER LOSS CONTROL - ROANOKE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2145	1486	1
ROANOKE	C	CONSERVATION, WATER LOSS CONTROL - ROANOKE	C	CONSTRUCTION FUNDING				2145	1486	2
ROANOKE	C	CONSERVATION, WATER LOSS CONTROL - ROANOKE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2145	1486	3
ROCKETT SUD	C	CONSERVATION, WATER LOSS CONTROL - ROCKETT SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	1487	1
ROCKETT SUD	C	CONSERVATION, WATER LOSS CONTROL - ROCKETT SUD	C	CONSTRUCTION FUNDING				112	1487	2
ROCKETT SUD	C	CONSERVATION, WATER LOSS CONTROL - ROCKETT SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	1487	3
ROCKETT SUD	C	ROCKETT SUD - DIRECT CONNECTION TO DWU Q-116	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	1046	1
ROCKETT SUD	C	ROCKETT SUD - DIRECT CONNECTION TO DWU Q-116	C	CONSTRUCTION FUNDING				112	1046	2
ROCKETT SUD	C	ROCKETT SUD - DIRECT CONNECTION TO DWU Q-116	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	1046	3
ROCKETT SUD	C	ROCKETT SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM MIDLOTHIAN Q-115	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	1045	1
ROCKETT SUD	C	ROCKETT SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM MIDLOTHIAN Q-115	C	CONSTRUCTION FUNDING				112	1045	2
ROCKETT SUD	C	ROCKETT SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM MIDLOTHIAN Q-115	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	1045	3
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	928	1
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				112	928	2
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	928	3
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	929	1
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				112	929	2
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	929	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	930	1
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING				112	930	2
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	930	3
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				112	931	1
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	CONSTRUCTION FUNDING				112	931	2
ROCKETT SUD	C	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 4 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				112	931	3
ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			113	1488	1
ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL	C	CONSTRUCTION FUNDING	$0.00			113	1488	2
ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			113	1488	3
ROCKWALL	C	ROCKWALL - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-183	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			113	1113	1
ROCKWALL	C	ROCKWALL - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-183	C	CONSTRUCTION FUNDING	$0.00			113	1113	2
ROCKWALL	C	ROCKWALL - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-183	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			113	1113	3
ROSE HILL SUD	C	CONSERVATION, WATER LOSS CONTROL - ROSE HILL SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2847	1489	1
ROSE HILL SUD	C	CONSERVATION, WATER LOSS CONTROL - ROSE HILL SUD	C	CONSTRUCTION FUNDING				2847	1489	2
ROSE HILL SUD	C	CONSERVATION, WATER LOSS CONTROL - ROSE HILL SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2847	1489	3
ROWLETT	C	CONSERVATION, WATER LOSS CONTROL - ROWLETT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2162	1490	1
ROWLETT	C	CONSERVATION, WATER LOSS CONTROL - ROWLETT	C	CONSTRUCTION FUNDING				2162	1490	2
ROWLETT	C	CONSERVATION, WATER LOSS CONTROL - ROWLETT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2162	1490	3
ROYSE CITY	C	CONSERVATION, WATER LOSS CONTROL - ROYSE CITY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2164	1491	1
ROYSE CITY	C	CONSERVATION, WATER LOSS CONTROL - ROYSE CITY	C	CONSTRUCTION FUNDING				2164	1491	2
ROYSE CITY	C	CONSERVATION, WATER LOSS CONTROL - ROYSE CITY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2164	1491	3
RUNAWAY BAY	C	CONSERVATION, WATER LOSS CONTROL - RUNAWAY BAY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2166	1492	1
RUNAWAY BAY	C	CONSERVATION, WATER LOSS CONTROL - RUNAWAY BAY	C	CONSTRUCTION FUNDING				2166	1492	2
RUNAWAY BAY	C	CONSERVATION, WATER LOSS CONTROL - RUNAWAY BAY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2166	1492	3
RUNAWAY BAY	C	RUNAWAY BAY - INCREASE CAPACITY OF LAKE INTAKE Q-204	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2166	1137	1
RUNAWAY BAY	C	RUNAWAY BAY - INCREASE CAPACITY OF LAKE INTAKE Q-204	C	CONSTRUCTION FUNDING				2166	1137	2
RUNAWAY BAY	C	RUNAWAY BAY - INCREASE CAPACITY OF LAKE INTAKE Q-204	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2166	1137	3
RUNAWAY BAY	C	RUNAWAY BAY - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2166	932	1
RUNAWAY BAY	C	RUNAWAY BAY - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				2166	932	2
RUNAWAY BAY	C	RUNAWAY BAY - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2166	932	3
SACHSE	C	CONSERVATION, WATER LOSS CONTROL - SACHSE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2171	1493	1
SACHSE	C	CONSERVATION, WATER LOSS CONTROL - SACHSE	C	CONSTRUCTION FUNDING				2171	1493	2
SACHSE	C	CONSERVATION, WATER LOSS CONTROL - SACHSE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2171	1493	3
SAGINAW	C	CONSERVATION, WATER LOSS CONTROL - SAGINAW	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2172	1494	1
SAGINAW	C	CONSERVATION, WATER LOSS CONTROL - SAGINAW	C	CONSTRUCTION FUNDING				2172	1494	2
SAGINAW	C	CONSERVATION, WATER LOSS CONTROL - SAGINAW	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2172	1494	3
SANGER	C	CONSERVATION, WATER LOSS CONTROL - SANGER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2184	1495	1
SANGER	C	CONSERVATION, WATER LOSS CONTROL - SANGER	C	CONSTRUCTION FUNDING	$0.00			2184	1495	2
SANGER	C	CONSERVATION, WATER LOSS CONTROL - SANGER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2184	1495	3
SANSOM PARK	C	CONSERVATION, WATER LOSS CONTROL - SANSOM PARK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2591	1496	1
SANSOM PARK	C	CONSERVATION, WATER LOSS CONTROL - SANSOM PARK	C	CONSTRUCTION FUNDING				2591	1496	2
SANSOM PARK	C	CONSERVATION, WATER LOSS CONTROL - SANSOM PARK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2591	1496	3
SARDIS-LONE ELM WSC	C	CONSERVATION, WATER LOSS CONTROL - SARDIS-LONE ELM WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2189	1497	1
SARDIS-LONE ELM WSC	C	CONSERVATION, WATER LOSS CONTROL - SARDIS-LONE ELM WSC	C	CONSTRUCTION FUNDING				2189	1497	2
SARDIS-LONE ELM WSC	C	CONSERVATION, WATER LOSS CONTROL - SARDIS-LONE ELM WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2189	1497	3
SARDIS-LONE ELM WSC	C	SARDIS LONE-ELM - CONNECT TO AND PURCHASE WATER FROM MIDLOTHIAN Q-117	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2189	1047	1
SARDIS-LONE ELM WSC	C	SARDIS LONE-ELM - CONNECT TO AND PURCHASE WATER FROM MIDLOTHIAN Q-117	C	CONSTRUCTION FUNDING				2189	1047	2
SARDIS-LONE ELM WSC	C	SARDIS LONE-ELM - CONNECT TO AND PURCHASE WATER FROM MIDLOTHIAN Q-117	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2189	1047	3
SARDIS-LONE ELM WSC	C	SARDIS-LONE ELM WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKE Q-118	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2189	1048	1
SARDIS-LONE ELM WSC	C	SARDIS-LONE ELM WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKE Q-118	C	CONSTRUCTION FUNDING				2189	1048	2
SARDIS-LONE ELM WSC	C	SARDIS-LONE ELM WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKE Q-118	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2189	1048	3
SAVOY	C	CONSERVATION, WATER LOSS CONTROL - SAVOY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2190	1498	1
SAVOY	C	CONSERVATION, WATER LOSS CONTROL - SAVOY	C	CONSTRUCTION FUNDING				2190	1498	2
SAVOY	C	CONSERVATION, WATER LOSS CONTROL - SAVOY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2190	1498	3
SCURRY	C	CONSERVATION, WATER LOSS CONTROL - SCURRY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2501	1499	1
SCURRY	C	CONSERVATION, WATER LOSS CONTROL - SCURRY	C	CONSTRUCTION FUNDING				2501	1499	2
SCURRY	C	CONSERVATION, WATER LOSS CONTROL - SCURRY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2501	1499	3
SEAGOVILLE	C	CONSERVATION, WATER LOSS CONTROL - SEAGOVILLE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			121	1500	1
SEAGOVILLE	C	CONSERVATION, WATER LOSS CONTROL - SEAGOVILLE	C	CONSTRUCTION FUNDING	$0.00			121	1500	2
SEAGOVILLE	C	CONSERVATION, WATER LOSS CONTROL - SEAGOVILLE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			121	1500	3
SEIS LAGOS UD	C	CONSERVATION, WATER LOSS CONTROL - SEIS LAGOS UD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2872	1501	1
SEIS LAGOS UD	C	CONSERVATION, WATER LOSS CONTROL - SEIS LAGOS UD	C	CONSTRUCTION FUNDING				2872	1501	2
SEIS LAGOS UD	C	CONSERVATION, WATER LOSS CONTROL - SEIS LAGOS UD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2872	1501	3
SEVEN POINTS	C	CONSERVATION, WATER LOSS CONTROL - SEVEN POINTS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2200	1502	1
SEVEN POINTS	C	CONSERVATION, WATER LOSS CONTROL - SEVEN POINTS	C	CONSTRUCTION FUNDING				2200	1502	2
SEVEN POINTS	C	CONSERVATION, WATER LOSS CONTROL - SEVEN POINTS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2200	1502	3
SHADY SHORES	C	CONSERVATION, WATER LOSS CONTROL - SHADY SHORES	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2203	1503	1
SHADY SHORES	C	CONSERVATION, WATER LOSS CONTROL - SHADY SHORES	C	CONSTRUCTION FUNDING				2203	1503	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
SHADY SHORES	C	CONSERVATION, WATER LOSS CONTROL - SHADY SHORES	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2203	1503	3
SHERMAN	C	CONSERVATION, WATER LOSS CONTROL - SHERMAN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2210	1504	1
SHERMAN	C	CONSERVATION, WATER LOSS CONTROL - SHERMAN	C	CONSTRUCTION FUNDING				2210	1504	2
SHERMAN	C	CONSERVATION, WATER LOSS CONTROL - SHERMAN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2210	1504	3
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2210	933	1
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				2210	933	2
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2210	933	3
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2210	934	1
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				2210	934	2
SHERMAN	C	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2210	934	3
SHERMAN	C	SHERMAN - NEW 10 MGD DESALINATION PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2210	855	1
SHERMAN	C	SHERMAN - NEW 10 MGD DESALINATION PLANT Q-12	C	CONSTRUCTION FUNDING				2210	855	2
SHERMAN	C	SHERMAN - NEW 10 MGD DESALINATION PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2210	855	3
SOUTH GRAYSON WSC	C	CONSERVATION, WATER LOSS CONTROL - SOUTH GRAYSON WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2227	1505	1
SOUTH GRAYSON WSC	C	CONSERVATION, WATER LOSS CONTROL - SOUTH GRAYSON WSC	C	CONSTRUCTION FUNDING				2227	1505	2
SOUTH GRAYSON WSC	C	CONSERVATION, WATER LOSS CONTROL - SOUTH GRAYSON WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2227	1505	3
SOUTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - SOUTHLAKE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2234	1506	1
SOUTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - SOUTHLAKE	C	CONSTRUCTION FUNDING				2234	1506	2
SOUTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - SOUTHLAKE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2234	1506	3
SOUTHLAKE	C	SOUTHLAKE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-195	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2234	1126	1
SOUTHLAKE	C	SOUTHLAKE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-195	C	CONSTRUCTION FUNDING				2234	1126	2
SOUTHLAKE	C	SOUTHLAKE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-195	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2234	1126	3
SOUTHMAYD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHMAYD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2235	1507	1
SOUTHMAYD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHMAYD	C	CONSTRUCTION FUNDING				2235	1507	2
SOUTHMAYD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHMAYD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2235	1507	3
SOUTHMAYD	C	SOUTHMAYD - NEW WELLS IN WOODBINE AQUIFER Q-141	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2235	1071	1
SOUTHMAYD	C	SOUTHMAYD - NEW WELLS IN WOODBINE AQUIFER Q-141	C	CONSTRUCTION FUNDING				2235	1071	2
SOUTHMAYD	C	SOUTHMAYD - NEW WELLS IN WOODBINE AQUIFER Q-141	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2235	1071	3
SOUTHWEST FANNIN COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHWEST FANNIN COUNTY SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2237	1508	1
SOUTHWEST FANNIN COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHWEST FANNIN COUNTY SUD	C	CONSTRUCTION FUNDING				2237	1508	2
SOUTHWEST FANNIN COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHWEST FANNIN COUNTY SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2237	1508	3
SOUTHWEST FANNIN COUNTY SUD	C	SOUTHWEST FANNIN CO SUD - NEW WELL IN WOODBINE AQUIFER Q-130	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2237	1060	1
SOUTHWEST FANNIN COUNTY SUD	C	SOUTHWEST FANNIN CO SUD - NEW WELL IN WOODBINE AQUIFER Q-130	C	CONSTRUCTION FUNDING				2237	1060	2
SOUTHWEST FANNIN COUNTY SUD	C	SOUTHWEST FANNIN CO SUD - NEW WELL IN WOODBINE AQUIFER Q-130	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2237	1060	3
SPRINGTOWN	C	CONSERVATION, WATER LOSS CONTROL - SPRINGTOWN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2243	1509	1
SPRINGTOWN	C	CONSERVATION, WATER LOSS CONTROL - SPRINGTOWN	C	CONSTRUCTION FUNDING				2243	1509	2
SPRINGTOWN	C	CONSERVATION, WATER LOSS CONTROL - SPRINGTOWN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2243	1509	3
SPRINGTOWN	C	SPRINGTOWN - LAKE INTAKE MODIFICATIONS Q-175	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2243	1105	1
SPRINGTOWN	C	SPRINGTOWN - LAKE INTAKE MODIFICATIONS Q-175	C	CONSTRUCTION FUNDING				2243	1105	2
SPRINGTOWN	C	SPRINGTOWN - LAKE INTAKE MODIFICATIONS Q-175	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2243	1105	3
SPRINGTOWN	C	SPRINGTOWN - NEW WELL IN TRINITY AQUIFER Q-176	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2243	1106	1
SPRINGTOWN	C	SPRINGTOWN - NEW WELL IN TRINITY AQUIFER Q-176	C	CONSTRUCTION FUNDING				2243	1106	2
SPRINGTOWN	C	SPRINGTOWN - NEW WELL IN TRINITY AQUIFER Q-176	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2243	1106	3
ST. PAUL	C	CONSERVATION, WATER LOSS CONTROL - ST. PAUL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2929	1510	1
ST. PAUL	C	CONSERVATION, WATER LOSS CONTROL - ST. PAUL	C	CONSTRUCTION FUNDING	$0.00			2929	1510	2
ST. PAUL	C	CONSERVATION, WATER LOSS CONTROL - ST. PAUL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2929	1510	3
STEAM ELECTRIC POWER, ELLIS	C	ELLIS COUNTY SEP - PURCHASE WATER FROM WAXAHACHIE Q-107	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2266	1037	1
STEAM ELECTRIC POWER, ELLIS	C	ELLIS COUNTY SEP - PURCHASE WATER FROM WAXAHACHIE Q-107	C	CONSTRUCTION FUNDING				2266	1037	2
STEAM ELECTRIC POWER, ELLIS	C	ELLIS COUNTY SEP - PURCHASE WATER FROM WAXAHACHIE Q-107	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2266	1037	3
STEAM ELECTRIC POWER, FANNIN	C	FANNIN COUNTY SEP - CONNECT TO AND PURCHASE WATER FROM LAKE TEXOMA Q-128	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2268	1058	1
STEAM ELECTRIC POWER, FANNIN	C	FANNIN COUNTY SEP - CONNECT TO AND PURCHASE WATER FROM LAKE TEXOMA Q-128	C	CONSTRUCTION FUNDING				2268	1058	2
STEAM ELECTRIC POWER, FANNIN	C	FANNIN COUNTY SEP - CONNECT TO AND PURCHASE WATER FROM LAKE TEXOMA Q-128	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2268	1058	3
STEAM ELECTRIC POWER, GRAYSON	C	GRAYSON COUNTY STEAM ELECTRIC POWER - DIRECT REUSE FROM SHERMAN Q-211	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2492	1144	1
STEAM ELECTRIC POWER, GRAYSON	C	GRAYSON COUNTY STEAM ELECTRIC POWER - DIRECT REUSE FROM SHERMAN Q-211	C	CONSTRUCTION FUNDING				2492	1144	2
STEAM ELECTRIC POWER, GRAYSON	C	GRAYSON COUNTY STEAM ELECTRIC POWER - DIRECT REUSE FROM SHERMAN Q-211	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2492	1144	3
STEAM ELECTRIC POWER, NAVARRO	C	NAVARRO COUNTY SEP - PURCHASE WATER FROM CORSICANA Q-167	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2493	1097	1
STEAM ELECTRIC POWER, NAVARRO	C	NAVARRO COUNTY SEP - PURCHASE WATER FROM CORSICANA Q-167	C	CONSTRUCTION FUNDING				2493	1097	2
STEAM ELECTRIC POWER, NAVARRO	C	NAVARRO COUNTY SEP - PURCHASE WATER FROM CORSICANA Q-167	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2493	1097	3
STEAM ELECTRIC POWER, TARRANT	C	TARRANT COUNTY SEP - DIRECT REUSE Q-196	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2318	1127	1
STEAM ELECTRIC POWER, TARRANT	C	TARRANT COUNTY SEP - DIRECT REUSE Q-196	C	CONSTRUCTION FUNDING				2318	1127	2
STEAM ELECTRIC POWER, TARRANT	C	TARRANT COUNTY SEP - DIRECT REUSE Q-196	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2318	1127	3
SUNNYVALE	C	CONSERVATION, WATER LOSS CONTROL - SUNNYVALE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2344	1511	1
SUNNYVALE	C	CONSERVATION, WATER LOSS CONTROL - SUNNYVALE	C	CONSTRUCTION FUNDING				2344	1511	2
SUNNYVALE	C	CONSERVATION, WATER LOSS CONTROL - SUNNYVALE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2344	1511	3
SUNNYVALE	C	SUNNYVALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-93	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2344	1023	1
SUNNYVALE	C	SUNNYVALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-93	C	CONSTRUCTION FUNDING				2344	1023	2
SUNNYVALE	C	SUNNYVALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-93	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2344	1023	3
TALTY	C	CONSERVATION, WATER LOSS CONTROL - TALTY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2352	1512	1

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
TALTY	C	CONSERVATION, WATER LOSS CONTROL - TALTY	C	CONSTRUCTION FUNDING				2352	1512	2
TALTY	C	CONSERVATION, WATER LOSS CONTROL - TALTY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2352	1512	3
TALTY WSC	C	CONSERVATION, WATER LOSS CONTROL - TALTY WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2853	1513	1
TALTY WSC	C	CONSERVATION, WATER LOSS CONTROL - TALTY WSC	C	CONSTRUCTION FUNDING				2853	1513	2
TALTY WSC	C	CONSERVATION, WATER LOSS CONTROL - TALTY WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2853	1513	3
TARRANT REGIONAL WD	C	DWU - CONNECT LAKE PALESTINE Q-36	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			129	966	1
TARRANT REGIONAL WD	C	DWU - CONNECT LAKE PALESTINE Q-36	C	CONSTRUCTION FUNDING	$0.00			129	966	2
TARRANT REGIONAL WD	C	DWU - CONNECT LAKE PALESTINE Q-36	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	966	3
TARRANT REGIONAL WD	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			129	977	1
TARRANT REGIONAL WD	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	CONSTRUCTION FUNDING	$67,000,000.00	2018		129	977	2
TARRANT REGIONAL WD	C	DWU - IPL INFRASTRUCTURE IMPROVEMENTS Q-47	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	977	3
TARRANT REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$115,000,000.00	2030		129	835	1
TARRANT REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	CONSTRUCTION FUNDING	$2,715,288,000.00	2035		129	835	2
TARRANT REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	835	3
TARRANT REGIONAL WD	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			129	978	1
TARRANT REGIONAL WD	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	CONSTRUCTION FUNDING	$230,700,000.00	2018		129	978	2
TARRANT REGIONAL WD	C	TRWD & DWU INTEGRATED PIPELINE Q-48	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	978	3
TARRANT REGIONAL WD	C	TRWD - CEDAR CREEK AND RICHLAND-CHAMBERS WETLANDS REUSE Q-49	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$20,000,000.00	2020		129	979	1
TARRANT REGIONAL WD	C	TRWD - CEDAR CREEK AND RICHLAND-CHAMBERS WETLANDS REUSE Q-49	C	CONSTRUCTION FUNDING	$150,000,000.00	2024		129	979	2
TARRANT REGIONAL WD	C	TRWD - CEDAR CREEK AND RICHLAND-CHAMBERS WETLANDS REUSE Q-49	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	979	3
TARRANT REGIONAL WD	C	TRWD - LAKE TEHUACANA Q-50	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$74,273,000.00	2020		129	980	1
TARRANT REGIONAL WD	C	TRWD - LAKE TEHUACANA Q-50	C	CONSTRUCTION FUNDING	$668,457,000.00	2028		129	980	2
TARRANT REGIONAL WD	C	TRWD - LAKE TEHUACANA Q-50	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			129	980	3
TEAGUE	C	CONSERVATION, WATER LOSS CONTROL - TEAGUE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2357	1514	1
TEAGUE	C	CONSERVATION, WATER LOSS CONTROL - TEAGUE	C	CONSTRUCTION FUNDING				2357	1514	2
TEAGUE	C	CONSERVATION, WATER LOSS CONTROL - TEAGUE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2357	1514	3
TEAGUE	C	TEAGUE - NEW WELLS IN TRINITY AQUIFER Q-135	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2357	1065	1
TEAGUE	C	TEAGUE - NEW WELLS IN TRINITY AQUIFER Q-135	C	CONSTRUCTION FUNDING				2357	1065	2
TEAGUE	C	TEAGUE - NEW WELLS IN TRINITY AQUIFER Q-135	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2357	1065	3
TERRELL	C	CONSERVATION, WATER LOSS CONTROL - TERRELL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1515	1
TERRELL	C	CONSERVATION, WATER LOSS CONTROL - TERRELL	C	CONSTRUCTION FUNDING				130	1515	2
TERRELL	C	CONSERVATION, WATER LOSS CONTROL - TERRELL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1515	3
TERRELL	C	TERRELL - GROUND STORAGE TANK AND PUMP STATION EXPANSION AT WEST SIDE PUMP STATION Q-157	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1087	1
TERRELL	C	TERRELL - GROUND STORAGE TANK AND PUMP STATION EXPANSION AT WEST SIDE PUMP STATION Q-157	C	CONSTRUCTION FUNDING				130	1087	2
TERRELL	C	TERRELL - GROUND STORAGE TANK AND PUMP STATION EXPANSION AT WEST SIDE PUMP STATION Q-157	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1087	3
TERRELL	C	TERRELL - LINE TO FEED WHOLE CUSTOMER (KAUFMAN CO WCID) Q-158	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1088	1
TERRELL	C	TERRELL - LINE TO FEED WHOLE CUSTOMER (KAUFMAN CO WCID) Q-158	C	CONSTRUCTION FUNDING				130	1088	2
TERRELL	C	TERRELL - LINE TO FEED WHOLE CUSTOMER (KAUFMAN CO WCID) Q-158	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1088	3
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT EXTENSION) Q-160	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1090	1
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT EXTENSION) Q-160	C	CONSTRUCTION FUNDING				130	1090	2
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT EXTENSION) Q-160	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1090	3
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT) Q-159	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1089	1
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT) Q-159	C	CONSTRUCTION FUNDING				130	1089	2
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT) Q-159	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1089	3
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMERS (LAS LOMAS MUD AND KAUFMAN CO WCID) Q-161	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1091	1
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMERS (LAS LOMAS MUD AND KAUFMAN CO WCID) Q-161	C	CONSTRUCTION FUNDING				130	1091	2
TERRELL	C	TERRELL - LINE TO FEED WHOLESALE CUSTOMERS (LAS LOMAS MUD AND KAUFMAN CO WCID) Q-161	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1091	3
TERRELL	C	TERRELL - LINES ALONG I-20 TO COMPLETE LOOPING IN SOUTHERN SYSTEM FOR WHOLESALE CUSTOMERS Q-162	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1092	1
TERRELL	C	TERRELL - LINES ALONG I-20 TO COMPLETE LOOPING IN SOUTHERN SYSTEM FOR WHOLESALE CUSTOMERS Q-162	C	CONSTRUCTION FUNDING				130	1092	2
TERRELL	C	TERRELL - LINES ALONG I-20 TO COMPLETE LOOPING IN SOUTHERN SYSTEM FOR WHOLESALE CUSTOMERS Q-162	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1092	3
TERRELL	C	TERRELL - NEW DELIVERY POINT CONNECTION FROM NTMWD (WATERLINES, PUMP STATION, & GROUND STORAGE Q-163	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				130	1093	1
TERRELL	C	TERRELL - NEW DELIVERY POINT CONNECTION FROM NTMWD (WATERLINES, PUMP STATION, & GROUND STORAGE Q-163	C	CONSTRUCTION FUNDING				130	1093	2
TERRELL	C	TERRELL - NEW DELIVERY POINT CONNECTION FROM NTMWD (WATERLINES, PUMP STATION, & GROUND STORAGE Q-163	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				130	1093	3
THE COLONY	C	CONSERVATION, WATER LOSS CONTROL - THE COLONY	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2363	1516	1
THE COLONY	C	CONSERVATION, WATER LOSS CONTROL - THE COLONY	C	CONSTRUCTION FUNDING				2363	1516	2
THE COLONY	C	CONSERVATION, WATER LOSS CONTROL - THE COLONY	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2363	1516	3
TIOGA	C	CONSERVATION, WATER LOSS CONTROL - TIOGA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$2,000.00	2018		2373	1517	1
TIOGA	C	CONSERVATION, WATER LOSS CONTROL - TIOGA	C	CONSTRUCTION FUNDING	$6,424.00	2019		2373	1517	2
TIOGA	C	CONSERVATION, WATER LOSS CONTROL - TIOGA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2373	1517	3
TOM BEAN	C	CONSERVATION, WATER LOSS CONTROL - TOM BEAN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2375	1518	1
TOM BEAN	C	CONSERVATION, WATER LOSS CONTROL - TOM BEAN	C	CONSTRUCTION FUNDING				2375	1518	2
TOM BEAN	C	CONSERVATION, WATER LOSS CONTROL - TOM BEAN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2375	1518	3
TOOL	C	CONSERVATION, WATER LOSS CONTROL - TOOL	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2377	1519	1
TOOL	C	CONSERVATION, WATER LOSS CONTROL - TOOL	C	CONSTRUCTION FUNDING				2377	1519	2
TOOL	C	CONSERVATION, WATER LOSS CONTROL - TOOL	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2377	1519	3
TRENTON	C	CONSERVATION, WATER LOSS CONTROL - TRENTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2383	1520	1
TRENTON	C	CONSERVATION, WATER LOSS CONTROL - TRENTON	C	CONSTRUCTION FUNDING				2383	1520	2
TRENTON	C	CONSERVATION, WATER LOSS CONTROL - TRENTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2383	1520	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
TRENTON	C	TRENTON - NEW WELLS IN WOODBINE AQUIFER Q-131	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2383	1061	1
TRENTON	C	TRENTON - NEW WELLS IN WOODBINE AQUIFER Q-131	C	CONSTRUCTION FUNDING				2383	1061	2
TRENTON	C	TRENTON - NEW WELLS IN WOODBINE AQUIFER Q-131	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2383	1061	3
TRINIDAD	C	CONSERVATION, WATER LOSS CONTROL - TRINIDAD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2385	1521	1
TRINIDAD	C	CONSERVATION, WATER LOSS CONTROL - TRINIDAD	C	CONSTRUCTION FUNDING				2385	1521	2
TRINIDAD	C	CONSERVATION, WATER LOSS CONTROL - TRINIDAD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2385	1521	3
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY DALLAS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-59	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$2,141,000.00	2030		134	989	1
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY DALLAS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-59	C	CONSTRUCTION FUNDING	$5,968,000.00	2032		134	989	2
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY DALLAS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-59	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			134	989	3
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY ELLIS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-60	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$4,400,000.00	2060		134	990	1
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY ELLIS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-60	C	CONSTRUCTION FUNDING	$12,960,000.00	2061		134	990	2
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY ELLIS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-60	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			134	990	3
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY FREESTONE COUNTY REUSE FOR STEAM ELECTRIC POWER Q-61	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$7,531,000.00	2050		134	991	1
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY FREESTONE COUNTY REUSE FOR STEAM ELECTRIC POWER Q-61	C	CONSTRUCTION FUNDING	$22,777,000.00	2051		134	991	2
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY FREESTONE COUNTY REUSE FOR STEAM ELECTRIC POWER Q-61	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			134	991	3
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY KAUFMAN COUNTY REUSE FOR STEAM ELECTRIC POWER Q-62	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$2,477,000.00	2020		134	992	1
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY KAUFMAN COUNTY REUSE FOR STEAM ELECTRIC POWER Q-62	C	CONSTRUCTION FUNDING	$6,451,000.00	2021		134	992	2
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY KAUFMAN COUNTY REUSE FOR STEAM ELECTRIC POWER Q-62	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			134	992	3
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY LAS COLINAS REUSE (DALLAS COUNTY IRRIGATION) Q-58	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$3,551,000.00	2020		134	988	1
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY LAS COLINAS REUSE (DALLAS COUNTY IRRIGATION) Q-58	C	CONSTRUCTION FUNDING	$10,498,000.00	2022		134	988	2
TRINITY RIVER AUTHORITY	C	TRINITY RIVER AUTHORITY LAS COLINAS REUSE (DALLAS COUNTY IRRIGATION) Q-58	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			134	988	3
TROPHY CLUB	C	CONSERVATION, WATER LOSS CONTROL - TROPHY CLUB	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2389	1522	1
TROPHY CLUB	C	CONSERVATION, WATER LOSS CONTROL - TROPHY CLUB	C	CONSTRUCTION FUNDING				2389	1522	2
TROPHY CLUB	C	CONSERVATION, WATER LOSS CONTROL - TROPHY CLUB	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2389	1522	3
TROPHY CLUB	C	TROPHY CLUB - PHASE II: INCREASE DELIVERY INFRASTRUCTURE FROM FT WORTH Q-198	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2389	1130	1
TROPHY CLUB	C	TROPHY CLUB - PHASE II: INCREASE DELIVERY INFRASTRUCTURE FROM FT WORTH Q-198	C	CONSTRUCTION FUNDING				2389	1130	2
TROPHY CLUB	C	TROPHY CLUB - PHASE II: INCREASE DELIVERY INFRASTRUCTURE FROM FT WORTH Q-198	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2389	1130	3
TROPHY CLUB	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2389	1129	1
TROPHY CLUB	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	CONSTRUCTION FUNDING				2389	1129	2
TROPHY CLUB	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2389	1129	3
TWO WAY SUD	C	CONSERVATION, WATER LOSS CONTROL - TWO WAY SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2394	1523	1
TWO WAY SUD	C	CONSERVATION, WATER LOSS CONTROL - TWO WAY SUD	C	CONSTRUCTION FUNDING	$0.00			2394	1523	2
TWO WAY SUD	C	CONSERVATION, WATER LOSS CONTROL - TWO WAY SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2394	1523	3
UNIVERSITY PARK	C	CONSERVATION, WATER LOSS CONTROL - UNIVERSITY PARK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2398	1524	1
UNIVERSITY PARK	C	CONSERVATION, WATER LOSS CONTROL - UNIVERSITY PARK	C	CONSTRUCTION FUNDING	$0.00			2398	1524	2
UNIVERSITY PARK	C	CONSERVATION, WATER LOSS CONTROL - UNIVERSITY PARK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2398	1524	3
UPPER TRINITY REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$23,554,000.00	2030		141	835	1
UPPER TRINITY REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	CONSTRUCTION FUNDING	$203,772,000.00	2035		141	835	2
UPPER TRINITY REGIONAL WD	C	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	80%			141	835	3
UPPER TRINITY REGIONAL WD	C	UTRWD - DIRECT REUSE Q-53	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$705,000.00	2018		141	983	1
UPPER TRINITY REGIONAL WD	C	UTRWD - DIRECT REUSE Q-53	C	CONSTRUCTION FUNDING	$5,902,000.00	2020		141	983	2
UPPER TRINITY REGIONAL WD	C	UTRWD - DIRECT REUSE Q-53	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	983	3
UPPER TRINITY REGIONAL WD	C	UTRWD - LAKE RALPH HALL AND REUSE Q-52	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$43,974,000.00	2015		141	982	1
UPPER TRINITY REGIONAL WD	C	UTRWD - LAKE RALPH HALL AND REUSE Q-52	C	CONSTRUCTION FUNDING	$205,136,000.00	2019		141	982	2
UPPER TRINITY REGIONAL WD	C	UTRWD - LAKE RALPH HALL AND REUSE Q-52	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	80%			141	982	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2015-2019 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$4,308,000.00	2015		141	984	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2015-2019 Q-54	C	CONSTRUCTION FUNDING	$24,415,000.00	2017		141	984	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2015-2019 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	984	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2020-2029 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$12,800,000.00	2020		141	1150	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2020-2029 Q-54	C	CONSTRUCTION FUNDING	$72,535,000.00	2025		141	1150	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2020-2029 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	1150	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2030-2040 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$10,449,000.00	2030		141	1151	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2030-2040 Q-54	C	CONSTRUCTION FUNDING	$59,212,361.00	2035		141	1151	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2030-2040 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	1151	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2040-2050 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$8,825,000.00	2040		141	1152	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2040-2050 Q-54	C	CONSTRUCTION FUNDING	$50,009,000.00	2045		141	1152	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2040-2050 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	1152	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2050-2060 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$8,308,000.00	2050		141	1153	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2050-2060 Q-54	C	CONSTRUCTION FUNDING	$47,079,000.00	2055		141	1153	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2050-2060 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	1153	3
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2060-2070 Q-54	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$8,308,000.00	2060		141	1154	1
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2060-2070 Q-54	C	CONSTRUCTION FUNDING	$47,079,000.00	2065		141	1154	2
UPPER TRINITY REGIONAL WD	C	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2060-2070 Q-54	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	50%			141	1154	3
VALLEY VIEW	C	CONSERVATION, WATER LOSS CONTROL - VALLEY VIEW	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2401	1525	1
VALLEY VIEW	C	CONSERVATION, WATER LOSS CONTROL - VALLEY VIEW	C	CONSTRUCTION FUNDING				2401	1525	2
VALLEY VIEW	C	CONSERVATION, WATER LOSS CONTROL - VALLEY VIEW	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2401	1525	3
VAN ALSTYNE	C	CONSERVATION, WATER LOSS CONTROL - VAN ALSTYNE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2403	1526	1
VAN ALSTYNE	C	CONSERVATION, WATER LOSS CONTROL - VAN ALSTYNE	C	CONSTRUCTION FUNDING				2403	1526	2

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
VAN ALSTYNE	C	CONSERVATION, WATER LOSS CONTROL - VAN ALSTYNE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2403	1526	3
VAN ALSTYNE	C	VAN ALSTYNE - WATER SYSTEM IMPROVEMENTS Q-142	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2403	1072	1
VAN ALSTYNE	C	VAN ALSTYNE - WATER SYSTEM IMPROVEMENTS Q-142	C	CONSTRUCTION FUNDING				2403	1072	2
VAN ALSTYNE	C	VAN ALSTYNE - WATER SYSTEM IMPROVEMENTS Q-142	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2403	1072	3
VIRGINIA HILL WSC	C	CONSERVATION, WATER LOSS CONTROL - VIRGINIA HILL WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2412	1528	1
VIRGINIA HILL WSC	C	CONSERVATION, WATER LOSS CONTROL - VIRGINIA HILL WSC	C	CONSTRUCTION FUNDING				2412	1528	2
VIRGINIA HILL WSC	C	CONSERVATION, WATER LOSS CONTROL - VIRGINIA HILL WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2412	1528	3
WALNUT CREEK SUD	C	CONSERVATION, WATER LOSS CONTROL - WALNUT CREEK SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				144	1529	1
WALNUT CREEK SUD	C	CONSERVATION, WATER LOSS CONTROL - WALNUT CREEK SUD	C	CONSTRUCTION FUNDING				144	1529	2
WALNUT CREEK SUD	C	CONSERVATION, WATER LOSS CONTROL - WALNUT CREEK SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				144	1529	3
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 12 MGD WATER TREATMENT PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				144	857	1
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 12 MGD WATER TREATMENT PLANT Q-12	C	CONSTRUCTION FUNDING				144	857	2
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 12 MGD WATER TREATMENT PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				144	857	3
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 6 MGD WATER TREATMENT PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				144	856	1
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 6 MGD WATER TREATMENT PLANT Q-12	C	CONSTRUCTION FUNDING				144	856	2
WALNUT CREEK SUD	C	WALNUT CREEK SUD - NEW 6 MGD WATER TREATMENT PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				144	856	3
WATAUGA	C	CONSERVATION, WATER LOSS CONTROL - WATAUGA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2420	1530	1
WATAUGA	C	CONSERVATION, WATER LOSS CONTROL - WATAUGA	C	CONSTRUCTION FUNDING				2420	1530	2
WATAUGA	C	CONSERVATION, WATER LOSS CONTROL - WATAUGA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2420	1530	3
WAXAHACHIE	C	CONSERVATION, IRRIGATION RESTRICTION - WAXAHACHIE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1590	1
WAXAHACHIE	C	CONSERVATION, IRRIGATION RESTRICTION - WAXAHACHIE	C	CONSTRUCTION FUNDING				145	1590	2
WAXAHACHIE	C	CONSERVATION, IRRIGATION RESTRICTION - WAXAHACHIE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1590	3
WAXAHACHIE	C	CONSERVATION, WATER LOSS CONTROL - WAXAHACHIE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1531	1
WAXAHACHIE	C	CONSERVATION, WATER LOSS CONTROL - WAXAHACHIE	C	CONSTRUCTION FUNDING				145	1531	2
WAXAHACHIE	C	CONSERVATION, WATER LOSS CONTROL - WAXAHACHIE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1531	3
WAXAHACHIE	C	WAXAHACHIE - 27" RAW WATER LINE FROM IPL TO HOWARD ROAD WATER TREATMENT PLANT Q-119	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1049	1
WAXAHACHIE	C	WAXAHACHIE - 27" RAW WATER LINE FROM IPL TO HOWARD ROAD WATER TREATMENT PLANT Q-119	C	CONSTRUCTION FUNDING				145	1049	2
WAXAHACHIE	C	WAXAHACHIE - 27" RAW WATER LINE FROM IPL TO HOWARD ROAD WATER TREATMENT PLANT Q-119	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1049	3
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM IPL TO LAKE WAXAHACHIE Q-120	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1050	1
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM IPL TO LAKE WAXAHACHIE Q-120	C	CONSTRUCTION FUNDING				145	1050	2
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM IPL TO LAKE WAXAHACHIE Q-120	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1050	3
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM LAKE WAXAHACHIE TO HOWARD RD WTP Q-121	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1051	1
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM LAKE WAXAHACHIE TO HOWARD RD WTP Q-121	C	CONSTRUCTION FUNDING				145	1051	2
WAXAHACHIE	C	WAXAHACHIE - 36" RAW WATER LINE FROM LAKE WAXAHACHIE TO HOWARD RD WTP Q-121	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1051	3
WAXAHACHIE	C	WAXAHACHIE - 48" TRWD PARALLEL SUPPLY LINE TO SOKOLL WTP Q-122	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1052	1
WAXAHACHIE	C	WAXAHACHIE - 48" TRWD PARALLEL SUPPLY LINE TO SOKOLL WTP Q-122	C	CONSTRUCTION FUNDING				145	1052	2
WAXAHACHIE	C	WAXAHACHIE - 48" TRWD PARALLEL SUPPLY LINE TO SOKOLL WTP Q-122	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1052	3
WAXAHACHIE	C	WAXAHACHIE - DREDGE LAKE WAXAHACHIE Q-123	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	1053	1
WAXAHACHIE	C	WAXAHACHIE - DREDGE LAKE WAXAHACHIE Q-123	C	CONSTRUCTION FUNDING				145	1053	2
WAXAHACHIE	C	WAXAHACHIE - DREDGE LAKE WAXAHACHIE Q-123	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	1053	3
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	935	1
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				145	935	2
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	935	3
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	936	1
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				145	936	2
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				145	936	3
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 3 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				145	937	1
WAXAHACHIE	C	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 3 Q-13	C	CONSTRUCTION FUNDING				145	937	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	CONSTRUCTION FUNDING	$0.00			162	1280	2
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			162	1280	3
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			164	1281	1
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	CONSTRUCTION FUNDING	$0.00			164	1281	2
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			164	1281	3
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				171	1282	1
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	CONSTRUCTION FUNDING				171	1282	2
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				171	1282	3
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			177	1283	1
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	CONSTRUCTION FUNDING	$0.00			177	1283	2
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			177	1283	3
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1284	1
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	CONSTRUCTION FUNDING				178	1284	2
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1284	3
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				178	1101	1
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				178	1101	2
ANNETTA	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				178	1101	3
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	"blank"			2931	1285	1
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	CONSTRUCTION FUNDING	"blank"			2931	1285	2
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	"blank"			2931	1285	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
WEATHERFORD	C	WEATHERFORD - DEVELOP LAKE WEATHERFORD REUSE PROJECT Q-177	C	CONSTRUCTION FUNDING	$10,283,100.00	2016		146	1107	2
WEATHERFORD	C	WEATHERFORD - DEVELOP LAKE WEATHERFORD REUSE PROJECT Q-177	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			146	1107	3
WEATHERFORD	C	WEATHERFORD - INCREASE BENBROOK PUMP STATION CAPACITY Q-178	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			146	1108	1
WEATHERFORD	C	WEATHERFORD - INCREASE BENBROOK PUMP STATION CAPACITY Q-178	C	CONSTRUCTION FUNDING	$2,301,800.00	2030		146	1108	2
WEATHERFORD	C	WEATHERFORD - INCREASE BENBROOK PUMP STATION CAPACITY Q-178	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			146	1108	3
WEATHERFORD	C	WEATHERFORD - NEW 14 MGD WATER TREATMENT PLANT Q-12	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$7,262,520.00	2038		146	858	1
WEATHERFORD	C	WEATHERFORD - NEW 14 MGD WATER TREATMENT PLANT Q-12	C	CONSTRUCTION FUNDING	$53,258,480.00	2041		146	858	2
WEATHERFORD	C	WEATHERFORD - NEW 14 MGD WATER TREATMENT PLANT Q-12	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			146	858	3
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$4,368,960.00	2018		146	938	1
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING	$32,039,040.00	2020		146	938	2
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			146	938	3
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$5,973,720.00	2058		146	939	1
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING	$43,807,280.00	2060		146	939	2
WEATHERFORD	C	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			146	939	3
WEST CEDAR CREEK MUD	C	CONSERVATION, WATER LOSS CONTROL - WEST CEDAR CREEK MUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				147	1533	1
WEST CEDAR CREEK MUD	C	CONSERVATION, WATER LOSS CONTROL - WEST CEDAR CREEK MUD	C	CONSTRUCTION FUNDING				147	1533	2
WEST CEDAR CREEK MUD	C	CONSERVATION, WATER LOSS CONTROL - WEST CEDAR CREEK MUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				147	1533	3
WEST CEDAR CREEK MUD	C	WEST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				147	940	1
WEST CEDAR CREEK MUD	C	WEST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				147	940	2
WEST CEDAR CREEK MUD	C	WEST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				147	940	3
WEST WISE SUD	C	CONSERVATION, WATER LOSS CONTROL - WEST WISE SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2805	1534	1
WEST WISE SUD	C	CONSERVATION, WATER LOSS CONTROL - WEST WISE SUD	C	CONSTRUCTION FUNDING				2805	1534	2
WEST WISE SUD	C	CONSERVATION, WATER LOSS CONTROL - WEST WISE SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2805	1534	3
WEST WISE SUD	C	WEST WISE SUD - WATER TREATMENT PLANT EXPANSION Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2805	941	1
WEST WISE SUD	C	WEST WISE SUD - WATER TREATMENT PLANT EXPANSION Q-13	C	CONSTRUCTION FUNDING				2805	941	2
WEST WISE SUD	C	WEST WISE SUD - WATER TREATMENT PLANT EXPANSION Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2805	941	3
WESTLAKE	C	CONSERVATION, WATER LOSS CONTROL - WESTLAKE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2954	1535	1
WESTLAKE	C	CONSERVATION, WATER LOSS CONTROL - WESTLAKE	C	CONSTRUCTION FUNDING				2954	1535	2
WESTLAKE	C	CONSERVATION, WATER LOSS CONTROL - WESTLAKE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2954	1535	3
WESTLAKE	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2954	1129	1
WESTLAKE	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	CONSTRUCTION FUNDING				2954	1129	2
WESTLAKE	C	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2954	1129	3
WESTON	C	CONSERVATION, WATER LOSS CONTROL - WESTON	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2441	1536	1
WESTON	C	CONSERVATION, WATER LOSS CONTROL - WESTON	C	CONSTRUCTION FUNDING				2441	1536	2
WESTON	C	CONSERVATION, WATER LOSS CONTROL - WESTON	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2441	1536	3
WESTON	C	WESTON - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-79	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2441	1009	1
WESTON	C	WESTON - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-79	C	CONSTRUCTION FUNDING				2441	1009	2
WESTON	C	WESTON - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-79	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2441	1009	3
WESTOVER HILLS	C	CONSERVATION, WATER LOSS CONTROL - WESTOVER HILLS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2442	1537	1
WESTOVER HILLS	C	CONSERVATION, WATER LOSS CONTROL - WESTOVER HILLS	C	CONSTRUCTION FUNDING				2442	1537	2
WESTOVER HILLS	C	CONSERVATION, WATER LOSS CONTROL - WESTOVER HILLS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2442	1537	3
WESTOVER HILLS	C	CONSERVATION, WATER WASTE PROHIBITION - WESTOVER HILLS	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2442	1576	1
WESTOVER HILLS	C	CONSERVATION, WATER WASTE PROHIBITION - WESTOVER HILLS	C	CONSTRUCTION FUNDING				2442	1576	2
WESTOVER HILLS	C	CONSERVATION, WATER WASTE PROHIBITION - WESTOVER HILLS	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2442	1576	3
WESTWORTH VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - WESTWORTH VILLAGE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING	$0.00			2443	1538	1
WESTWORTH VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - WESTWORTH VILLAGE	C	CONSTRUCTION FUNDING	$0.00			2443	1538	2
WESTWORTH VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - WESTWORTH VILLAGE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY	0%			2443	1538	3
WHITE SETTLEMENT	C	CONSERVATION, WATER LOSS CONTROL - WHITE SETTLEMENT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2449	1539	1
WHITE SETTLEMENT	C	CONSERVATION, WATER LOSS CONTROL - WHITE SETTLEMENT	C	CONSTRUCTION FUNDING				2449	1539	2
WHITE SETTLEMENT	C	CONSERVATION, WATER LOSS CONTROL - WHITE SETTLEMENT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2449	1539	3
WHITESBORO	C	CONSERVATION, WATER LOSS CONTROL - WHITESBORO	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2451	1540	1
WHITESBORO	C	CONSERVATION, WATER LOSS CONTROL - WHITESBORO	C	CONSTRUCTION FUNDING				2451	1540	2
WHITESBORO	C	CONSERVATION, WATER LOSS CONTROL - WHITESBORO	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2451	1540	3
WHITEWRIGHT	C	CONSERVATION, WATER LOSS CONTROL - WHITEWRIGHT	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2452	1541	1
WHITEWRIGHT	C	CONSERVATION, WATER LOSS CONTROL - WHITEWRIGHT	C	CONSTRUCTION FUNDING				2452	1541	2
WHITEWRIGHT	C	CONSERVATION, WATER LOSS CONTROL - WHITEWRIGHT	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2452	1541	3
WILLOW PARK	C	CONSERVATION, WATER LOSS CONTROL - WILLOW PARK	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2458	1542	1
WILLOW PARK	C	CONSERVATION, WATER LOSS CONTROL - WILLOW PARK	C	CONSTRUCTION FUNDING				2458	1542	2
WILLOW PARK	C	CONSERVATION, WATER LOSS CONTROL - WILLOW PARK	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2458	1542	3
WILLOW PARK	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2458	1101	1
WILLOW PARK	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	CONSTRUCTION FUNDING				2458	1101	2
WILLOW PARK	C	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2458	1101	3
WILMER	C	CONSERVATION, WATER LOSS CONTROL - WILMER	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2460	1543	1
WILMER	C	CONSERVATION, WATER LOSS CONTROL - WILMER	C	CONSTRUCTION FUNDING				2460	1543	2
WILMER	C	CONSERVATION, WATER LOSS CONTROL - WILMER	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2460	1543	3
WILMER	C	WILMER - DIRECT CONNECTION TO DALLAS Q-94	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2460	1024	1
WILMER	C	WILMER - DIRECT CONNECTION TO DALLAS Q-94	C	CONSTRUCTION FUNDING				2460	1024	2
WILMER	C	WILMER - DIRECT CONNECTION TO DALLAS Q-94	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2460	1024	3

Sponsor Entity Name	Sponsor Entity Primary Region	Project Name	WMS Project Sponsor Region	IFR Element Name	IFR Element Value	Year Of Need	IFR Project Data Id	Entity Rwp Id	WMS Project Id	IFR Project Elements Id
WILMER	C	WILMER - NEW CONNECTION TO DALLAS (VIA LANCASTER) Q-95	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2460	1025	1
WILMER	C	WILMER - NEW CONNECTION TO DALLAS (VIA LANCASTER) Q-95	C	CONSTRUCTION FUNDING				2460	1025	2
WILMER	C	WILMER - NEW CONNECTION TO DALLAS (VIA LANCASTER) Q-95	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2460	1025	3
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				152	943	1
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	CONSTRUCTION FUNDING				152	943	2
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 1 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				152	943	3
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				152	944	1
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	CONSTRUCTION FUNDING				152	944	2
WISE COUNTY WSD	C	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 2 Q-13	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				152	944	3
WOODBINE WSC	C	CONSERVATION, WATER LOSS CONTROL - WOODBINE WSC	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2471	1544	1
WOODBINE WSC	C	CONSERVATION, WATER LOSS CONTROL - WOODBINE WSC	C	CONSTRUCTION FUNDING				2471	1544	2
WOODBINE WSC	C	CONSERVATION, WATER LOSS CONTROL - WOODBINE WSC	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2471	1544	3
WORTHAM	C	CONSERVATION, WATER LOSS CONTROL - WORTHAM	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2479	1545	1
WORTHAM	C	CONSERVATION, WATER LOSS CONTROL - WORTHAM	C	CONSTRUCTION FUNDING				2479	1545	2
WORTHAM	C	CONSERVATION, WATER LOSS CONTROL - WORTHAM	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2479	1545	3
WYLIE	C	CONSERVATION, WATER LOSS CONTROL - WYLIE	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2480	1546	1
WYLIE	C	CONSERVATION, WATER LOSS CONTROL - WYLIE	C	CONSTRUCTION FUNDING				2480	1546	2
WYLIE	C	CONSERVATION, WATER LOSS CONTROL - WYLIE	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2480	1546	3
WYLIE NORTHEAST SUD	C	CONSERVATION, WATER LOSS CONTROL - WYLIE NORTHEAST SUD	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2870	1547	1
WYLIE NORTHEAST SUD	C	CONSERVATION, WATER LOSS CONTROL - WYLIE NORTHEAST SUD	C	CONSTRUCTION FUNDING				2870	1547	2
WYLIE NORTHEAST SUD	C	CONSERVATION, WATER LOSS CONTROL - WYLIE NORTHEAST SUD	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2870	1547	3
WYLIE NORTHEAST SUD	C	WYLIE NE SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-80	C	PLANNING, DESIGN, PERMITTING & ACQUISITION FUNDING				2870	1010	1
WYLIE NORTHEAST SUD	C	WYLIE NE SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-80	C	CONSTRUCTION FUNDING				2870	1010	2
WYLIE NORTHEAST SUD	C	WYLIE NE SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-80	C	PERCENT STATE PARTICIPATION IN OWNING EXCESS CAPACITY				2870	1010	3

Appendix S

APPENDIX S

WATER MANAGEMENT STRATEGY IMPLEMENTATION SURVEY

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
ABLES SPRINGS WSC	Municipal conservation - basic	$0	9	33	52	69	91	118	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	118	$0	2060	Self (cash)	Yes	
ABLES SPRINGS WSC	Municipal conservation - expanded	$5,000	5	7	9	11	13	16	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$5,000	2011	Yes	16	$5,000	2060	Self (cash)	Yes	
ADDISON	Municipal conservation - basic	$0	189	341	465	587	707	826	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		189	unknown	$0	2011	Yes	826	$0	2060	Self (cash)	Yes	
ADDISON	Municipal conservation - expanded	$0	0	11	13	13	15	15	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	15	$0	2050	Self (cash)	Yes	
ALEDO	Municipal conservation - basic	$5,000	5	54	108	167	193	212	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$5,000	2011	Yes	212	$5,000	2060	Self (cash)	Yes	
ALEDO	Municipal conservation - expanded	$5,000	5	14	24	33	35	35	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$5,000	2011	Yes	35	$5,000	2050	Self (cash)	Yes	
ALEDO	Supplemental wells	$2,232,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ALLEN	Municipal conservation - basic	$8,711	192	1,115	1,672	1,914	2,145	2,376	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		192	unknown	$8,711	2011	Yes	2,376	$8,711	2060	Self (cash)	Yes	
ALLEN	Municipal conservation - expanded	$8,711	206	344	418	433	434	434	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		206	unknown	$8,711	2011	Yes	434	$8,711	2050	Self (cash)	Yes	
ALVORD	Municipal conservation - basic	$0	2	7	10	12	14	17	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	17	$0	2060	Self (cash)	Yes	
ALVORD	Supplemental wells	$1,508,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ANNA	Municipal conservation - basic	$0	24	141	261	397	574	1,061	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		24	unknown	$0	2011	Yes	1,061	$0	2060	Self (cash)	Yes	
ANNA	Municipal conservation - expanded	$5,000	9	24	38	51	66	108	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		9	unknown	$5,000	2011	Yes	108	$5,000	2060	Self (cash)	Yes	
ANNA	Purchase from water provider (1)	$0	0	170	316	447	602	1,216	Y		No Infrastructure	Not Implemented	Too soon	170									Yes	
ANNA	Supplemental wells	$1,381,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ANNETTA	Conveyance project (2)	$1,522,100	0	14	49	80	89	112	Y		Pipeline	Not Implemented	Too soon	14									Yes	
ANNETTA	Municipal conservation - basic	$0	3	11	16	19	23	27	N		No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	27	$0	2060	Self (cash)	Yes	
ANNETTA	Supplemental wells	$3,610,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ANNETTA SOUTH	Municipal conservation - basic	$0	1	4	6	8	9	10	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	10	$0	2060	Self (cash)	Yes	
ANNETTA SOUTH	Supplemental wells	$3,610,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ARGYLE	Municipal conservation - basic	$0	34	135	238	307	386	475	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		34	unknown	$0	2011	Yes	475	$0	2060	Self (cash)	Yes	
ARGYLE	Municipal conservation - expanded	$0	0	0	1	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2040	Self (cash)	Yes	
ARGYLE WSC	Municipal conservation - basic	$0	14	38	50	78	90	98	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	98	$0	2060	Self (cash)	Yes	
ARGYLE WSC	Municipal conservation - expanded	$0	0	0	0	5	6	6	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	6	$0	2050	Self (cash)	Yes	
ARGYLE WSC	Supplemental wells	$2,836,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ARLINGTON	Municipal conservation - basic	$0	2,123	3,969	5,273	6,290	7,032	7,798	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2,123	unknown	$0	2011	Yes	7,798	$0	2060	Self (cash)	Yes	
ARLINGTON	Municipal conservation - expanded	$0	0	267	516	619	627	628	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	628	$0	2060	Self (cash)	Yes	
ARLINGTON	Water treatment plant - expansion	$54,618,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0							2070		Yes	
ATHENS	Municipal conservation - basic	$25,600	21	170	290	383	505	662	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		21	unknown	$25,600	2011	Yes	662	$25,600	2060	Self (cash)	Yes	
ATHENS	Municipal conservation - expanded	$5,000	25	39	55	69	84	99	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		25	unknown	$5,000	2011	Yes	99	$5,000	2060	Self (cash)	Yes	
ATHENS	New wells - Carrizo Wilcox Aquifer	$0	0	27	29	29	30	31	N		Wells	Sponsor has taken official action to initiate project		27	Unknown	Unknown	2016	Yes	4,484	$9,455,000		Unknown	No	Athens MWA has permits to develop new wells, but this WMS cannot be shown in the 2016 Plan because of TWDB MAG limitations
ATHENS	Supplemental wells	$1,959,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
AUBREY	Municipal conservation - basic	$0	6	48	61	88	126	181	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	181	$0	2060	Self (cash)	Yes	
AUBREY	Municipal conservation - expanded	$0	2	6	7	9	13	17	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	17	$0	2060	Self (cash)	Yes	
AUBREY	Supplemental wells	$1,794,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
AURORA	Municipal conservation - basic	$0	3	9	13	15	18	22	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
AURORA	Purchase from water provider (2)	$1,439,000	0	50	50	50	50	86	Y		Pipeline	All Phases Fully Implemented		71	unknown	Unknown	2014	No			2050	Unknown	Yes	Additional purchase of water is a WMS in the 2016 plan.
AURORA	Supplemental wells	$1,512,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
AZLE	Municipal conservation - basic	$5,000	99	84	145	209	279	351	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		99	unknown	$5,000	2011	Yes	351	$5,000	2060	Self (cash)	Yes	
AZLE	Municipal conservation - expanded	$5,000	17	23	29	38	47	56	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		17	unknown	$5,000	2011	Yes	56	$5,000	2060	Self (cash)	Yes	
AZLE	Water treatment plant - expansion	$20,892,000	0	484	828	1,158	1,424	1,497	Y		Water Treatment Plant	Not Implemented	Too soon	484							2070		Yes	
AZLE	Water treatment plant - new	$14,964,000	0	93	0	19	0	96	N		Water Treatment Plant	Not Implemented	Too soon	93		$14,964,000	2020						No	
BALCH SPRINGS	Municipal conservation - basic	$0	32	119	134	150	164	180	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		32	unknown	$0	2011	Yes	180	$0	2060	Self (cash)	Yes	
BARDWELL	Municipal conservation - basic	$0	1	5	9	11	13	16	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	16	$0	2060	Self (cash)	Yes	
BARDWELL	Municipal conservation - expanded	$5,000	1	1	1	1	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$5,000	2011	Yes	2	$5,000	2050	Self (cash)	Yes	
BARDWELL	Supplemental wells	$581,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BARTONVILLE	Municipal conservation - basic	$0	9	55	71	80	88	97	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	97	$0	2060	Self (cash)	Yes	
BARTONVILLE WSC	Municipal conservation - basic	$0	5	10	15	18	20	33	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	33	$0	2060	Self (cash)	Yes	
BARTONVILLE WSC	Municipal conservation - expanded	$0	0	0	0	0	0	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2060	Self (cash)	Yes	
BARTONVILLE WSC	Supplemental wells	$6,016,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BEDFORD	Municipal conservation - basic	$0	274	486	631	736	843	954	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		274	unknown	$0	2011	Yes	954	$0	2060	TWDB	Yes	
BEDFORD	Municipal conservation - expanded	$0	0	48	72	73	74	75	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	75	$0	2060	TWDB	Yes	
BEDFORD	Supplemental wells	$2,062,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BELLS	Municipal conservation - basic	$0	2	11	17	22	26	30	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	30	$0	2060	Self (cash)	Yes	
BELLS	Municipal conservation - expanded	$5,000	1	2	2	3	3	4	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$5,000	2011	Yes	4	$5,000	2060	Self (cash)	Yes	
BELLS	Supplemental wells	$2,033,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BENBROOK	Municipal conservation - basic	$5,000	172	328	445	602	800	1,046	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		172	unknown	$5,000	2011	Yes	1,046	$5,000	2060	Self (cash)	Yes	
BENBROOK	Municipal conservation - expanded	$5,000	61	95	103	123	146	172	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		61	unknown	$5,000	2011	Yes	172	$5,000	2060	Self (cash)	Yes	
BENBROOK	Supplemental wells	$4,886,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BENBROOK	Water treatment plant - expansion	$17,046,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
BETHEL-ASH WSC	Municipal conservation - basic	$0	3	11	17	21	25	30	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	30	$0	2060	Self (cash)	Yes	
BETHEL-ASH WSC	Municipal conservation - expanded	$5,000	1	1	2	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$5,000	2011	Yes	2	$5,000	2030	Self (cash)	Yes	
BETHEL-ASH WSC	Supplemental wells	$3,712,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BETHESDA WSC	Municipal conservation - basic	$0	30	95	120	150	186	231	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		30	unknown	$0	2011	Yes	231	$0	2060	Self (cash)	Yes	
BETHESDA WSC	Purchase from water provider (1)	$16,334,000	0	0	1,539	2,087	2,881	3,744	Y		No Infrastructure	Not Implemented	Too soon	1,539									Yes	
BETHESDA WSC	Supplemental wells	$10,476,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BLACKLAND WSC	Municipal conservation - basic	$0	7	28	43	54	70	87	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		7	unknown	$0	2011	Yes	87	$0	2060	Self (cash)	Yes	
BLACKLAND WSC	Purchase from water provider (3)	$3,067,000	0	62	83	131	99	115	Y		Pipeline	Not Implemented	Too soon	62		$3,067,000	2020						Yes	
BLOOMING GROVE	Municipal conservation - basic	$0	2	5	6	10	11	12	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	12	$0	2060	Self (cash)	Yes	
BLOOMING GROVE	Municipal conservation - expanded	$0	0	0	0	1	1	1	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	1	$0	2040	Self (cash)	Yes	
BLOOMING GROVE	New wells - Trinity Aquifer	$1,495,400	0	160	160	160	160	160	N		Wells	Not Implemented	Too soon	160									Yes	
BLUE MOUND	Municipal conservation - basic	$0	4	12	16	17	18	19	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	19	$0	2060	Self (cash)	Yes	
BLUE MOUND	Supplemental wells	$1,528,168	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BLUE RIDGE	Conveyance project (3)	$2,294,000	0	213	345	629	493	491	Y		Pipeline	Not Implemented	Too soon	213									Yes	
BLUE RIDGE	Municipal conservation - basic	$0	5	23	47	80	125	150	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	150	$0	2060	Self (cash)	Yes	
BLUE RIDGE	Municipal conservation - expanded	$5,000	2	5	8	13	19	21	N		No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	21	$5,000	2060	Self (cash)	Yes	
BLUE RIDGE	Supplemental wells	$1,528,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
BOLIVAR WSC	Municipal conservation - basic	$0	19	70	163	357	601	862	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		19	unknown	$0	2011	Yes	862	$0	2060	Self (cash)	Yes	
BOLIVAR WSC	Municipal conservation - expanded	$5,000	11	14	27	56	88	118	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		11	unknown	$5,000	2011	Yes	118	$5,000	2060	Self (cash)	Yes	
BOLIVAR WSC	Supplemental wells	$10,842,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BONHAM	Municipal conservation - basic	$0	16	99	163	259	401	555	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	555	$0	2060	Self (cash)	Yes	
BONHAM	Municipal conservation - expanded	$0	0	4	13	23	30	39	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	39	$0	2060	Self (cash)	Yes	
BOYD	Municipal conservation - basic	$0	3	10	16	20	25	27	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	27	$0	2060	Self (cash)	Yes	
BOYD	Supplemental wells	$760,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BRANDON-IRENE WSC	Municipal conservation - basic	$0	0	1	3	3	3	3	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	3	$0	2030	Self (cash)	Yes	
BRIDGEPORT	Municipal conservation - basic	$0	11	83	150	205	270	360	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	360	$0	2060	Self (cash)	Yes	
BRIDGEPORT	Municipal conservation - expanded	$5,000	13	23	38	47	55	65	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		13	unknown	$5,000	2011	Yes	65	$5,000	2060	Self (cash)	Yes	
BRIDGEPORT	Water treatment plant - expansion	$14,540,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
BRIDGEPORT	Water treatment plant - new	$11,576,000	0	43	407	451	494	590	N		Water Treatment Plant	Not Implemented	Other	43									No	
BRYSON	Municipal conservation - basic	$0	3	6	8	8	9	9	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	9	$0	2050	Self (cash)	Yes	
BUENA VISTA - BETHEL SUD	Conveyance project (2)	$8,798,000	0	0	0	0	0	0	Y		Pipeline	Currently Operating		225	unknown	Unknown	2014	No			2070	Unknown	No	
BUENA VISTA - BETHEL SUD	Municipal conservation - basic	$0	108	352	475	616	778	963	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		108	unknown	$0	2011	Yes	963	$0	2060	Self (cash)	Yes	
BUENA VISTA - BETHEL SUD	Municipal conservation - expanded	$5,000	9	15	19	24	29	35	N		No Infrastructure	Currently Operating		9	unknown	$5,000	2011	Yes	35	$5,000	2060	Self (cash)	Yes	
BUENA VISTA - BETHEL SUD	Overdraft Trinity Aquifer - existing wells	$0	366	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
BUENA VISTA - BETHEL SUD	Supplemental wells	$3,732,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
BURLESON	Conveyance project (2)	$2,592,000	0	48	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	48									Yes	
BURLESON	Municipal conservation - basic	$0	13	34	50	64	82	106	N		No Infrastructure	Currently Operating	Wells	Not Implemented	Other	$0	2011	Yes	106	$0	2060	Self (cash)	Yes	
CADDO BASIN SUD	Municipal conservation - basic	$0	12	39	55	70	86	105	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		12	unknown	$0	2011	Yes	105	$0	2060	Self (cash)	Yes	
CARROLLTON	Municipal conservation - basic	$10,000	753	1,308	1,690	1,952	2,205	2,461	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		753	unknown	$10,000	2011	Yes	2,461	$10,000	2060	Self (cash)	Yes	
CARROLLTON	Municipal conservation - expanded	$10,000	295	425	437	442	447	452	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		295	unknown	$10,000	2011	Yes	452	$10,000	2060	Self (cash)	Yes	
CARROLLTON	Supplemental wells	$1,173,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CASH SUD	Municipal conservation - basic	$0	1	4	6	8	11	13	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	13	$0	2060	Self (cash)	Yes	
CASH SUD	Municipal conservation - expanded	$0	1	1	1	1	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	2	$0	2050	Self (cash)	Yes	
CASH SUD	Water treatment plant - expansion	$7,270,000	0	0	0	0	0	0	Y		Water Treatment Plant	See Region D Plan				Unknown							No	
CEDAR HILL	Municipal conservation - basic	$31,256	371	948	1,304	1,502	1,645	1,789	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		371	unknown	$31,256	2011	Yes	1,789	$31,256	2060	Self (cash)	Yes	
CEDAR HILL	Municipal conservation - expanded	$0	10	50	59	62	62	62	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		10	unknown	$0	2011	Yes	62	$0	2040	Self (cash)	Yes	
CEDAR HILL	Supplemental wells	$2,808,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CELINA	Municipal conservation - basic	$5,000	37	316	780	1,571	2,695	3,449	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		37	unknown	$5,000	2011	Yes	3,449	$5,000	2060	Self (cash)	Yes	
CELINA	Municipal conservation - expanded	$0	0	2	11	22	37	48	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	48	$0	2060	Self (cash)	Yes	
CELINA	Purchase from water provider (3)	$15,669,250	0	111	254	559	347	334	Y		Pipeline	Not Implemented	Too soon	111		$15,669,250	2020						Yes	
CELINA	Supplemental wells	$2,838,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CHATFIELD WSC	Municipal conservation - basic	$0	6	30	49	65	83	105	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	105	$0	2060	Self (cash)	Yes	
CHICO	Municipal conservation - basic	$0	2	8	13	16	21	28	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	28	$0	2060	Self (cash)	Yes	
CHICO	Municipal conservation - expanded	$0	1	1	1	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	2	$0	2040	Self (cash)	Yes	
CHICO	Purchase from water provider (1)	$3,005,000	0	0	8	30	55	80	Y		No Infrastructure	Not Implemented	Too soon	8									Yes	
CHICO	Supplemental wells	$2,239,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
COCKRELL HILL	Municipal conservation - basic	$0	6	21	28	32	33	36	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	36	$0	2060	Self (cash)	Yes	
COLLEGE MOUND WSC	Municipal conservation - basic	$0	13	55	86	108	136	172	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		13	unknown	$0	2011	Yes	172	$0	2060	Self (cash)	Yes	
COLLEGE MOUND WSC	Purchase from water provider (3)	$2,569,000	0	98	154	242	178	207	Y		No Infrastructure	Not Implemented	Too soon	98									Yes	
COLLEYVILLE	Municipal conservation - basic	$24,497	220	477	649	725	799	874	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		220	unknown	$24,497	2011	Yes	874	$24,497	2060	Self (cash)	Yes	
COLLEYVILLE	Municipal conservation - expanded	$0	0	2	2	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2020	Self (cash)	Yes	
COLLINSVILLE	Municipal conservation - basic	$0	4	15	24	32	40	49	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	49	$0	2060	Self (cash)	Yes	
COLLINSVILLE	Municipal conservation - expanded	$5,000	3	4	5	6	7	8	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$5,000	2011	Yes	8	$5,000	2060	Self (cash)	Yes	
COLLINSVILLE	Supplemental wells	$2,990,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COMBINE	Municipal conservation - basic	$0	4	16	23	29	35	43	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	43	$0	2060	Self (cash)	Yes	
COMBINE WSC	Municipal conservation - basic	$0	8	30	45	60	78	102	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	102	$0	2060	Self (cash)	Yes	
COMMUNITY WATER COMPANY	Municipal conservation - basic	$0	5	19	21	28	35	46	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	46	$0	2060	Self (cash)	Yes	
COMMUNITY WSC	Municipal conservation - basic	$0	7	25	26	29	31	34	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		7	unknown	$0	2011	Yes	34	$0	2060	Self (cash)	Yes	
COPPELL	Municipal conservation - basic	$7,192	361	610	749	849	942	1,040	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		361	unknown	$7,192	2011	Yes	1,040	$7,192	2060	Self (cash)	Yes	
COPPELL	Municipal conservation - expanded	$7,192	155	200	208	215	216	216	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		155	unknown	$7,192	2011	Yes	216	$7,192	2050	Self (cash)	Yes	
COPPER CANYON	Municipal conservation - basic	$0	10	20	30	40	51	63	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		10	unknown	$0	2011	Yes	63	$0	2060	Self (cash)	Yes	
CORINTH	Municipal conservation - basic	$0	142	271	366	445	531	616	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		142	unknown	$0	2011	Yes	616	$0	2060	Self (cash)	Yes	
CORINTH	Municipal conservation - expanded	$5,000	68	97	108	120	128	136	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		68	unknown	$5,000	2011	Yes	136	$5,000	2060	Self (cash)	Yes	
CORINTH	Supplemental wells	$541,600	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CORSICANA	Conveyance project (1)	$28,160,000	0	8,000	13,440	13,440	13,440	13,440	Y		Pipeline	Not Implemented	Too soon	8,000		$28,160,000	2020						Yes	In 2016 Plan Corsicana will only supply part of this Navarro County SEP demand
CORSICANA	Municipal conservation - basic	$31,760	45	137	194	423	567	665	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		45	unknown	$31,760	2011	Yes	665	$31,760	2060	Self (cash)	Yes	
CORSICANA	Municipal conservation - expanded	$5,000	44	46	47	70	80	86	N		No Infrastructure	Currently Operating		44	unknown	$5,000	2011	Yes	86	$5,000	2060	Self (cash)	Yes	
CORSICANA	Water treatment plant - expansion	$19,970,000	0	1,260	1,081	3,180	2,786	2,268	N		Water Treatment Plant	Not Implemented	Too soon	1,260									Yes	
CORSICANA	Water treatment plant - new	$32,388,400	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
COUNTY-OTHER, COLLIN	Municipal conservation - basic	$0	11	37	43	42	40	38	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	38	$0	2030	Self (cash)	Yes	
COUNTY-OTHER, COLLIN	Supplemental wells	$595,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, COOKE	Municipal conservation - basic	$0	17	47	64	69	73	78	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		17	unknown	$0	2011	Yes	78	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, COOKE	Supplemental wells	$6,354,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, DALLAS	Municipal conservation - basic	$0	1	5	5	5	4	3	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	3	$0	2020	Self (cash)	Yes	
COUNTY-OTHER, DALLAS	Supplemental wells	$794,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, DENTON	Municipal conservation - basic	$0	113	378	543	661	788	929	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		113	unknown	$0	2011	Yes	929	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, DENTON	New wells - Woodbine Aquifer	$1,639,000	200	200	200	200	200	200	N		Wells	Not Implemented	Too soon	200									Yes	
COUNTY-OTHER, DENTON	Supplemental wells	$1,170,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, ELLIS	Municipal conservation - basic	$0	17	54	73	81	87	94	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		17	unknown	$0	2011	Yes	94	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, ELLIS	New wells - Woodbine Aquifer	$7,975,000	0	865	865	865	865	865	N		Wells	Not Implemented	Other	865									No	
COUNTY-OTHER, ELLIS	Supplemental wells	$8,826,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, FANNIN	Municipal conservation - basic	$0	16	52	71	74	75	76	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	76	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, FANNIN	Supplemental wells	$13,498,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, FREESTONE	Municipal conservation - basic	$0	14	47	64	69	72	77	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	77	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, FREESTONE	Supplemental wells	$463,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
COUNTY-OTHER, GRAYSON	Municipal conservation - basic	$0	37	124	165	168	164	155	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		37	unknown	$0	2011	Yes	155	$0	2040	Self (cash)	Yes	
COUNTY-OTHER, GRAYSON	Supplemental wells	$31,620,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, HENDERSON	Municipal conservation - basic	$0	2	7	9	10	11	12	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	12	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, HENDERSON	Supplemental wells	$404,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, JACK	Conveyance project (1)	$4,602,000	22	57	94	127	172	223	Y		Pipeline	Not Implemented	Too soon	22									Yes	
COUNTY-OTHER, JACK	Municipal conservation - basic	$0	7	23	33	39	44	51	N		No Infrastructure	Currently Operating		7	unknown	$0	2011	Yes	51	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, JACK	Supplemental wells	$372,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, KAUFMAN	Municipal conservation - basic	$0	24	68	91	99	105	112	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		24	unknown	$0	2011	Yes	112	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, KAUFMAN	Supplemental wells	$404,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, NAVARRO	Municipal conservation - basic	$0	2	8	11	12	13	14	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	14	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, NAVARRO	Supplemental wells	$558,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, PARKER	Conveyance project (1)	$0	0	500	500	500	500	500	Y		Pipeline	Not Implemented	Other	500									No	
COUNTY-OTHER, PARKER	Municipal conservation - basic	$0	44	166	233	253	253	251	N		No Infrastructure	Currently Operating		44	unknown	$0	2011	Yes	251	$0	2040	Self (cash)	Yes	
COUNTY-OTHER, PARKER	Supplemental wells	$331,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, ROCKWALL	Municipal conservation - basic	$0	4	9	12	14	15	17	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	17	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, ROCKWALL	Supplemental wells	$331,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, TARRANT	Municipal conservation - basic	$0	55	173	183	194	204	215	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		55	unknown	$0	2011	Yes	215	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, TARRANT	Supplemental wells	$463,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
COUNTY-OTHER, WISE	Municipal conservation - basic	$0	49	166	216	232	245	259	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		49	unknown	$0	2011	Yes	259	$0	2060	Self (cash)	Yes	
COUNTY-OTHER, WISE	Supplemental wells	$348,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CRANDALL	Municipal conservation - basic	$19,942	9	60	103	140	190	255	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$19,942	2011	Yes	255	$19,942	2060	Self (cash)	Yes	
CRANDALL	Municipal conservation - expanded	$5,000	6	12	16	20	26	32	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	32	$5,000	2060	Self (cash)	Yes	
CRANDALL	Purchase from water provider (1)	$6,104,000	0	113	186	132	198	206	Y		No Infrastructure	Not Implemented	Other	113									No	WMS is for Seagoville (DWU) purchase.
CRESSON	Municipal conservation - basic	$0	1	3	4	5	7	9	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	9	$0	2060	Self (cash)	Yes	
CROSS ROADS	Municipal conservation - basic	$0	16	55	67	77	88	98	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	98	$0	2060	Self (cash)	Yes	
CROSS ROADS	Municipal conservation - expanded	$0	3	9	9	9	9	9	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	9	$0	2020	Self (cash)	Yes	
CROWLEY	Conveyance project (2)	$621,000	0	60	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	60									Yes	
CROWLEY	Municipal conservation - basic	$0	20	68	110	160	208	240	N		No Infrastructure	Currently Operating		20	unknown	$0	2011	Yes	240	$0	2060	Self (cash)	Yes	
CROWLEY	Supplemental wells	$4,014,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
CULLEOKA WSC	Municipal conservation - basic	$0	18	74	103	127	154	185	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		18	unknown	$0	2011	Yes	185	$0	2060	Self (cash)	Yes	
DALLAS	Additional dry year supply	$1,750,000	25,000	0	0	0	0	0	N		No Infrastructure	Not Implemented	Other	25,000									No	
DALLAS	Additional pipeline from Lake Tawakoni (more Lake Fork supply)	$496,243,000	0	77,994	75,777	73,563	71,346	69,128	N		Pipeline	All Phases Fully Implemented			unknown	Unknown	2015	No					No	
DALLAS	Conveyance project (1)	$260,000,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	
DALLAS	Dallas Water Utilities reuse	$82,920,000	0	34,902	41,326	39,907	47,001	50,382	N		Other	Currently Operating		Unknown	Unknown	Unknown	2014	Yes	50,382	$82,920,000	2060		Yes	This strategy is partially implemented, and the remaining amount to be implemented is now an alternative WMS in the 2016 Plan.
DALLAS	Fastrill replacement (Region C component)	$1,980,278,000	0	0	0	0	0	112,100	N		No Infrastructure	Not Implemented	vironmental obstacles										No	
DALLAS	Lake Palestine connection (integrated pipeline with TRWD)	$887,954,000	0	111,776	110,670	109,563	108,455	107,347	N		Pipeline	Not Implemented	Too soon	111,776									Yes	
DALLAS	Lake Wright Patman - reallocation of flood pool	$896,478,000	0	0	0	112,100	112,100	112,100	N		Pipeline	Not Implemented	Too soon	112,100									Yes	
DALLAS	Main Stem Trinity pump station (Lake Ray Hubbard indirect reuse - DWU)	$142,567,000	0	17,168	15,004	20,010	13,700	11,105	N		No Infrastructure	Not Implemented	Too soon	17,168									Yes	
DALLAS	Municipal conservation - basic	$0	18,427	26,502	28,111	34,071	41,465	52,929	N		No Infrastructure	Currently Operating		18,427	unknown	$0	2011	Yes	52,929	$0	2060	Self (cash)	Yes	
DALLAS	Municipal conservation - expanded	$0	5	20	46	64	63	60	N		No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	60	$0	2040	Self (cash)	Yes	
DALLAS	Redistribution of supplies	$0	0	13,449	17,996	23,448	33,451	57,501	N		No Infrastructure	All Phases Fully Implemented		Unknown	Unknown	Unknown	2010	No				Unknown	No	
DALLAS	Water treatment plant - expansion	$1,068,033,000	0	0	0	0	0	0	Y		Water Treatment Plant	Under Construction			unknown	Unknown	2010	No					Yes	Eastside WTP expansion scheduled to begin in 2012 with remaining expansions to follow.
DALWORTHINGTON GARDENS	Municipal conservation - basic	$0	5	33	44	54	61	69	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	69	$0	2060	Self (cash)	Yes	
DALWORTHINGTON GARDENS	Municipal conservation - expanded	$0	0	4	5	5	5	5	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	5	$0	2030	Self (cash)	Yes	
DALWORTHINGTON GARDENS	Supplemental wells	$1,165,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
DANVILLE WSC	Municipal conservation - basic	$0	11	68	99	133	172	220	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	220	$0	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
DANVILLE WSC	Municipal conservation - expanded	$0	0	4	9	11	12	13	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	13	$0	2060	Self (cash)	Yes	
DAWSON	Municipal conservation - basic	$0	2	5	7	13	15	19	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	19	$0	2060	Self (cash)	Yes	
DAWSON	Municipal conservation - expanded	$0	0	0	0	0	1	1	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	1	$0	2050	Self (cash)	Yes	
DAWSON	Water treatment plant - new	$1,044,000	0	56	56	56	56	56	N		Water Treatment Plant	Not Implemented	Other	56									No	
DE SOTO	Municipal conservation - basic	$0	310	663	934	1,182	1,473	1,669	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		310	unknown	$0	2011	Yes	1,669	$0	2060	Self (cash)	Yes	
DE SOTO	Municipal conservation - expanded	$0	12	58	75	88	98	104	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		12	unknown	$0	2011	Yes	104	$0	2060	Self (cash)	Yes	
DECATUR	Municipal conservation - basic	$5,000	13	88	158	234	342	446	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		13	unknown	$5,000	2011	Yes	446	$5,000	2060	Self (cash)	Yes	
DECATUR	Municipal conservation - expanded	$5,000	12	20	32	45	58	68	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		12	unknown	$5,000	2011	Yes	68	$5,000	2060	Self (cash)	Yes	
DECATUR	Purchase from water provider (1)	$0	0	92	389	633	952	1,021	Y		No Infrastructure	Not Implemented	Too soon	92									Yes	
DENISON	Conveyance project (1)	$13,847,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0		$13,847,000							Yes	
DENISON	Municipal conservation - basic	$25,961	43	145	382	496	566	641	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		43	unknown	$25,961	2011	Yes	641	$25,961	2060	Self (cash)	Yes	
DENISON	Municipal conservation - expanded	$0	0	0	27	38	39	40	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	40	$0	2060	Self (cash)	Yes	
DENISON	Supplemental wells	$2,416,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
DENISON	Water treatment plant - expansion	$7,270,000	0	0	0	1,121	1,121	1,121	Y		Water Treatment Plant	Not Implemented	Too soon	1,121									Yes	
DENTON	Municipal conservation - basic	$10,000	186	1,514	2,651	3,904	5,428	8,290	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		186	unknown	$10,000	2011	Yes	8,290	$10,000	2060	Self (cash)	Yes	
DENTON	Municipal conservation - expanded	$10,000	208	378	641	896	1,114	1,486	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		208	unknown	$10,000	2011	Yes	1,486	$10,000	2060	Self (cash)	Yes	
DENTON	Water treatment plant - expansion	$265,434,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
DENTON COUNTY FWSD #1A	Municipal conservation - basic	$0	30	78	127	184	251	330	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		30	unknown	$0	2011	Yes	330	$0	2060	Self (cash)	Yes	
DENTON COUNTY FWSD #1A	Municipal conservation - expanded	$5,000	17	56	48	61	76	90	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		17	unknown	$5,000	2011	Yes	90	$5,000	2060	Self (cash)	Yes	
DOUBLE OAK	Municipal conservation - basic	$0	21	37	43	49	55	61	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		21	unknown	$0	2011	Yes	61	$0	2060	Self (cash)	Yes	
DUNCANVILLE	Municipal conservation - basic	$0	358	810	912	968	1,020	1,082	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		358	unknown	$0	2011	Yes	1,082	$0	2060	Self (cash)	Yes	
DUNCANVILLE	Municipal conservation - expanded	$0	8	31	32	32	32	32	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	32	$0	2030	Self (cash)	Yes	
EAST CEDAR CREEK FWSD	Municipal conservation - basic	$0	49	103	156	190	227	268	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		49	unknown	$0	2011	Yes	268	$0	2060	Self (cash)	Yes	
EAST CEDAR CREEK FWSD	Municipal conservation - expanded	$5,000	12	17	20	21	23	24	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		12	unknown	$5,000	2011	Yes	24	$5,000	2060	Self (cash)	Yes	
EAST CEDAR CREEK FWSD	Water treatment plant - expansion	$14,540,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
EAST FORK SUD	Municipal conservation - basic	$0	24	66	84	99	113	131	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		24	unknown	$0	2011	Yes	131	$0	2060	Self (cash)	Yes	
ECTOR	Municipal conservation - basic	$0	1	4	5	6	6	7	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	7	$0	2060	Self (cash)	Yes	
ECTOR	Supplemental wells	$1,332,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
EDGECLIFF	Municipal conservation - basic	$0	4	22	29	32	36	39	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	39	$0	2060	Self (cash)	Yes	
EDGECLIFF	Municipal conservation - expanded	$0	0	2	3	3	3	3	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	3	$0	2030	Self (cash)	Yes	
ENNIS	Ennis reuse	$31,779,000	0	0	0	333	2,199	3,696	N		Other	Not Implemented	Too soon	333									Yes	
ENNIS	Municipal conservation - basic	$27,821	150	377	559	775	1,065	1,462	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		150	unknown	$27,821	2011	Yes	1,462	$27,821	2060	Self (cash)	Yes	
ENNIS	Municipal conservation - expanded	$5,000	35	53	74	102	129	164	N		No Infrastructure	Currently Operating		35	unknown	$5,000	2011	Yes	164	$5,000	2060	Self (cash)	Yes	
ENNIS	Water treatment plant - expansion	$33,960,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
EULESS	Municipal conservation - basic	$48,804	264	597	865	977	1,080	1,182	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		264	unknown	$48,804	2011	Yes	1,182	$48,804	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
EULESS	Municipal conservation - expanded	$0	0	43	78	86	87	87	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	87	$0	2050	Self (cash)	Yes	
EULESS	Supplemental wells	$2,250,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
EUSTACE	Municipal conservation - basic	$0	2	5	7	7	8	8	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	8	$0	2050	Self (cash)	Yes	
EUSTACE	Supplemental wells	$1,035,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
EVERMAN	Municipal conservation - basic	$0	9	30	40	42	45	47	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	47	$0	2060	Self (cash)	Yes	
EVERMAN	Supplemental wells	$3,524,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
FAIRFIELD	Municipal conservation - basic	$5,000	7	24	37	73	95	116	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		7	unknown	$5,000	2011	Yes	116	$5,000	2060	Self (cash)	Yes	
FAIRFIELD	Municipal conservation - expanded	$0	0	0	0	3	4	4	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	4	$0	2050	Self (cash)	Yes	
FAIRFIELD	New wells - Carrizo Wilcox Aquifer	$573,000	0	0	0	282	282	282	N		Wells	Not Implemented	Other	282									No	
FAIRFIELD	Supplemental wells	$2,556,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
FAIRFIELD	Water treatment plant - new	$8,218,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
FAIRVIEW	Municipal conservation - basic	$5,000	29	179	312	469	523	578	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		29	unknown	$5,000	2011	Yes	578	$5,000	2060	Self (cash)	Yes	
FAIRVIEW	Municipal conservation - expanded	$5,000	48	73	97	128	130	130	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		48	unknown	$5,000	2011	Yes	130	$5,000	2050	Self (cash)	Yes	
FARMERS BRANCH	Municipal conservation - basic	$5,502	369	747	940	1,114	1,293	1,481	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		369	unknown	$5,502	2011	Yes	1,481	$5,502	2060	Self (cash)	Yes	
FARMERS BRANCH	Municipal conservation - expanded	$5,502	127	163	204	239	252	264	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		127	unknown	$5,502	2011	Yes	264	$5,502	2060	Self (cash)	Yes	
FARMERSVILLE	Municipal conservation - basic	$0	6	59	103	176	290	437	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	437	$0	2060	Self (cash)	Yes	
FATE	Municipal conservation - basic	$0	22	164	253	349	443	530	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		22	unknown	$0	2011	Yes	530	$0	2060	Self (cash)	Yes	
FERRIS	Municipal conservation - basic	$0	4	14	20	25	31	37	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	37	$0	2060	Self (cash)	Yes	
FERRIS	Municipal conservation - expanded	$5,000	3	3	3	4	4	5	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$5,000	2011	Yes	5	$5,000	2060	Self (cash)	Yes	
FERRIS	Supplemental wells	$1,300,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
FILES VALLEY WSC	Municipal conservation - basic	$0	2	6	9	10	12	14	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	14	$0	2060	Self (cash)	Yes	
FLO COMMUNITY WSC	Municipal conservation - basic	$0	0	1	2	2	2	2	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2030	Self (cash)	Yes	
FLO COMMUNITY WSC	Supplemental wells	$2,305,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
FLOWER MOUND	Municipal conservation - basic	$42,253	620	1,399	2,255	2,529	2,795	3,063	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		620	unknown	$42,253	2011	Yes	3,063	$42,253	2060	Self (cash)	Yes	
FLOWER MOUND	Municipal conservation - expanded	$10,000	240	399	568	595	598	598	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		240	unknown	$10,000	2011	Yes	598	$10,000	2050	Self (cash)	Yes	
FOREST HILL	Municipal conservation - basic	$0	14	56	81	94	109	121	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	121	$0	2060	Self (cash)	Yes	
FORNEY	Municipal conservation - basic	$0	28	214	324	426	529	639	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		28	unknown	$0	2011	Yes	639	$0	2060	Self (cash)	Yes	
FORNEY	Municipal conservation - expanded	$0	0	16	24	28	32	34	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	34	$0	2060	Self (cash)	Yes	
FORNEY LAKE WSC	Municipal conservation - basic	$0	18	80	125	176	246	342	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		18	unknown	$0	2011	Yes	342	$0	2060	Self (cash)	Yes	
FORNEY LAKE WSC	Municipal conservation - expanded	$0	0	6	10	14	18	22	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
FORT WORTH	Direct reuse	$182,699,000	1,552	4,589	11,680	16,199	16,199	16,199	N		Other	Currently Operating		3,469	Unknown	Unknown	2011	Yes	16,199	$182,699,000	2040	Unknown	Yes	Unimplemented phases are included in 2016 Plan
FORT WORTH	Municipal conservation - basic	$0	4,871	10,203	15,717	22,042	30,118	40,789	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		4,871	unknown	$0	2011	Yes	40,789	$0	2060	TWDB	Yes	
FORT WORTH	Municipal conservation - expanded	$0	0	553	1,288	1,880	2,284	2,761	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2,761	$0	2060	TWDB	Yes	
FORT WORTH	Water treatment plant - expansion	$772,646,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	Multiple WTP expansions are included in this WMS.
FORT WORTH	Water treatment plant - new	$100,617,000	0	0	0	0	0	0	N		Water Treatment Plant	Currently Operating		6,726	Unknown	Unknown	2013	Yes	20,757	$100,617,000	2030	Unknown	No	West WTP completed, Southwest WTP no longer a WMS.
FRISCO	Direct reuse - Frisco	$31,448,606	0	2,240	3,359	5,650	5,649	5,650	N		No Infrastructure	Not Implemented	Too soon	2,240									Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
FRISCO	Municipal conservation - basic	$38,971	311	3,277	7,656	10,222	12,374	13,114	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		311	unknown	$38,971	2011	Yes	13,114	$38,971	2060	Self (cash)	Yes	
FRISCO	Municipal conservation - expanded	$38,971	428	785	1,087	1,366	1,564	1,580	N		No Infrastructure	Currently Operating		428	unknown	$38,971	2011	Yes	1,580	$38,971	2060	Self (cash)	Yes	
FROST	Municipal conservation - basic	$0	1	3	4	4	4	4	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	4	$0	2030	Self (cash)	Yes	
FROST	Supplemental wells	$558,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
GAINESVILLE	Cooke County project	$50,280,000	0	2,240	2,240	3,360	4,480	4,480	N		Water Treatment Plant	Currently Operating		1,120	Unknown	Unknown	2014	Yes	4,480	$50,280,000	2050	TWDB	Yes	Additional WTP expansions and conveyance are WMSs in the 2016 Plan.
GAINESVILLE	Direct reuse	$1,828,000	0	169	137	141	144	147	N		No Infrastructure	Not Implemented	Too soon	169									Yes	
GAINESVILLE	Municipal conservation - basic	$0	27	94	224	288	359	440	N		No Infrastructure	Currently Operating		27	unknown	$0	2011	Yes	440	$0	2060	Self (cash)	Yes	
GAINESVILLE	Municipal conservation - expanded	$0	0	0	13	19	20	22	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
GAINESVILLE	Overdraft Trinity Aquifer - existing wells	$0	103	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
GAINESVILLE	Supplemental wells	$5,648,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
GARLAND	Municipal conservation - basic	$81,051	340	2,259	3,306	3,667	4,002	4,353	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		340	unknown	$81,051	2011	Yes	4,353	$81,051	2060	Self (cash)	Yes	
GARLAND	Municipal conservation - expanded	$10,000	418	554	681	726	723	722	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		418	unknown	$10,000	2011	Yes	722	$10,000	2040	Self (cash)	Yes	
GASTONIA-SCURRY SUD	Municipal conservation - basic	$0	13	46	68	88	114	147	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		13	unknown	$0	2011	Yes	147	$0	2060	Self (cash)	Yes	
GLENN HEIGHTS	Municipal conservation - basic	$0	21	71	107	131	158	187	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		21	unknown	$0	2011	Yes	187	$0	2060	Self (cash)	Yes	
GLENN HEIGHTS	Supplemental wells	$1,659,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
GRAND PRAIRIE	Municipal conservation - basic	$10,000	1,211	2,886	3,878	4,753	5,725	6,129	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1,211	unknown	$10,000	2011	Yes	6,129	$10,000	2060	Self (cash)	Yes	
GRAND PRAIRIE	Municipal conservation - expanded	$0	30	144	183	206	231	238	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		30	unknown	$0	2011	Yes	238	$0	2060	Self (cash)	Yes	
GRAND PRAIRIE	Purchase from water provider (1)	$36,724,000	0	12,040	11,562	10,766	9,824	8,976	Y		Pipeline	Currently Operating		3,363	Unknown	Unknown	2015	Yes	6,726	$36,724,000	2030	Unknown	Yes	Partially implemented, additional phase is included in 2016 Plan.
GRAND PRAIRIE	Supplemental wells	$3,000,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
GRAPEVINE	Municipal conservation - basic	$45,647	453	939	1,437	1,597	1,756	1,919	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		453	unknown	$45,647	2011	Yes	1,919	$45,647	2060	Self (cash)	Yes	
GRAPEVINE	Municipal conservation - expanded	$8,412	180	254	316	334	333	333	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		180	unknown	$8,412	2011	Yes	333	$8,412	2040	Self (cash)	Yes	
GREATER TEXOMA UTILITY AUTHORITY	Collin-Grayson Municipal Alliance System	$77,366,000	0	3,255	8,614	14,192	20,604	27,412	N		Pipeline	Not Implemented	Too soon	3,255				Yes					Yes	
GREATER TEXOMA UTILITY AUTHORITY	Grayson County project	$136,016,000	200	7,560	10,920	13,440	19,040	24,640	N		Water Treatment Plant	Not Implemented	Too soon	200				Yes					Yes	
GUN BARREL CITY	Municipal conservation - basic	$0	11	72	105	136	174	224	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	224	$0	2060	Self (cash)	Yes	
GUN BARREL CITY	Water treatment plant - new	$11,576,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Other	0									No	
GUNTER	Municipal conservation - basic	$0	3	16	28	39	51	62	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	62	$0	2060	Self (cash)	Yes	
GUNTER	Municipal conservation - expanded	$5,000	2	3	4	5	6	6	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	6	$5,000	2050	Self (cash)	Yes	
GUNTER	Supplemental wells	$2,475,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HACKBERRY	Municipal conservation - basic	$0	3	9	14	17	20	21	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	21	$0	2060	Self (cash)	Yes	
HACKBERRY	Supplemental wells	$959,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HALTOM CITY	Municipal conservation - basic	$0	56	221	303	340	371	401	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		56	unknown	$0	2011	Yes	401	$0	2060	Self (cash)	Yes	
HASLET	Municipal conservation - basic	$5,000	6	60	131	154	176	198	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	198	$5,000	2060	Self (cash)	Yes	
HASLET	Supplemental wells	$1,873,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HEATH	Municipal conservation - basic	$0	17	114	180	254	348	469	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		17	unknown	$0	2011	Yes	469	$0	2060	Self (cash)	Yes	
HEATH	Municipal conservation - expanded	$0	0	0	1	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2040	Self (cash)	Yes	
HEBRON	Municipal conservation - basic	$0	0	5	6	8	8	9	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	9	$0	2060	Self (cash)	Yes	
HICKORY CREEK	Municipal conservation - basic	$0	24	57	80	110	122	133	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		24	unknown	$0	2011	Yes	133	$0	2060	Self (cash)	Yes	
HICKORY CREEK SUD	Additional Woodbine Aquifer - Existing Wells	$0	0	0	0	0	0	0	N		Wells	Not Implemented	Other	0									No	
HICKORY CREEK SUD	Municipal conservation - basic	$0	1	3	3	5	5	7	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	7	$0	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
HICKORY CREEK SUD	Municipal conservation - expanded	$5,000	0	0	0	1	1	1	N		No Infrastructure	Currently Operating		0	unknown	$5,000	2011	Yes	1	$5,000	2040	Self (cash)	Yes	
HIGH POINT WSC	Municipal conservation - basic	$0	4	22	33	43	55	68	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	68	$0	2060	Self (cash)	Yes	
HIGHLAND PARK	Municipal conservation - basic	$0	22	61	86	102	117	132	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		22	unknown	$0	2011	Yes	132	$0	2060	Self (cash)	Yes	
HIGHLAND VILLAGE	Municipal conservation - basic	$5,000	31	98	253	321	356	391	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		31	unknown	$5,000	2011	Yes	391	$5,000	2060	Self (cash)	Yes	
HIGHLAND VILLAGE	Municipal conservation - expanded	$5,000	47	52	75	81	80	80	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		47	unknown	$5,000	2011	Yes	80	$5,000	2040	Self (cash)	Yes	
HIGHLAND VILLAGE	Supplemental wells	$4,992,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HONEY GROVE	Municipal conservation - basic	$5,000	3	30	67	85	105	127	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$5,000	2011	Yes	127	$5,000	2060	Self (cash)	Yes	
HONEY GROVE	Municipal conservation - expanded	$0	0	1	1	3	3	4	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	4	$0	2060	Self (cash)	Yes	
HONEY GROVE	Supplemental wells	$1,844,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HOWE	Municipal conservation - basic	$0	5	22	39	55	66	78	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	78	$0	2060	Self (cash)	Yes	
HOWE	Municipal conservation - expanded	$5,000	4	6	9	11	12	14	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		4	unknown	$5,000	2011	Yes	14	$5,000	2060	Self (cash)	Yes	
HOWE	Supplemental wells	$2,286,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HUDSON OAKS	Municipal conservation - basic	$5,000	4	23	36	49	61	76	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$5,000	2011	Yes	76	$5,000	2060	Self (cash)	Yes	
HUDSON OAKS	Supplemental wells	$7,518,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HURST	Municipal conservation - basic	$33,764	56	393	546	605	665	727	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		56	unknown	$33,764	2011	Yes	727	$33,764	2060	Self (cash)	Yes	
HURST	Municipal conservation - expanded	$0	0	34	57	65	64	64	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	64	$0	2040	Self (cash)	Yes	
HURST	Supplemental wells	$5,958,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
HUTCHINS	Municipal conservation - basic	$0	23	48	75	111	163	299	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		23	unknown	$0	2011	Yes	299	$0	2060	Self (cash)	Yes	
HUTCHINS	Municipal conservation - expanded	$0	0	8	3	5	7	11	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	11	$0	2060	Self (cash)	Yes	
IRRIGATION, COLLIN	Golf course conservation	$0	6	99	190	238	283	328	N		No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	328	$0	2060	Self (cash)	Yes	
IRRIGATION, COLLIN	Supplemental wells	$608,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, COOKE	Golf course conservation	$0	0	7	11	15	18	22	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
IRRIGATION, COOKE	Overdraft Trinity Aquifer - existing wells	$0	140	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
IRRIGATION, COOKE	Supplemental wells	$1,678,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, DALLAS	Golf course conservation	$0	26	429	825	1,032	1,227	1,422	N		No Infrastructure	Currently Operating		26	unknown	$0	2011	Yes	1,422	$0	2060	Self (cash)	Yes	
IRRIGATION, DALLAS	Supplemental wells	$316,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, DENTON	New wells - Trinity Aquifer	$717,000	200	200	200	200	200	200	N		Wells	All Phases Fully Implemented		400	Unknown	Unknown	2014	No			2020	Unknown	No	
IRRIGATION, DENTON	Supplemental wells	$116,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, DENTON	TRA Denton Creek wastewater treatment plant reuse	$0	0	3,750	3,750	3,750	3,750	3,750	N		No Infrastructure	Not Implemented	Other	3,750									No	
IRRIGATION, ELLIS	Golf course conservation	$0	1	15	29	37	44	51	N		No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	51	$0	2060	Self (cash)	Yes	
IRRIGATION, ELLIS	New wells - Woodbine Aquifer	$2,487,000	563	563	563	563	563	563	N		Wells	All Phases Fully Implemented		440	Unknown	Unknown	2014	No			2020	Unknown	No	
IRRIGATION, ELLIS	Supplemental wells	$394,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, FANNIN	Supplemental wells	$5,123,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, FREESTONE	Supplemental wells	$75,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, GRAYSON	Supplemental wells	$10,032,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, KAUFMAN	Golf course conservation	$0	4	72	140	177	212	247	N		No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	247	$0	2060	Self (cash)	Yes	
IRRIGATION, KAUFMAN	Supplemental wells	$56,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, PARKER	Supplemental wells	$28,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, ROCKWALL	Golf course conservation	$0	2	41	76	89	106	123	N		No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	123	$0	2060	Self (cash)	Yes	
IRRIGATION, TARRANT	Golf course conservation	$0	17	274	527	660	785	910	N		No Infrastructure	Currently Operating		17	unknown	$0	2011	Yes	910	$0	2060	Self (cash)	Yes	
IRRIGATION, TARRANT	Supplemental wells	$75,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRRIGATION, WISE	Golf course conservation	$0	0	5	10	13	15	18	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	18	$0	2060	Self (cash)	Yes	
IRRIGATION, WISE	Supplemental wells	$35,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
IRVING	Conveyance project (2)	$12,879,000	0	0	0	0	0	0	Y	Princeton PS expansion	Other	Not Implemented	Too soon	0	0	$12,879,000	2020	No				Unknown	Yes	Zero supply because WMS doesn't create new supply, makes existing supply available for use.
IRVING	Direct reuse	$58,628,000	0	6,000	8,000	8,000	8,000	8,000	N		Other	Not Implemented	Other	6,000				Yes					No	
IRVING	Facility improvements	$18,183,800	0	0	0	0	0	0	N		Pipeline	Not Implemented	Too soon	0									Yes	
IRVING	Municipal conservation - basic	$10,000	1,574	2,856	3,767	4,580	5,378	6,167	N		No Infrastructure	Currently Operating		1,574	unknown	$10,000	2011	Yes	6,167	$10,000	2060	Self (cash)	Yes	
IRVING	Municipal conservation - expanded	$10,000	605	922	1,115	1,256	1,301	1,335	N		No Infrastructure	Currently Operating		605	unknown	$10,000	2011	Yes	1,335	$10,000	2060	Self (cash)	Yes	
IRVING	Oklahoma water to Irving	$194,825,000	0	0	25,000	25,000	25,000	25,000	N		Pipeline	Not Implemented	Too soon	25,000									Yes	
ITALY	Municipal conservation - basic	$0	4	13	19	23	27	32	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	32	$0	2060	Self (cash)	Yes	
ITALY	Supplemental wells	$2,434,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
JACKSBORO	Municipal conservation - basic	$0	6	19	26	28	30	33	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	33	$0	2060	Self (cash)	Yes	
JOHNSON COUNTY SUD	Municipal conservation - basic	$0	7	24	31	40	52	63	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		7	unknown	$0	2011	Yes	63	$0	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
JOSEPHINE	Municipal conservation - basic	$0	2	15	22	31	41	52	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	52	$0	2060	Self (cash)	Yes	
JUSTIN	Municipal conservation - basic	$19,324	23	69	130	235	313	375	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		23	unknown	$19,324	2011	Yes	375	$19,324	2060	Self (cash)	Yes	
JUSTIN	Municipal conservation - expanded	$5,000	6	13	20	34	44	49	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	49	$5,000	2060	Self (cash)	Yes	
JUSTIN	Supplemental wells	$2,188,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
KAUFMAN	Municipal conservation - basic	$22,543	14	103	81	100	120	155	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$22,543	2011	Yes	155	$22,543	2060	Self (cash)	Yes	
KAUFMAN	Municipal conservation - expanded	$5,000	12	16	18	20	23	27	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		12	unknown	$5,000	2011	Yes	27	$5,000	2060	Self (cash)	Yes	
KELLER	Municipal conservation - basic	$0	268	592	1,009	1,101	1,196	1,290	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure.	Currently Operating		268	unknown	$0	2011	Yes	1,290	$0	2060	Self (cash)	Yes	
KELLER	Municipal conservation - expanded	$0	0	42	61	66	66	66	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	66	$0	2040	Self (cash)	Yes	
KELLER	Supplemental wells	$711,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
KEMP	Municipal conservation - basic	$0	2	9	14	15	16	17	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	17	$0	2060	Self (cash)	Yes	
KENNEDALE	Municipal conservation - basic	$0	37	89	122	147	169	190	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		37	unknown	$0	2011	Yes	190	$0	2060	Self (cash)	Yes	
KENNEDALE	Municipal conservation - expanded	$0	1	6	8	11	13	13	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	13	$0	2050	Self (cash)	Yes	
KENNEDALE	New wells - Trinity Aquifer	$717,000	216	216	216	216	216	216	N		Wells	All Phases Fully Implemented		268	Unknown	Unknown	2014	No				Unknown	No	
KENNEDALE	Supplemental wells	$4,732,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
KERENS	Municipal conservation - basic	$0	4	10	14	16	17	19	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	19	$0	2060	Self (cash)	Yes	
KIOWA HOMEOWNERS WSC	Municipal conservation - basic	$0	6	20	28	31	34	38	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	38	$0	2060	Self (cash)	Yes	
KIOWA HOMEOWNERS WSC	Supplemental wells	$1,948,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
KRUGERVILLE	Municipal conservation - basic	$0	3	10	14	20	28	42	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	42	$0	2060	Self (cash)	Yes	
KRUM	Municipal conservation - basic	$0	9	25	34	41	49	59	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	59	$0	2060	Self (cash)	Yes	
KRUM	Municipal conservation - expanded	$5,000	6	6	7	7	8	9	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	9	$5,000	2060	Self (cash)	Yes	
KRUM	Supplemental wells	$2,266,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LADONIA	Municipal conservation - basic	$0	2	23	36	46	59	80	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	80	$0	2060	Self (cash)	Yes	
LADONIA	Municipal conservation - expanded	$0	3	8	10	11	13	15	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	15	$0	2060	Self (cash)	Yes	
LADONIA	Purchase from water provider (3)	$12,966,000	0	3,405	3,405	3,405	3,405	3,405	Y		No Infrastructure	Not Implemented	Too soon	3,405									Yes	
LADONIA	Supplemental wells	$2,250,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LAKE CITIES MUNICIPAL UTILITY AUTHORITY	Supplemental wells	$2,355,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LAKE DALLAS	Municipal conservation - basic	$0	40	84	114	128	142	156	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		40	unknown	$0	2011	Yes	156	$0	2060	Self (cash)	Yes	
LAKE WORTH	Municipal conservation - basic	$0	29	62	84	102	121	138	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		29	unknown	$0	2011	Yes	138	$0	2060	Self (cash)	Yes	
LAKE WORTH	Municipal conservation - expanded	$0	1	3	5	6	7	7	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	7	$0	2050	Self (cash)	Yes	
LAKE WORTH	New wells - Trinity Aquifer	$416,000	105	105	105	105	105	105	N		Wells	All Phases Fully Implemented		105	Unknown	Unknown	2014	No				Unknown	No	
LAKE WORTH	Supplemental wells	$1,951,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LAKESIDE	Municipal conservation - basic	$18,728	3	9	14	50	96	117	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$18,728	2011	Yes	117	$18,728	2060	Self (cash)	Yes	
LAKESIDE	Municipal conservation - expanded	$5,000	5	6	6	10	11	13	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$5,000	2011	Yes	13	$5,000	2060	Self (cash)	Yes	
LAKESIDE	New wells - Trinity Aquifer	$662,000	0	0	264	264	264	264	N		Wells	Not Implemented	Other	264									No	
LAKESIDE	Supplemental wells	$2,065,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LANCASTER	Municipal conservation - basic	$0	62	281	378	411	442	475	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		62	unknown	$0	2011	Yes	475	$0	2060	Self (cash)	Yes	
LANCASTER	Purchase from water provider (1)	$2,373,000	0	948	1,127	856	1,004	907	Y		Other	Currently Operating		948	Unknown	Unknown	2013	No				Unknown	No	New delivery point for DWU water

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
LAVON WSC	Municipal conservation - basic	$0	11	97	149	197	263	363	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	363	$0	2060	Self (cash)	Yes	
LEONARD	Municipal conservation - basic	$0	3	12	22	38	58	77	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	77	$0	2060	Self (cash)	Yes	
LEONARD	Municipal conservation - expanded	$0	3	3	4	6	9	11	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	11	$0	2060	Self (cash)	Yes	
LEONARD	Supplemental wells	$2,442,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LEWISVILLE	Municipal conservation - basic	$61,895	721	1,422	1,868	2,308	2,878	3,569	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		721	unknown	$61,895	2011	Yes	3,569	$61,895	2060	Self (cash)	Yes	
LEWISVILLE	Municipal conservation - expanded	$61,985	190	276	351	419	472	537	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		190	unknown	$61,985	2011	Yes	537	$61,985	2060	Self (cash)	Yes	
LEWISVILLE	Water treatment plant - expansion	$53,666,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
LEWISVILLE	Water treatment plant - new	$31,621,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Other	0									No	
LINCOLN PARK	Municipal conservation - basic	$0	1	5	7	9	10	13	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	13	$0	2060	Self (cash)	Yes	
LINCOLN PARK	Supplemental wells	$500,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LINDSAY	Municipal conservation - basic	$0	2	5	7	8	8	9	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	9	$0	2060	Self (cash)	Yes	
LINDSAY	Supplemental wells	$1,380,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LITTLE ELM	Municipal conservation - basic	$5,000	179	371	540	684	753	823	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		179	unknown	$5,000	2011	Yes	823	$5,000	2060	Self (cash)	Yes	
LITTLE ELM	Municipal conservation - expanded	$5,000	44	74	92	105	106	106	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		44	unknown	$5,000	2011	Yes	106	$5,000	2050	Self (cash)	Yes	
LITTLE ELM	New wells - Trinity Aquifer	$421,000	410	410	410	410	410	410	N		Wells	Not Implemented	Other	410									No	Little Elm is abandoning well, therefore, no future allocation.
LITTLE ELM	Supplemental wells	$2,004,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, COLLIN	Supplemental wells	$304,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, COOKE	Supplemental wells	$4,614,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, DALLAS	Supplemental wells	$186,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, DENTON	Supplemental wells	$116,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, ELLIS	Supplemental wells	$388,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, FANNIN	Supplemental wells	$1,472,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, FREESTONE	Supplemental wells	$75,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, GRAYSON	Supplemental wells	$1,025,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, HENDERSON	Supplemental wells	$56,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, JACK	Supplemental wells	$43,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, KAUFMAN	Supplemental wells	$56,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, NAVARRO	Supplemental wells	$105,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, PARKER	Supplemental wells	$28,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, ROCKWALL	Supplemental wells	$28,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, TARRANT	Supplemental wells	$75,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LIVESTOCK, WISE	Supplemental wells	$35,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LOG CABIN	Municipal conservation - basic	$0	1	6	8	9	9	10	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	10	$0	2060	Self (cash)	Yes	
LOG CABIN	Supplemental wells	$1,400,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
LOWRY CROSSING	Municipal conservation - basic	$0	4	22	33	39	44	48	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	48	$0	2060	Self (cash)	Yes	
LUCAS	Municipal conservation - basic	$0	14	57	84	116	175	254	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	254	$0	2060	Self (cash)	Yes	
LUELLA WSC	Municipal conservation - basic	$0	5	18	27	33	36	43	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	43	$0	2060	Self (cash)	Yes	
LUELLA WSC	Supplemental wells	$4,214,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
M E N WSC	Municipal conservation - basic	$0	6	18	26	30	34	39	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	39	$0	2060	Self (cash)	Yes	
M E N WSC	Purchase from water provider (1)	$3,002,000	0	102	102	102	317	292	Y		No Infrastructure	Not Implemented	Too soon	102									Yes	
MABANK	Municipal conservation - basic	$5,000	6	69	170	208	253	313	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	313	$5,000	2060	Self (cash)	Yes	
MABANK	Municipal conservation - expanded	$0	0	2	3	3	5	5	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	5	$0	2050	Self (cash)	Yes	
MABANK	Water treatment plant - expansion - reuse sources	$4,094,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
MACBEE SUD	Municipal conservation - basic	$0	0	2	3	3	4	6	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	6	$0	2060	Self (cash)	Yes	
MALAKOFF	Municipal conservation - basic	$0	3	11	15	17	20	22	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
MALAKOFF	Supplemental wells	$1,512,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANSFIELD	Municipal conservation - basic	$28,819	508	1,232	1,872	2,497	3,087	3,732	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		508	unknown	$28,819	2011	Yes	3,732	$28,819	2060	Self (cash)	Yes	
MANSFIELD	Municipal conservation - expanded	$0	16	89	140	192	222	251	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	251	$0	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
MANSFIELD	Water treatment plant - expansion	$118,016,000	0	0	0	0	0	0	Y		Water Treatment Plant	Currently Operating			Unknown	Unknown	2014	Yes	58,855	$118,016,000	2060	Unknown	Yes	Additional WTP expansions are WMSs in the 2016 Plan.
MANSFIELD	Water treatment plant - new	$41,080,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Other	0									No	
MANUFACTURING, COLLIN	Manufacturing conservation	$0	0	6	72	108	119	130	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	130	$0	2060	Self (cash)	Yes	
MANUFACTURING, COLLIN	Supplemental wells	$506,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, COOKE	Manufacturing conservation	$0	0	1	7	10	11	12	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	12	$0	2060	Self (cash)	Yes	
MANUFACTURING, COOKE	Supplemental wells	$1,584,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, COOKE	Water treatment plant - new	$0	0	0	60	61	63	65	N		Water Treatment Plant	Not Implemented	Other	60									No	
MANUFACTURING, DALLAS	Manufacturing conservation	$0	0	68	781	1,135	1,212	1,258	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	1,258	$0	2060	Self (cash)	Yes	
MANUFACTURING, DALLAS	Supplemental wells	$1,410,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, DENTON	Manufacturing conservation	$0	0	2	29	44	49	53	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	53	$0	2060	Self (cash)	Yes	
MANUFACTURING, DENTON	New wells - Trinity Aquifer	$717,000	200	200	200	200	200	200	N		Wells	Not Implemented	Other	200									No	
MANUFACTURING, DENTON	Supplemental wells	$504,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, ELLIS	Supplemental wells	$13,358,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, GRAYSON	Manufacturing conservation	$0	1	15	175	255	272	291	N		No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	291	$0	2060	Self (cash)	Yes	
MANUFACTURING, GRAYSON	Supplemental wells	$12,982,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, HENDERSON	Manufacturing conservation	$0	0	0	3	4	5	5	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	5	$0	2050	Self (cash)	Yes	
MANUFACTURING, HENDERSON	Supplemental wells	$315,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, KAUFMAN	Manufacturing conservation	$0	0	1	15	22	23	25	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	25	$0	2060	Self (cash)	Yes	
MANUFACTURING, NAVARRO	Manufacturing conservation	$0	0	1	16	23	25	27	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	27	$0	2060	Self (cash)	Yes	
MANUFACTURING, PARKER	Manufacturing conservation	$0	0	1	6	9	10	10	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	10	$0	2050	Self (cash)	Yes	
MANUFACTURING, PARKER	Supplemental wells	$242,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MANUFACTURING, ROCKWALL	Manufacturing conservation	$0	0	0	1	1	1	2	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2060	Self (cash)	Yes	
MANUFACTURING, TARRANT	Manufacturing conservation	$0	0	35	413	630	711	784	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	784	$0	2060	Self (cash)	Yes	
MANUFACTURING, WISE	Manufacturing conservation	$0	0	1	12	18	19	21	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	21	$0	2060	Self (cash)	Yes	
MANUFACTURING, WISE	Supplemental wells	$259,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MARILEE SUD	Municipal conservation - basic	$0	9	42	65	83	111	143	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	143	$0	2060	Self (cash)	Yes	
MARILEE SUD	Municipal conservation - expanded	$0	5	7	10	12	15	19	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	19	$0	2060	Self (cash)	Yes	
MARILEE SUD	Supplemental wells	$4,307,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MAYPEARL	Municipal conservation - basic	$0	2	12	18	20	22	24	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	24	$0	2060	Self (cash)	Yes	
MAYPEARL	Municipal conservation - expanded	$0	0	1	1	1	1	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2060	Self (cash)	Yes	
MAYPEARL	Supplemental wells	$1,559,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MCKINNEY	Municipal conservation - basic	$53,573	303	3,347	7,621	10,503	12,257	13,108	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		303	unknown	$53,573	2011	Yes	13,108	$53,573	2060	Self (cash)	Yes	
MCKINNEY	Municipal conservation - expanded	$10,000	356	762	1,120	1,430	1,569	1,579	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		356	unknown	$10,000	2011	Yes	1,579	$10,000	2060	Self (cash)	Yes	
MCLENDON-CHISHOLM	Municipal conservation - basic	$0	4	11	15	18	22	27	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	27	$0	2060	Self (cash)	Yes	
MELISSA	Conveyance project (1)	$1,916,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	
MELISSA	Municipal conservation - basic	$5,000	12	146	255	401	916	1,151	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		12	unknown	$5,000	2011	Yes	1,151	$5,000	2060	Self (cash)	Yes	
MELISSA	Municipal conservation - expanded	$0	0	0	0	0	51	67	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	67	$0	2060	Self (cash)	Yes	
MELISSA	Supplemental wells	$1,330,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MESQUITE	Municipal conservation - basic	$62,452	221	1,610	2,479	2,822	3,114	3,404	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		221	unknown	$62,452	2011	Yes	3,404	$62,452	2060	Self (cash)	Yes	
MESQUITE	Municipal conservation - expanded	$0	0	76	173	228	234	234	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	234	$0	2050	Self (cash)	Yes	
MIDLOTHIAN	Municipal conservation - basic	$23,236	156	591	905	1,198	1,527	1,890	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		156	unknown	$23,236	2011	Yes	1,890	$23,236	2060	Self (cash)	Yes	
MIDLOTHIAN	Municipal conservation - expanded	$5,000	37	74	125	176	210	244	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		37	unknown	$5,000	2011	Yes	244	$5,000	2060	Self (cash)	Yes	
MIDLOTHIAN	Purchase from water provider (1)	$0	46	0	0	0	0	0	N		No Infrastructure	Currently Operating		46		$0	2014				2014		No	
MIDLOTHIAN	Water treatment plant - expansion	$66,150,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
MIDLOTHIAN	Water treatment plant - new	$30,590,000	0	0	0	0	0	0	N		Water Treatment Plant	Currently Operating		5,045	Unknown	Unknown	2014	No				Unknown	No	
MILFORD	Municipal conservation - basic	$0	1	4	5	5	6	6	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	6	$0	2050	Self (cash)	Yes	
MILFORD	Supplemental wells	$958,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MILLIGAN WSC	Municipal conservation - basic	$0	3	11	13	13	13	14	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	14	$0	2060	Self (cash)	Yes	
MINERAL WELLS	Municipal conservation - basic	$0	10	19	25	27	29	32	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		10	unknown	$0	2011	Yes	32	$0	2060	Self (cash)	Yes	
MINING, COOKE	Overdraft Trinity Aquifer - new wells	$269,000	75	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
MINING, COOKE	Supplemental wells	$420,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, DALLAS	Supplemental wells	$316,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
MINING, DENTON	New wells - Trinity Aquifer	$1,064,000	200	200	200	200	200	200	N		Wells	All Phases Fully Implemented		392	Unknown	Unknown	2014	No			2020	Unknown	No	
MINING, DENTON	Supplemental wells	$267,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, ELLIS	Supplemental wells	$388,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, FREESTONE	Supplemental wells	$118,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, GRAYSON	Supplemental wells	$2,885,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, HENDERSON	Supplemental wells	$82,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, JACK	Indirect reuse - Jacksboro for Jack County mining	$200,000	385	385	385	385	385	385	N		No Infrastructure	Not Implemented	Too soon	385									Yes	
MINING, JACK	Supplemental wells	$63,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, NAVARRO	Supplemental wells	$348,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, PARKER	Supplemental wells	$38,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, TARRANT	Supplemental wells	$156,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MINING, WISE	Direct reuse	$0	0	3,569	7,378	10,828	14,241	17,304	N		Other	Not Implemented	Too soon	3,569									Yes	
MINING, WISE	Supplemental wells	$49,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MOUNTAIN PEAK SUD	Municipal conservation - basic	$0	37	73	96	125	170	231	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		37	unknown	$0	2011	Yes	231	$0	2060	Self (cash)	Yes	
MOUNTAIN PEAK SUD	Municipal conservation - expanded	$5,000	9	13	14	16	20	26	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		9	unknown	$5,000	2011	Yes	26	$5,000	2060	Self (cash)	Yes	
MOUNTAIN PEAK SUD	New wells - Woodbine Aquifer	$876,000	0	200	200	200	200	200	N		Wells	Not Implemented	Too soon	200									Yes	
MOUNTAIN PEAK SUD	Overdraft Trinity Aquifer - existing wells	$0	301	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
MOUNTAIN PEAK SUD	Supplemental wells	$3,458,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MT ZION WSC	Municipal conservation - basic	$0	4	18	24	27	31	34	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	34	$0	2060	Self (cash)	Yes	
MT ZION WSC	Municipal conservation - expanded	$0	0	2	2	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2020	Self (cash)	Yes	
MUENSTER	Municipal conservation - basic	$0	3	9	13	23	27	32	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	32	$0	2060	Self (cash)	Yes	
MUENSTER	Municipal conservation - expanded	$0	0	0	0	2	2	3	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	3	$0	2060	Self (cash)	Yes	
MUENSTER	Subordination agreement - future-only sources	$8,217,000	0	280	220	219	217	215	N		No Infrastructure	Not Implemented	Other	280									No	
MUENSTER	Supplemental wells	$2,150,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
MURPHY	Municipal conservation - basic	$0	42	367	452	524	595	667	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		42	unknown	$0	2011	Yes	667	$0	2060	Self (cash)	Yes	
MURPHY	Municipal conservation - expanded	$0	0	44	55	56	56	56	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	56	$0	2040	Self (cash)	Yes	
MUSTANG SUD	Municipal conservation - basic	$0	16	64	101	202	315	434	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	434	$0	2060	Self (cash)	Yes	
MUSTANG SUD	Municipal conservation - expanded	$5,000	7	11	14	27	39	51	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		7	unknown	$5,000	2011	Yes	51	$5,000	2060	Self (cash)	Yes	
MUSTANG SUD	Supplemental wells	$4,444,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
NAVARRO MILLS WSC	Municipal conservation - basic	$0	5	18	27	33	41	49	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	49	$0	2060	Self (cash)	Yes	
NAVARRO MILLS WSC	New wells - Woodbine Aquifer	$1,200,000	0	44	44	44	44	44	N		Wells	All Phases Fully Implemented		205	Unknown	Unknown	2014	No			2020	Unknown	Yes	Navarro Mills has plans for additional wells in the future.
NEVADA	Municipal conservation - basic	$0	3	21	31	74	139	392	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	392	$0	2060	Self (cash)	Yes	
NEVADA	Municipal conservation - expanded	$0	0	1	2	3	6	13	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	13	$0	2060	Self (cash)	Yes	
NEW FAIRVIEW	Municipal conservation - basic	$0	4	13	20	26	32	40	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	40	$0	2060	Self (cash)	Yes	
NEW FAIRVIEW	Purchase from water provider (1)	$2,518,400	0	47	93	127	158	184	Y		No Infrastructure	Not Implemented	Too soon	47									Yes	
NEW FAIRVIEW	Supplemental wells	$1,340,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
NEW HOPE	Municipal conservation - basic	$0	2	16	33	57	98	244	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	244	$0	2060	Self (cash)	Yes	
NEW HOPE	Municipal conservation - expanded	$0	0	1	2	4	6	12	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	12	$0	2060	Self (cash)	Yes	
NEWARK	Conveyance project (2)	$2,376,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	
NEWARK	Municipal conservation - basic	$0	2	9	15	22	32	47	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	47	$0	2060	Self (cash)	Yes	
NEWARK	Municipal conservation - expanded	$5,000	1	2	3	4	5	7	N		No Infrastructure	Currently Operating		1	unknown	$5,000	2011	Yes	7	$5,000	2060	Self (cash)	Yes	
NEWARK	Supplemental wells	$2,382,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
NORTH COLLIN WSC	Municipal conservation - basic	$0	12	67	95	123	157	196	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		12	unknown	$0	2011	Yes	196	$0	2060	Self (cash)	Yes	
NORTH COLLIN WSC	Municipal conservation - expanded	$0	0	4	7	9	10	11	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	11	$0	2060	Self (cash)	Yes	
NORTH HUNT WSC	Municipal conservation - basic	$0	1	2	3	3	4	4	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	4	$0	2050	Self (cash)	Yes	
NORTH HUNT WSC	Supplemental wells	$0	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
NORTH RICHLAND HILLS	Conveyance project (1)	$11,803,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	
NORTH RICHLAND HILLS	Municipal conservation - basic	$54,029	103	744	1,131	1,315	1,485	1,652	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		103	unknown	$54,029	2011	Yes	1,652	$54,029	2060	Self (cash)	Yes	
NORTH RICHLAND HILLS	Municipal conservation - expanded	$0	0	71	101	106	109	111	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	111	$0	2060	Self (cash)	Yes	
NORTH RICHLAND HILLS	Supplemental wells	$502,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
NORTH TEXAS MWD	Facility improvements	$2,295,829,800	0	0	0	0	0	0	N	Partially implemented	Other	Currently Operating			Unknown	Unknown	2010	Yes		$2,295,829,800	2060		Yes	Several WMSs have been grouped together as facility improvements. This WMS is for CIP improvements, some of which have been implemented.
NORTH TEXAS MWD	Fannin County project	$38,471,000	0	1,254	2,400	3,862	4,439	5,113	N		Water Treatment Plant	Not Implemented	Too soon	1,254									Yes	
NORTH TEXAS MWD	Lake Texoma - authorized (blend)	$336,356,000	0	0	69,200	68,500	113,000	113,000	N		Pipeline	Not Implemented	Too soon	69,200									Yes	
NORTH TEXAS MWD	Lake Texoma - interim purchase from GTUA	$0	0	21,900	21,900	21,899	0	0	N		No Infrastructure	Not Implemented	Other	21,900									No	
NORTH TEXAS MWD	Lower Bois d'Arc Creek Reservoir	$615,498,000	0	54,796	117,800	114,138	111,361	108,487	N		Impoundment	Permit Application Submitted/Pending		54,796	unknown	Unknown	2020	No				Multiple sources	Yes	
NORTH TEXAS MWD	Main stem pump station (additional East Fork) NTMWD	$0	0	34,900	15,100	0	0	0	N		Other	Not Implemented	Too soon	34,900									Yes	
NORTH TEXAS MWD	Marvin Nichols Reservoir	$830,894,000	0	0	87,400	87,400	174,800	174,800	N		Impoundment	Not Implemented	Other	87,400									Yes	This WMS is no longer a recommended WMS but an alternative WMS in the 2016 Plan.
NORTH TEXAS MWD	Oklahoma water to NTMWD, TRWD, UTRWD	$210,353,500	0	0	0	0	0	50,000	N		No Infrastructure	Not Implemented	Other	50,000									Yes	
NORTH TEXAS MWD	Toledo Bend project (Region I entities responsible for 20 percent of cost)	$929,822,000	0	0	0	0	200,000	200,000	N		Impoundment	Not Implemented	Too soon	200,000									Yes	
NORTHLAKE	Municipal conservation - basic	$0	3	29	57	125	207	276	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	276	$0	2060	Self (cash)	Yes	
NORTHLAKE	Supplemental wells	$500,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
OAK GROVE	Municipal conservation - basic	$0	2	6	9	12	15	19	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	19	$0	2060	Self (cash)	Yes	
OAK LEAF	Municipal conservation - basic	$0	10	20	29	37	47	59	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		10	unknown	$0	2011	Yes	59	$0	2060	Self (cash)	Yes	
OAK POINT	Municipal conservation - basic	$5,000	9	77	140	177	219	267	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$5,000	2011	Yes	267	$5,000	2060	Self (cash)	Yes	
OAK POINT	Municipal conservation - expanded	$0	0	0	1	2	2	2	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2040	Self (cash)	Yes	
OVILLA	Conveyance project (2)	$6,169,000	0	41	71	77	97	98	Y		Pipeline	Not Implemented	Too soon	41									Yes	
OVILLA	Municipal conservation - basic	$0	28	78	130	187	220	260	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		28	unknown	$0	2011	Yes	260	$0	2060	Self (cash)	Yes	
OVILLA	Municipal conservation - expanded	$0	1	5	8	10	12	14	N		No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	14	$0	2060	Self (cash)	Yes	
PALMER	Municipal conservation - basic	$0	4	11	16	18	20	23	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	23	$0	2060	Self (cash)	Yes	
PALMER	Supplemental wells	$1,152,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
PALO PINTO MWD #1	Redistribution of supplies	$0	530	530	530	580	530	530	N		No Infrastructure	See Region G Plan					2010							
PANTEGO	Conveyance project (2)	$1,072,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									No	
PANTEGO	Municipal conservation - basic	$0	4	13	18	21	23	25	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	25	$0	2060	Self (cash)	Yes	
PANTEGO	Municipal conservation - expanded	$5,000	7	7	6	6	6	6	N		No Infrastructure	Currently Operating		7	unknown	$5,000	2011	Yes	6	$5,000	2010	Self (cash)	Yes	
PANTEGO	Purchase from water provider (3)	$1,072,000	0	0	19	38	53	65	Y		No Infrastructure	Not Implemented	Too soon	19									Yes	
PANTEGO	Supplemental wells	$3,510,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
PARADISE	Municipal conservation - basic	$0	2	4	6	7	10	12	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	12	$0	2060	Self (cash)	Yes	
PARKER	Municipal conservation - basic	$0	12	162	292	555	929	1,433	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		12	unknown	$0	2011	Yes	1,433	$0	2060	Self (cash)	Yes	
PARKER	Municipal conservation - expanded	$0	0	23	39	61	91	126	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	126	$0	2060	Self (cash)	Yes	
PAYNE SPRINGS	Municipal conservation - basic	$0	5	9	11	14	16	20	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	20	$0	2060	Self (cash)	Yes	
PAYNE SPRINGS	Municipal conservation - expanded	$5,000	2	3	3	3	3	4	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	4	$5,000	2060	Self (cash)	Yes	
PAYNE SPRINGS	New wells - Carrizo Wilcox Aquifer	$378,000	154	154	154	154	154	154	N		Wells	Not Implemented	Too soon	154		$378,000							Yes	
PAYNE SPRINGS	Supplemental wells	$688,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
PECAN HILL	Municipal conservation - basic	$0	1	5	7	9	11	13	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	13	$0	2060	Self (cash)	Yes	
PELICAN BAY	Municipal conservation - basic	$0	3	10	14	17	20	24	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	24	$0	2060	Self (cash)	Yes	
PELICAN BAY	Purchase from water provider (1)	$1,430,400	0	33	70	76	84	93	Y		No Infrastructure	Not Implemented	Too soon	33									Yes	
PELICAN BAY	Supplemental wells	$3,940,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
PILOT POINT	Municipal conservation - basic	$0	9	58	122	90	103	117	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		9	unknown	$0	2011	Yes	117	$0	2030	Self (cash)	Yes	
PILOT POINT	New wells - Trinity Aquifer	$443,000	167	167	167	167	167	167	N		Wells	All Phases Fully Implemented		429	Unknown	Unknown	2014	No			2014		Yes	Pilot Point has plans for additional wells in the future.
PILOT POINT	Supplemental wells	$4,002,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
PLANO	Municipal conservation - basic	$0	507	2,954	3,892	4,580	5,247	5,916	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		507	unknown	$0	2011	Yes	5,916	$0	2060	Self (cash)	Yes	
PLANO	Municipal conservation - expanded	$0	0	354	473	475	477	479	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	479	$0	2060	Self (cash)	Yes	
PONDER	Municipal conservation - basic	$0	3	47	111	202	262	297	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	297	$0	2060	Self (cash)	Yes	
PONDER	Municipal conservation - expanded	$5,000	2	11	24	38	45	47	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	47	$5,000	2060	Self (cash)	Yes	
PONDER	Supplemental wells	$1,902,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
POST OAK BEND CITY	Municipal conservation - basic	$0	2	6	12	21	35	62	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	62	$0	2060	Self (cash)	Yes	
POTTSBORO	Municipal conservation - basic	$5,000	6	45	77	112	151	181	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	181	$5,000	2060	Self (cash)	Yes	
POTTSBORO	Municipal conservation - expanded	$5,000	6	14	20	25	32	35	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		6	unknown	$5,000	2011	Yes	35	$5,000	2060	Self (cash)	Yes	
POTTSBORO	Supplemental wells	$1,125,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
PRINCETON	Municipal conservation - basic	$0	12	120	215	413	777	1,300	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		12	unknown	$0	2011	Yes	1,300	$0	2060	Self (cash)	Yes	
PROSPER	Municipal conservation - basic	$0	23	240	514	848	1,345	1,609	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		23	unknown	$0	2011	Yes	1,609	$0	2060	Self (cash)	Yes	
PROSPER	Municipal conservation - expanded	$5,000	28	103	187	271	378	411	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		28	unknown	$5,000	2011	Yes	411	$5,000	2060	Self (cash)	Yes	
PROSPER	Supplemental wells	$4,583,166	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
R-C-H WSC	Municipal conservation - basic	$0	8	46	58	67	75	82	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	82	$0	2060	Self (cash)	Yes	
R-C-H WSC	Municipal conservation - expanded	$0	0	4	5	5	4	4	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	4	$0	2030	Self (cash)	Yes	
R-C-H WSC	Purchase from water provider (3)	$2,416,000	0	73	84	112	69	67	Y		Other	Not Implemented	Too soon	73	0	$2,416,000	2020	No					No	R-C-H is not a WUG in the 2016 Plan
RED OAK	Conveyance project (2)	$8,012,000	0	92	151	148	189	190	Y		Pipeline	Not Implemented	Too soon	92									Yes	
RED OAK	Municipal conservation - basic	$0	27	190	288	354	424	503	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		27	unknown	$0	2011	Yes	503	$0	2060	Self (cash)	Yes	
RED OAK	Municipal conservation - expanded	$0	0	16	26	28	29	31	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	31	$0	2060	Self (cash)	Yes	
RED OAK	Supplemental wells	$1,749,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
RENO	Municipal conservation - basic	$0	4	13	17	19	21	22	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	22	$0	2060	Self (cash)	Yes	
RENO	Supplemental wells	$2,316,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
RHOME	Municipal conservation - basic	$0	17	43	85	137	199	270	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		17	unknown	$0	2011	Yes	270	$0	2060	Self (cash)	Yes	
RHOME	Supplemental wells	$1,182,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
RICE	Municipal conservation - basic	$0	2	7	10	20	26	34	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	34	$0	2060	Self (cash)	Yes	
RICE WSC	Municipal conservation - basic	$0	13	48	74	95	119	151	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		13	unknown	$0	2011	Yes	151	$0	2060	Self (cash)	Yes	
RICHARDSON	Municipal conservation - basic	$10,000	197	1,400	1,861	2,150	2,433	2,729	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		197	unknown	$10,000	2011	Yes	2,729	$10,000	2060	Self (cash)	Yes	
RICHARDSON	Municipal conservation - expanded	$10,000	389	611	669	663	658	658	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		389	unknown	$10,000	2011	Yes	658	$10,000	2030	Self (cash)	Yes	
RICHLAND HILLS	Municipal conservation - basic	$0	11	39	56	65	73	79	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		11	unknown	$0	2011	Yes	79	$0	2060	Self (cash)	Yes	
RICHLAND HILLS	Supplemental wells	$3,381,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
RIVER OAKS	Municipal conservation - basic	$0	10	34	45	50	52	55	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		10	unknown	$0	2011	Yes	55	$0	2060	Self (cash)	Yes	
ROANOKE	Municipal conservation - basic	$0	16	111	182	261	396	538	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		16	unknown	$0	2011	Yes	538	$0	2060	Self (cash)	Yes	
ROANOKE	Municipal conservation - expanded	$0	0	13	26	35	45	56	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	56	$0	2060	Self (cash)	Yes	
ROANOKE	Supplemental wells	$2,164,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
ROCKETT SUD	Municipal conservation - basic	$0	64	235	371	466	533	569	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		64	unknown	$0	2011	Yes	569	$0	2060	Self (cash)	Yes	
ROCKETT SUD	Municipal conservation - expanded	$5,000	32	41	51	59	64	64	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		32	unknown	$5,000	2011	Yes	64	$5,000	2050	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
ROCKETT SUD	Water treatment plant - expansion	$38,460,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
ROCKWALL	Municipal conservation - basic	$0	88	739	1,135	1,538	1,794	2,008	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		88	unknown	$0	2011	Yes	2,008	$0	2060	Self (cash)	Yes	
ROCKWALL	Municipal conservation - expanded	$0	0	81	125	146	154	155	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	155	$0	2060	Self (cash)	Yes	
ROWLETT	Municipal conservation - basic	$0	116	664	958	1,189	1,411	1,641	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		116	unknown	$0	2011	Yes	1,641	$0	2060	Self (cash)	Yes	
ROWLETT	Municipal conservation - expanded	$0	0	57	76	83	88	93	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	93	$0	2060	Self (cash)	Yes	
ROYSE CITY	Municipal conservation - basic	$0	32	216	356	534	735	980	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		32	unknown	$0	2011	Yes	980	$0	2060	Self (cash)	Yes	
ROYSE CITY	Municipal conservation - expanded	$0	0	15	25	34	43	52	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	52	$0	2060	Self (cash)	Yes	
RUNAWAY BAY	Municipal conservation - basic	$0	3	16	25	32	41	50	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	50	$0	2060	Self (cash)	Yes	
RUNAWAY BAY	Water treatment plant - expansion	$2,735,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
SABINE RIVER AUTHORITY	Toledo Bend project (Region I entities responsible for 20 percent of cost)	$475,648,000	0	0	0	0	100,000	100,000	N		Impoundment	Not Implemented	Too soon	100,000									Yes	
SACHSE	Municipal conservation - basic	$19,826	49	275	430	477	524	572	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		49	unknown	$19,826	2011	Yes	572	$19,826	2060	Self (cash)	Yes	
SACHSE	Municipal conservation - expanded	$0	0	23	32	34	34	34	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	34	$0	2040	Self (cash)	Yes	
SAGINAW	Municipal conservation - basic	$0	35	191	271	331	388	443	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		35	unknown	$0	2011	Yes	443	$0	2060	Self (cash)	Yes	
SAGINAW	Municipal conservation - expanded	$0	0	14	21	23	25	25	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	25	$0	2050	Self (cash)	Yes	
SAINT PAUL	Municipal conservation - basic	$0	3	24	58	106	140	163	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	163	$0	2060	Self (cash)	Yes	
SANCTUARY	Municipal conservation - basic	$0	2	10	16	20	25	29	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	29	$0	2060	Self (cash)	Yes	
SANGER	Municipal conservation - basic	$0	41	122	206	274	339	386	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		41	unknown	$0	2011	Yes	386	$0	2060	Self (cash)	Yes	
SANGER	Municipal conservation - expanded	$0	0	1	2	2	3	3	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	3	$0	2050	Self (cash)	Yes	
SANGER	Supplemental wells	$3,360,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SANSOM PARK VILLAGE	Municipal conservation - basic	$0	6	22	30	33	35	38	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	38	$0	2060	Self (cash)	Yes	
SANSOM PARK VILLAGE	Supplemental wells	$3,456,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SARDIS-LONE ELM WSC	Municipal conservation - basic	$0	77	173	265	298	330	363	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		77	unknown	$0	2011	Yes	363	$0	2060	Self (cash)	Yes	
SARDIS-LONE ELM WSC	Municipal conservation - expanded	$5,000	23	39	48	48	48	48	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		23	unknown	$5,000	2011	Yes	48	$5,000	2030	Self (cash)	Yes	
SARDIS-LONE ELM WSC	Overdraft Trinity Aquifer - existing wells	$0	1,258	0	0	0	0	0	N		No Infrastructure	Not Implemented	Permit constraints										No	
SARDIS-LONE ELM WSC	Purchase from water provider (1)	$9,467,000	0	1,943	2,289	1,951	1,694	1,477	Y		Pipeline	All Phases Fully Implemented		1,508	Unknown	Unknown	2014	No					No	
SARDIS-LONE ELM WSC	Supplemental wells	$7,278,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SAVOY	Municipal conservation - basic	$0	1	4	5	6	6	7	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		1	unknown	$0	2011	Yes	7	$0	2060	Self (cash)	Yes	
SAVOY	Supplemental wells	$1,368,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SCURRY	Municipal conservation - basic	$0	2	4	6	8	9	11	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	11	$0	2060	Self (cash)	Yes	
SEAGOVILLE	Municipal conservation - basic	$0	62	75	114	146	176	203	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		62	unknown	$0	2011	Yes	203	$0	2060	Self (cash)	Yes	
SEVEN POINTS	Municipal conservation - basic	$0	2	8	12	15	18	23	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	23	$0	2060	Self (cash)	Yes	
SHADY SHORES	Municipal conservation - basic	$0	5	28	27	29	31	33	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	33	$0	2060	Self (cash)	Yes	
SHERMAN	Grayson County project	$146,071,000	0	5,600	8,400	8,400	14,000	19,600	Y		Water Treatment Plant	Acquisition and Design Phase		5,600	Unknown	Unknown	2020	Yes	19,600	$146,071,000	2060	Unknown	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
SHERMAN	Municipal conservation - basic	$33,049	67	217	333	880	1,411	1,850	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		67	unknown	$33,049	2011	Yes	1,850	$33,049	2060	Self (cash)	Yes	
SHERMAN	Municipal conservation - expanded	$0	0	0	0	78	102	119	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	119	$0	2060	Self (cash)	Yes	
SHERMAN	Supplemental wells	$33,882,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SOUTH GRAYSON WSC	Municipal conservation - basic	$0	6	22	31	39	48	60	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	60	$0	2060	Self (cash)	Yes	
SOUTH GRAYSON WSC	Supplemental wells	$14,471,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SOUTHLAKE	Conveyance project (2)	$9,427,000	0	371	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	371									Yes	
SOUTHLAKE	Municipal conservation - basic	$0	253	434	557	680	822	964	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		253	unknown	$0	2011	Yes	964	$0	2060	Self (cash)	Yes	
SOUTHLAKE	Municipal conservation - expanded	$0	0	2	2	2	2	2	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	2	$0	2020	Self (cash)	Yes	
SOUTHMAYD	Municipal conservation - basic	$0	2	8	13	21	33	43	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	43	$0	2060	Self (cash)	Yes	
SOUTHMAYD	New wells - Woodbine Aquifer	$366,000	0	60	60	60	60	60	N		Wells	Currently Operating		31	Unknown	Unknown	2014	No				Unknown	Yes	WUG has plans for additional wells in the future.
SOUTHMAYD	Supplemental wells	$1,519,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SOUTHWEST FANNIN COUNTY SUD	Municipal conservation - basic	$0	15	44	62	73	83	93	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		15	unknown	$0	2011	Yes	93	$0	2060	Self (cash)	Yes	
SOUTHWEST FANNIN COUNTY SUD	Supplemental wells	$9,451,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SPRINGTOWN	Conveyance project (3)	$2,072,400	0	0	53	137	236	351	Y		Pipeline	Not Implemented	Other	53									No	Pipeline to Walnut Creek SUD is no longer a WMS.
SPRINGTOWN	Municipal conservation - basic	$19,443	20	48	71	94	117	144	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		20	unknown	$19,443	2011	Yes	144	$19,443	2060	Self (cash)	Yes	
SPRINGTOWN	Municipal conservation - expanded	$5,000	3	4	4	5	6	7	N		No Infrastructure	Currently Operating		3	unknown	$5,000	2011	Yes	7	$5,000	2060	Self (cash)	Yes	
SPRINGTOWN	New wells - Trinity Aquifer	$408,750	184	184	184	184	184	184	N		Wells	Currently Operating		43	Unknown	Unknown	2014	Yes	165	$408,750	2020	Unknown	Yes	Additional phases included in 2016 Plan.
SPRINGTOWN	Supplemental wells	$1,421,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
SPRINGTOWN	Water treatment plant - expansion	$4,094,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Other	0									No	
SPRINGTOWN	Water treatment plant - new	$8,188,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Other	0									No	
STEAM ELECTRIC POWER, DENTON	New wells - Trinity Aquifer	$717,000	200	200	200	200	200	200	N		Wells	Not Implemented	Other	200									No	
STEAM ELECTRIC POWER, FANNIN	Supplemental wells	$1,186,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
STEAM ELECTRIC POWER, FREESTONE	Supplemental wells	$374,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
STEAM ELECTRIC POWER, HENDERSON	Purchase from water provider (1)	$14,103,000	0	0	3,081	3,341	3,516	3,581	Y		No Infrastructure	Not Implemented	Too soon	3,081									Yes	
STEAM ELECTRIC POWER, PARKER	Conveyance project (3)	$2,099,000	0	0	6	18	31	50	Y		Pipeline	Not Implemented	Too soon	6		$2,099,000	2030						No	
STEAM ELECTRIC POWER, PARKER	Purchase from water provider (2)	$2,099,000	0	2	0	0	0	0	Y		No Infrastructure	Currently Operating		2	NA	NA	2015	No			2020	NA	Yes	2016 Plan WMS is to purchase additional water as needed to meet demands.
STEAM ELECTRIC POWER, TARRANT	Direct reuse	$10,315,000	0	0	1,528	2,360	2,360	2,360	N		Other	Not Implemented	Too soon	1,528									Yes	
STEAM ELECTRIC POWER, WISE	Conveyance project (2)	$4,028,000	0	0	0	0	0	0	Y		No Infrastructure	Currently Operating			NA	NA	2015	No			2030	NA	Yes	2016 Plan WMS is to purchase additional water as needed to meet demands.
SUNNYVALE	Municipal conservation - basic	$0	14	97	157	224	303	348	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	348	$0	2060	Self (cash)	Yes	
SUNNYVALE	Municipal conservation - expanded	$0	0	11	17	21	26	27	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	27	$0	2060	Self (cash)	Yes	
TALTY	Municipal conservation - basic	$0	5	60	104	160	238	346	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	346	$0	2060	Self (cash)	Yes	
TALTY	Municipal conservation - expanded	$0	0	6	9	12	16	20	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	20	$0	2060	Self (cash)	Yes	
TARRANT REGIONAL WD	Marvin Nichols Reservoir	$2,371,116,000	0	0	139,986	139,976	279,953	279,928	N		Other	Not Implemented	Too soon	139,986		$2,371,116,000	2030					Yes	No	Now recommended in combination with Wright Patman and referred to as Sulphur Basin Supply
TARRANT REGIONAL WD	Oklahoma water to NTMWD, TRWD, UTRWD	$448,332,000	0	0	0	0	0	50,000	N		Pipeline	Not Implemented	Too soon	50,000								Yes	Yes	Alternative WMS in the 2016 Plan.
TARRANT REGIONAL WD	Toledo Bend project (Region I entities responsible for 20 percent of cost)	$1,000,766,000	0	0	0	0	100,202	100,176	N		Pipeline	Not Implemented	Too soon	100,202				Yes				Yes	Yes	Alternative WMS in the 2016 Plan.
TARRANT REGIONAL WD	TRWD third pipeline and reuse	$914,424,000	0	105,500	105,500	105,500	105,500	105,500	N		Pipeline	Under Construction		105,500	Unknown	Unknown	2020	No				TWDB & Others	Yes	
TEAGUE	Municipal conservation - basic	$0	6	22	31	38	44	51	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	51	$0	2060	Self (cash)	Yes	
TEAGUE	New wells - Carrizo Wilcox Aquifer	$902,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other	0									No	
TEAGUE	Supplemental wells	$2,324,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TERRELL	Conveyance project (1)	$32,551,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	Additional NTMWD water, including conveyance infrastructure, remains a WMS in the 2016 plan.
TERRELL	Marvin Nichols Reservoir	$0	0	0	14	24	47	72	N		Pipeline	Not Implemented	Too soon	14				Yes					Yes	
TERRELL	Municipal conservation - basic	$21,683	28	537	1,024	1,492	1,875	2,332	N		No Infrastructure	Currently Operating		28	unknown	$21,683	2011	Yes	2,332	$21,683	2060	Self (cash)	Yes	
TERRELL	Municipal conservation - expanded	$0	0	20	61	102	125	143	N		No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	143	$0	2060	Self (cash)	Yes	
THE COLONY	Municipal conservation - basic	$0	77	299	416	462	505	540	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		77	unknown	$0	2011	Yes	540	$0	2060	Self (cash)	Yes	
THE COLONY	Supplemental wells	$4,218,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TIOGA	Municipal conservation - basic	$18,528	2	26	48	60	72	81	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$18,528	2011	Yes	81	$18,528	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
TIOGA	Municipal conservation - expanded	$5,000	1	4	7	8	9	9	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		1	unknown	$5,000	2011	Yes	9	$5,000	2050	Self (cash)	Yes	
TIOGA	Supplemental wells	$1,830,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TOM BEAN	Municipal conservation - basic	$5,000	22	67	81	93	107	117	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		22	unknown	$5,000	2011	Yes	117	$5,000	2060	Self (cash)	Yes	
TOM BEAN	Municipal conservation - expanded	$5,000	2	4	5	5	6	6	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	6	$5,000	2050	Self (cash)	Yes	
TOM BEAN	Supplemental wells	$1,196,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TOOL	Municipal conservation - basic	$0	4	15	21	26	31	38	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	38	$0	2060	Self (cash)	Yes	
TRENTON	Municipal conservation - basic	$0	2	22	69	115	181	255	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	255	$0	2060	Self (cash)	Yes	
TRENTON	Municipal conservation - expanded	$5,000	2	3	5	8	13	17	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	17	$5,000	2060	Self (cash)	Yes	
TRENTON	Supplemental wells	$1,226,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TRINIDAD	Municipal conservation - basic	$0	2	6	8	9	10	11	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	11	$0	2060	Self (cash)	Yes	
TRINITY RIVER AUTHORITY	Conveyance project (1)	$50,912,000	172	1,860	3,221	5,423	8,934	11,015	Y	Ellis County Project	Other	Currently Operating		172	Unknown	Unknown	2010	Yes	11,015	$50,912,000	2060	Unknown	Yes	Partially implemented.
TRINITY RIVER AUTHORITY	Indirect reuse	$0	0	4,368	4,368	4,368	4,368	4,368	N		No Infrastructure	Not Implemented	Too soon	4,368	0	$0	2020	No			2020		Yes	Project is phased in 2016 Plan
TRINITY RIVER AUTHORITY	Purchase from water provider (1)	$59,008,000	402	11,133	10,941	9,855	8,534	7,443	Y		Pipeline	Not Implemented	Too soon	402									Yes	Dallas County Reuse (steam electric power)
TRINITY RIVER AUTHORITY	TRA 10-Mile Creek reuse project	$14,895,000	0	0	6,760	6,760	6,760	6,760	N		Pipeline	Not Implemented	Too soon	6,760									Yes	
TRINITY RIVER AUTHORITY	TRA Denton Creek wastewater treatment plant reuse	$9,506,000	0	0	0	0	0	0	N		Pipeline	Not Implemented	Too soon	0									Yes	
TRINITY RIVER AUTHORITY	TRA Ellis County reuse	$10,384,000	0	0	0	0	0	2,200	N		Pipeline	Not Implemented	Other	2,200									No	
TRINITY RIVER AUTHORITY	TRA Freestone County reuse	$17,266,000	0	0	0	0	6,760	6,760	N		Pipeline	Not Implemented	Too soon	6,760									Yes	
TRINITY RIVER AUTHORITY	TRA Kaufman County reuse	$9,761,000	0	1,000	1,000	1,000	1,000	1,000	N		Pipeline	Not Implemented	Too soon	1,000									Yes	
TRINITY RIVER AUTHORITY	TRA Las Colinas reuse	$14,530,000	0	7,000	7,000	7,000	7,000	7,000	N		Other	Not Implemented	Too soon	7,000	0	$14,530,000	2020	No			2020		Yes	
TRINITY RIVER AUTHORITY	TRA Tarrant County project	$59,008,000	0	0	0	0	0	0	N		Impoundment	Not Implemented	Other	0									Yes	This WMS is no longer a recommended WMS but an alternative WMS in the 2016 Plan.
TROPHY CLUB	Municipal conservation - basic	$0	20	123	174	219	270	325	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		20	unknown	$0	2011	Yes	325	$0	2060	Self (cash)	Yes	
TROPHY CLUB	Municipal conservation - expanded	$0	0	9	17	24	26	28	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	28	$0	2060	Self (cash)	Yes	
TROPHY CLUB	Supplemental wells	$2,179,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
TWO WAY SUD	Municipal conservation - basic	$0	8	33	52	66	80	96	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	96	$0	2060	Self (cash)	Yes	
TWO WAY SUD	Municipal conservation - expanded	$5,000	5	7	8	9	11	12	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		5	unknown	$5,000	2011	Yes	12	$5,000	2060	Self (cash)	Yes	
TWO WAY SUD	Supplemental wells	$7,387,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
UNIVERSITY PARK	Municipal conservation - basic	$0	45	131	184	213	241	270	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		45	unknown	$0	2011	Yes	270	$0	2060	Self (cash)	Yes	
UPPER TRINITY REGIONAL WD	Direct reuse	$11,313,000	0	0	560	1,121	2,240	2,240	N		Other	Not Implemented	Too soon	560									Yes	
UPPER TRINITY REGIONAL WD	Facility improvements - reuse sources	$590,686,000	0	0	0	0	0	0	N		Pipeline	Not Implemented	Too soon	0									Yes	
UPPER TRINITY REGIONAL WD	Lake Ralph Hall	$286,401,000	0	34,050	34,050	34,050	34,050	34,050	N		Impoundment	Permit Application Submitted/Pending		34,050	Unknown	Unknown	2020	No				Unknown	Yes	
UPPER TRINITY REGIONAL WD	Lake Ralph Hall - indirect reuse	$0	0	6,129	12,258	18,387	18,387	18,387	N		No Infrastructure	Not Implemented	Too soon	6,129									Yes	
UPPER TRINITY REGIONAL WD	Marvin Nichols Reservoir	$143,042,000	0	0	0	0	17,500	17,500	N		Pipeline	Not Implemented	Too soon	17,500				Yes					Yes	
UPPER TRINITY REGIONAL WD	Oklahoma water to NTMWD, TRWD, UTRWD	$97,359,000	0	0	0	0	0	15,000	N		Pipeline	Not Implemented	Too soon	15,000									Yes	Alternative WMS in the 2016 Plan.
VALLEY VIEW	Municipal conservation - basic	$0	3	16	31	46	83	110	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	110	$0	2060	Self (cash)	Yes	
VALLEY VIEW	Supplemental wells	$456,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
VAN ALSTYNE	Municipal conservation - basic	$0	5	70	152	218	265	305	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	305	$0	2060	Self (cash)	Yes	
VAN ALSTYNE	Municipal conservation - expanded	$0	3	12	26	35	41	43	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	43	$0	2060	Self (cash)	Yes	
VAN ALSTYNE	Supplemental wells	$4,422,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
VIRGINIA HILL WSC	Municipal conservation - basic	$0	4	14	20	21	22	24	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		4	unknown	$0	2011	Yes	24	$0	2060	Self (cash)	Yes	
VIRGINIA HILL WSC	Supplemental wells	$3,096,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WALNUT CREEK SUD	Conveyance project (1)	$10,093,000	0	0	0	0	0	0	Y		Pipeline	Not Implemented	Too soon	0									Yes	
WALNUT CREEK SUD	Municipal conservation - basic	$0	40	160	308	407	457	500	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		40	unknown	$0	2011	Yes	500	$0	2060	Self (cash)	Yes	
WALNUT CREEK SUD	Municipal conservation - expanded	$5,000	19	27	42	52	54	57	N		No Infrastructure	Currently Operating		19	unknown	$5,000	2011	Yes	57	$5,000	2060	Self (cash)	Yes	
WALNUT CREEK SUD	Water treatment plant - expansion	$50,890,000	0	0	0	0	0	0	Y		Water Treatment Plant	Currently Operating		1,121	Unknown	Unknown	2014	No				Unknown	Yes	2016 Plan has WMSs for additional WTP expansions.
WALNUT CREEK SUD	Water treatment plant - new	$11,576,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
WATAUGA	Conveyance project (2)	$11,803,000	0	1,046	1,028	929	851	837	Y		No Infrastructure	Not Implemented	Too soon	1,046		$11,803,000							Yes	
WATAUGA	Conveyance project (3)	$0	0	0	605	933	1,197	1,124	Y		Pipeline	Not Implemented	Too soon	605									Yes	
WATAUGA	Municipal conservation - basic	$0	36	122	165	178	189	200	N		No Infrastructure	Currently Operating		36	unknown	$0	2011	Yes	200	$0	2060	Self (cash)	Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
WAXAHACHIE	Municipal conservation - basic	$0	56	433	769	1,089	1,528	2,134	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		56	unknown	$0	2011	Yes	2,134	$0	2060	Self (cash)	Yes	
WAXAHACHIE	Municipal conservation - expanded	$0	0	19	46	73	91	116	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	116	$0	2060	Self (cash)	Yes	
WAXAHACHIE	Purchase from water provider (1)	$0	0	0	0	0	14	17	Y		No Infrastructure	Currently Operating		14	NA	$0	2010	No					Yes	2016 Plan WMS is to purchase additional water as needed to meet demands.
WAXAHACHIE	Water treatment plant - expansion	$38,452,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
WEATHERFORD	Facility improvements	$545,000	0	0	0	0	0	0	N		Pipeline	Not Implemented	Too soon	0									Yes	Expand Lake Benbrook pump station WMS.
WEATHERFORD	Municipal conservation - basic	$5,000	173	370	527	670	833	1,027	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		173	unknown	$5,000	2011	Yes	1,027	$5,000	2060	Self (cash)	Yes	
WEATHERFORD	Municipal conservation - expanded	$5,000	50	75	100	123	138	154	N		No Infrastructure	Currently Operating		50	unknown	$5,000	2011	Yes	154	$5,000	2060	Self (cash)	Yes	
WEATHERFORD	Water treatment plant - expansion	$36,422,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
WEST CEDAR CREEK MUD	Municipal conservation - basic	$0	25	113	179	232	298	383	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		25	unknown	$0	2011	Yes	383	$0	2060	Self (cash)	Yes	
WEST CEDAR CREEK MUD	Municipal conservation - expanded	$5,000	14	20	25	31	38	46	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		14	unknown	$5,000	2011	Yes	46	$5,000	2060	Self (cash)	Yes	
WEST CEDAR CREEK MUD	Water treatment plant - expansion - reuse sources	$28,656,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
WEST WISE RURAL SUD	Municipal conservation - basic	$0	5	18	27	32	38	45	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	45	$0	2060	Self (cash)	Yes	
WEST WISE RURAL SUD	Water treatment plant - expansion	$4,094,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	
WEST WISE RURAL SUD	Water treatment plant - new	$4,871,000	0	0	0	0	0	0	N		Water Treatment Plant	Not Implemented	Other	0									No	
WESTON	Municipal conservation - basic	$0	5	39	92	299	584	1,108	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		5	unknown	$0	2011	Yes	1,108	$0	2060	Self (cash)	Yes	
WESTON	Municipal conservation - expanded	$5,000	3	11	25	72	128	219	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		3	unknown	$5,000	2011	Yes	219	$5,000	2060	Self (cash)	Yes	
WESTON	Purchase from water provider (3)	$27,722,000	0	255	494	1,596	1,475	2,224	Y		No Infrastructure	Not Implemented	Too soon	255									Yes	
WESTON	Supplemental wells	$1,168,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WESTOVER HILLS	Municipal conservation - basic	$18,461	2	12	17	19	21	24	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		2	unknown	$18,461	2011	Yes	24	$18,461	2060	Self (cash)	Yes	
WESTWORTH VILLAGE	Municipal conservation - basic	$0	6	17	23	27	30	35	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		6	unknown	$0	2011	Yes	35	$0	2060	Self (cash)	Yes	
WHITE SETTLEMENT	Municipal conservation - basic	$27,254	349	70	99	115	134	154	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		349	unknown	$27,254	2011	Yes	154	$27,254	2010	Self (cash)	Yes	
WHITE SETTLEMENT	Municipal conservation - expanded	$0	2	1	0	0	0	0	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$0	2011	Yes	0	$0	2010	Self (cash)	Yes	
WHITE SETTLEMENT	Supplemental wells	$3,969,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WHITESBORO	Municipal conservation - basic	$5,000	7	42	61	78	101	147	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		7	unknown	$5,000	2011	Yes	147	$5,000	2060	Self (cash)	Yes	
WHITESBORO	Municipal conservation - expanded	$0	0	3	5	6	7	10	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		0	unknown	$0	2011	Yes	10	$0	2060	Self (cash)	Yes	
WHITESBORO	Supplemental wells	$2,708,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WHITEWRIGHT	Municipal conservation - basic	$0	3	30	52	71	95	122	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		3	unknown	$0	2011	Yes	122	$0	2060	Self (cash)	Yes	
WHITEWRIGHT	Municipal conservation - expanded	$5,000	2	4	5	7	8	9	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	9	$5,000	2060	Self (cash)	Yes	
WHITEWRIGHT	Supplemental wells	$6,181,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WILLOW PARK	Municipal conservation - basic	$0	8	51	57	74	88	100	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	100	$0	2060	Self (cash)	Yes	
WILLOW PARK	Municipal conservation - expanded	$5,000	4	8	8	9	10	11	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		4	unknown	$5,000	2011	Yes	11	$5,000	2060	Self (cash)	Yes	
WILLOW PARK	Purchase from water provider (1)	$3,558,100	0	118	422	540	576	566	Y		No Infrastructure	Not Implemented	Too soon	118									Yes	Purchase supply from Weatherford remains a recommended WMS in the 2016 Plan. Fort Worth supply is now an alternative WMS in the 2016 Plan.
WILLOW PARK	Supplemental wells	$5,633,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WILMER	Municipal conservation - basic	$0	5	19	29	45	90	147	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating	Other	5	unknown	$0	2011	Yes	147	$0	2060	Self (cash)	Yes	
WILMER	Municipal conservation - expanded	$5,000	2	3	3	4	8	13	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		2	unknown	$5,000	2011	Yes	13	$5,000	2060	Self (cash)	Yes	
WILMER	Supplemental wells	$2,977,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WISE COUNTY WSD	Water treatment plant - expansion	$14,540,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Too soon	0									Yes	

Sponsor	Recommended Water Management Strategy	CapitalCost	2010	2020	2030	2040	2050	2060	Y denotes strategies with supply volumes included in other strategies	Project Description	Infrastructure Type*	At what level of Implementation is the project?*	If not implemented, why?*	Initial Volume of Water Provided (acft/yr)	Funds Expended to Date ($)	Project Cost ($) (should include development and construction costs)	Year the Project is Online?*	Is this a phased project?*	(Phased) Ultimate Volume (acft/yr)	(Phased) Ultimate Project Cost ($)	Year project reaches maximum capacity?*	What is the project funding source(s)?*	Included in the 2016 Plan?*	Comments
WOODBINE WSC	Municipal conservation - basic	$0	8	28	39	46	52	59	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		8	unknown	$0	2011	Yes	59	$0	2060	Self (cash)	Yes	
WOODBINE WSC	Supplemental wells	$3,852,000	0	0	0	0	0	0	N		Wells	Not Implemented	Other										No	
WORTHAM	Municipal conservation - basic	$0	14	38	49	58	68	78	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		14	unknown	$0	2011	Yes	78	$0	2060	Self (cash)	Yes	
WORTHAM	Purchase from water provider (1)	$6,488,000	0	300	300	300	300	300	Y		No Infrastructure	Not Implemented	Other	300									No	WMS is purchased water from Corsicana. No longer a WMS.
WORTHAM	Water treatment plant - expansion	$4,662,000	0	0	0	0	0	0	Y		Water Treatment Plant	Not Implemented	Other	0									No	
WYLIE	Municipal conservation - basic	$5,000	90	565	1,074	1,393	1,496	1,602	N	Includes public and school education; the impact of increasing water prices; water system audit, leak detection and repair, and pressure control; and implementation of federal residential clothes washer standards.	No Infrastructure	Currently Operating		90	unknown	$5,000	2011	Yes	1,602	$5,000	2060	Self (cash)	Yes	
WYLIE	Municipal conservation - expanded	$5,001	57	107	138	164	166	166	N	Includes water conservation pricing structure; water waste prohibition; coin-op clothes washer rebate; industrial, commercial, and institutional (ICI) general rebate; and ICI water audit and site-specific conservation program.	No Infrastructure	Currently Operating		57	unknown	$5,001	2011	Yes	166	$5,001	2050	Self (cash)	Yes	

Appendix T

APPENDIX T
REGION C NEWSLETTERS

APPENDIX T
REGION C NEWSLETTERS

The Region C Water Planning Group published newsletters throughout this fourth round of the Regional Water Planning process to keep the public informed on the progress of the planning process, as well as to educate the public about water management strategies under consideration, water conservation issues and other water-related topics. The newsletters were sent to:

- Water User Groups
- Wholesale Water Providers
- Other water right holders
- County judges
- Mayors and officials of cities in the region
- Other water planning regions
- Texas Water Development Board staff
- Approximately 200 media representing more than 175 media outlets in North Central Texas
- Any person who asked to be on the mailing list.

A total of 8 newsletters have been produced and distributed on behalf of the Region C Water Planning Group during the fourth round of water planning. The dates are below and the newsletters are contained in this appendix.

- Fall 2012
- Winter 2012
- August 2013
- December 2013
- November 2014
- March 2015
- June 2015
- December 2015

The newsletters are distributed electronically to about 600 emails users, and about 1,625 paper copies of each newsletter are distributed by mail. The newsletters are also posted on the Region C web site.

Collin
Cooke
Dallas
Denton
Ellis
Fannin
eestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

Fall 2012 Newsletter

Next Meeting:
Tentatively scheduled for Monday, March 25 at 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:
Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

lease note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — and who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

For more information about the Region C Water Planning Group, contact:
James (Jim) Parks, RCWPG Chair
North Texas Municipal Water District
P.O. Box 2408, Wylie, TX 75098
Phone: (972) 442-5405
E-mail: jparks@ntmwd.com

e added to the RCWPG newsletter mailing list, your name and mailing address to Colby Walton via e-mail to colby@cookseypr.com, or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Rachel Ickert with Freese & Nichols at rai@freese.com.

Round Four of Region C Water Planning Advances

Since late 2011, the Region C Water Planning Group (RCWPG) has been working on the latest five-year round of regional water planning, which will result in the production of a 2016 Region C Water Plan. This plan, the fourth developed since the creation of Texas' regional water planning process in 1997, will identify water management strategies to meet the growing water needs of North Central Texas from now until 2070 and will ultimately become part of the 2017 State Water Plan.

Several critical regional water planning tasks have recently been completed, or are on the near-term horizon, to help pave the way for development of the 2016 plan. These activities include:

Securing Additional Funding for Round Four of Planning

The RCWPG, along with other regional water planning groups statewide, recently submitted an application for supplemental funding to continue the fourth round of regional water planning.

Subsequently, Region C has been awarded \$1.34 million from the TWDB, in addition to the nearly \$600,000 previously awarded, to complete the funding needed to develop the 2016 Region C Water Plan.

Among a host of other important tasks, the additionally funded work includes Task 4D, which involves evaluating and recommending water management strategies for any entities with future water needs, developing a water availability model incorporating return flows and reuse projects, and assessing the effectiveness of drought management plans and reuse strategies during the drought years of 2006 and 2011. Work on Task 5, which involves development of water conservation recommendations, will also proceed now due to the additional funding.

These are important steps in evaluating potentially feasible water management strategies and developing the optimal mix of recommended strategies for the Region C Water Plan.

Proposing Adjustments to Non-Municipal Water Demand Projections

In April 2012, the RCWPG completed its review of the TWDB's draft non-municipal water demand projections for the 16-county Region C area and requested a few key adjustments to the draft projections.

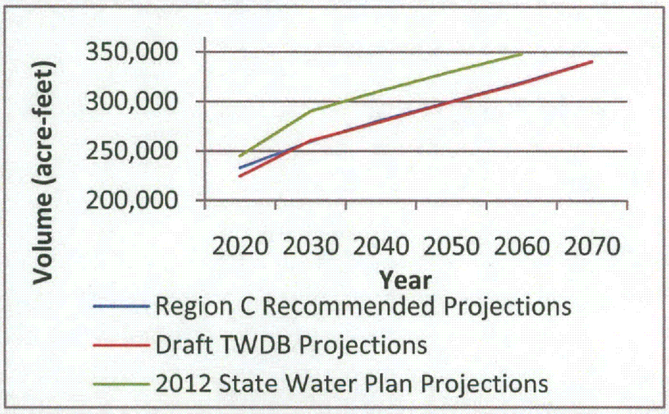
While municipal water demand—which encompasses residential, commercial (such as retail stores and office buildings) and institutional (such as schools and prisons) uses—constitutes the vast majority of water use in Region C, non-municipal water demands are also an

Continued inside

important component of the region's water use. Non-municipal water demands include (agricultural) irrigation, livestock, manufacturing, mining, and steam-electric power generation uses.

Overall, the TWDB has projected slightly lower non-municipal water demand in Region C, compared to the projections in the 2012 State Water Plan. The RCWPG generally agreed with the TWDB's non-municipal demand projections, while suggesting adjustments to specific types of uses, most notably in the areas of irrigation (suggested increasing this figure, based on peak historical demand) and mining (suggested lowering this figure, based on historical demands).

Region C Non-Municipal Water Demand Projections



Proposing Adjustments to Municipal Water Demand and Population Projections

Early in 2013, the RCWPG expects to receive draft population projections and municipal water demand projections from the TWDB. These draft projections, which will be posted to the Region C website, www.regioncwater.org, will be carefully evaluated by the RCWPG so the group can recommend any needed adjustments by the summer of 2013.

As part of this evaluation, the RCWPG will soon be conducting a detailed survey of all water user groups (WUGs) across North Central Texas and conferring with wholesale water providers (WWPs). The survey and meetings are expected to provide relevant feedback on the draft projections, as well as on current water supply policies in the region.

Evaluating Water Source Availability and Existing Supplies

Since late 2011, the RCWPG has been analyzing the availability of currently existing water sources and supplies, including surface water (reservoirs and streams), groundwater, water reuse and other supply sources, in order to determine how much water can be relied upon for future supplies. As part of this process, the Planning Group is conducting a reuse survey of many municipalities to determine the status of their direct or indirect water reuse projects, to understand how water from these projects is being used and to assess how much reuse is expected for the next 50+ years.

At the Planning Group's Dec. 2012 meeting, the group members heard and discussed a presentation by the RCWPG consultants on the results of this analysis. The analysis will be important as the RCWPG considers which water management strategies can best address the future water supply-demand gap for our region.

Identifying Potentially Feasible Water Management Strategies

This important step in the planning process will evaluate which water management strategies are under consideration by water providers in the region as a source of future water supplies. Much of this information will be gathered during the upcoming WWP meetings and via the survey of WUGs in the region.

Noting Schedule Changes

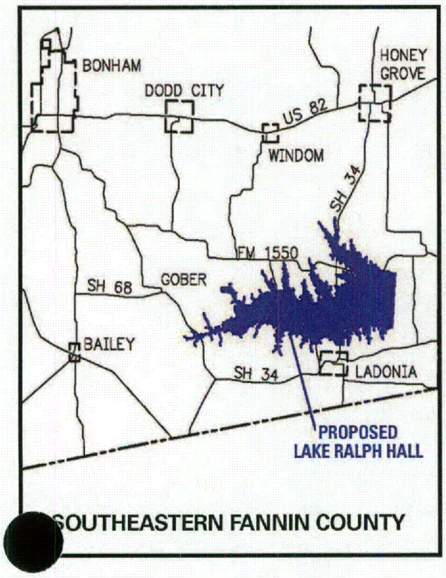
Additionally, since the last newsletter, several adjustments have been made by state officials to the regional water planning schedule:

> *May 2014*: The technical memorandum being prepared by the RCWPG to summarize the group's work and key findings to date is due to the TWDB.
>
> *May 2015*: The draft plan for Region C (the Initially Prepared Plan, or IPP) is scheduled to be complete and ready for public review and input. A public hearing will be scheduled around this time, to afford the public an opportunity to learn more about the draft plan and provide feedback on its water management strategy recommendations.
>
> *Nov. 2015*: The RCWPG will adopt its final 2016 Region C Water Plan and submit it to the TWDB.

With various critical regional water planning tasks underway, the RCWPG encourages members of the public with an interest in critical water issues to monitor the group's work, to attend the group's public meetings, and to participate in the IPP public hearing in the spring of 2015. For more information about upcoming meeting dates and to see RCWPG documents, please visit www.regioncwater.org.

Lake Ralph Hall Nears Potential Approval

The proposed Lake Ralph Hall in southeast Fannin County, one of the major recommended water management strategies in the 2011 Region C Water Plan, is nearing a critical stage in its potential development. The reservoir, proposed by the Upper Trinity Regional Water District (UTRWD), is expected to supply 34,050 acre-feet of water per year to the District's customers, chiefly in Denton County, as well as to the City of Ladonia and portions of Fannin County.



The District also plans to apply for the right to reuse return flows from the project, providing an additional 18,387 acre-feet of water annually to the region. Together, the lake and the reuse project are expected to cost approximately $275 million.

The UTRWD's water right permit application for this reservoir has been before the State Office of Administrative Hearings (SOAH) since last year, when it was referred to the SOAH by the Texas Commission on Environmental Quality (TCEQ) as a contested case hearing due to opposition from the Town of Flower Mound and two environmental groups. After a public hearing beginning Jan. 15, 2013 before an administrative law judge, the UTRWD could then have the opportunity to seek approval of its 2003 water use permit application from the TCEQ. UTRWD will also need approval for a Section 404 permit from the U.S. Army Corps of Engineers.

If approval is granted, the District could move forward with development of the lake. There has not been a major reservoir developed in North Texas in more than 30 years.

The proposed lake would have a storage volume of about 160,235 acre-feet and occupy 11,800 acres of land. To date, the District has acquired about one-third of the land needed for the lake.

The project is long overdue, according to the UTRWD and local residents. Beyond providing water to growing communities that need new supplies, the lake would remedy a severe erosion problem that arose approximately 80 years ago, when the North Sulphur River was channelized to prevent flooding of nearby farms' crops.

The channelized North Sulphur River

With decades of heavy rains eroding land around the channel, the river today has become an environmental issue. The original 16-foot-wide, 10-foot-deep channel has eroded in places to form an enormous, 300-foot-wide, 60-foot-deep channel, destroying hundreds of acres of adjoining land. District officials hope to turn this problem into a significant water supply solution, as well as an environmentally healthy lake and wetlands area.

The UTRWD hopes to have the new lake filled and ready by 2025—approximately five years before demand for water is expected to exceed available water supplies in the District's service area.

Stemming the Tide of Zebra Mussels

Local biologists, state legislators, city and county officials, and North Texas water suppliers are keeping a close eye on a pesky menace that doesn't seem to be going away any time soon—zebra mussels.

Zebra Mussels

Zebra mussels damage structures, threaten wildlife eco-systems and colonize on pipes, severely constricting water flow for power plants and other municipal facilities that rely on lake water.

Since 2009, when the first zebra mussel presence in Texas (in Lake Texoma) was confirmed, they have been found in both the Red River and Washita River arms of Lake Texoma, in Sister Grove Creek and in Ray Roberts Lake. They are now expected to spread south to other North Texas lakes that are vital for current water supplies.

North Texas water providers already have an enormous task ahead of them to supply 6.6 million residents of the region with a water supply that meets both the needs of the current population and the projected future population, which is expected to nearly double over the next 50 years. The area heavily depends on water captured in reservoirs, including those in the Trinity River Basin, for the primary source of drinking water.

The presence of an established zebra mussel population in area reservoirs would likely result in increased operational and maintenance costs for water resource managers and could lead to further expansion of zebra mussels in other water supplies.

After zebra mussels were discovered locally, the North Texas Municipal Water District (NTMWD), which serves more than 60 cities, towns, special utility districts and water supply corporations in North Texas, voluntarily stopped pumping water from Lake Texoma. This action cut the District's available water supply by 25 percent, affecting 1.6 million people who rely on this water.

In September, the House voted to pass H.R. 6007, the North Texas Zebra Mussel Barrier Act of 2012, sponsored by Rep. Ralph Hall. It would allow the NTMWD to pump water from Lake Texoma straight into the Wylie Water Treatment Plant, where it can be cleaned of zebra mussels, without being in violation of the Lacey Act—a bill that makes it illegal to transport dangerous species between states.

The NTMWD is now pushing ahead with development of a 46-mile, $270-million pipeline to deliver water from Lake Texoma directly to its water treatment plant so it can avoid putting zebra mussel-infested water into a tributary of Lake Lavon. Pipeline installation is now underway, and the District expects to have it completed by the fall of 2013.

Currently, zebra mussels have not been found in Tarrant County. Small levels of DNA during testing last fall did show up in Eagle Mountain Lake. However, additional testing this summer found no traces.

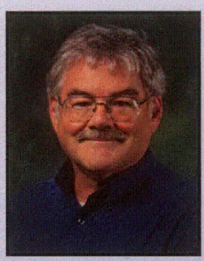
The Tarrant Regional Water District, which supplies water to 1.7 million people in North Texas, has set aside almost $700,000 to control mussels in the $2.3-billion pipeline it is currently building with Dallas Water Utilities to bring water from Richland-Chambers Lake and Cedar Creek Lake. Phase one of the pipeline is scheduled to be complete in 2020.

Despite the alarming rate at which zebra mussels are spreading, officials with the Texas Parks & Wildlife Department's (TPWD) Inland Fisheries Division are confident that proper education about the issue and regular maintenance of boats, water craft and transports, along with the actions of major water providers, will help slow down the spread of the menacing mussels.

According to the TPWD, the public can help stem the spread of zebra mussels by doing the following: cleaning any mussels, vegetation or foreign objects from the bottom of boats; draining all water from boats before leaving the lake, including from the motor, live wells and bait buckets, and other compartments that hold water; and after drying all boats and trailers, not launching them into another body of water for at least a week. For more information, visit www.TexasInvasives.org.

Region C Water Planning Group Elects New Members

At the RCWPG's April and December 2012 meetings, the following individuals were elected as new Planning Group members and will serve five-year terms:



Dr. Thomas La Point (representing the public)

Dr. La Point is a professor in the Department of Biology at the University of North Texas. His research and teaching interests are in contaminant effects on freshwater aquatic communities. He occupies the seat previously held by Mary Vogelson, who did not seek re-election.

James Hotopp (representing municipalities)

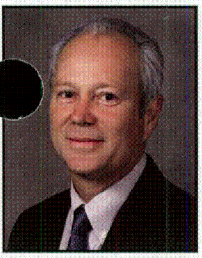
Hotopp is Director of Utilities—Water/Wastewater/Engineering with the City of Weatherford. He joined the City in 2007 after working with a private engineering firm in Dallas/Fort Worth. He occupies the seat previously held by Dr. Paul Phillips, who opted not to seek re-election.

Steve Mundt (representing small business)

Mundt heads The Land Group, Inc., a full services land brokerage company with primary operations in North Texas; and Investment Land Capital, Inc. which acquires and manages land for appreciation for its partners. With more than 30 years of experience in commercial

Continued on reverse

real estate brokerage, he has handled virtually every type of land and commercial property. He occupies the seat previously held by Bill Lewis, who chose not to seek re-election.



Kevin Ward (representing river authorities)

Ward is General Manager of the Trinity River Authority (TRA), a conservation and reclamation district providing water and wastewater treatment, along with recreation and reservoir facilities, for municipalities within the nearly 18,000-square-mile Trinity River basin. TRA also maintains a master plan for basin-wide development, and serves as a conduit for tax-exempt financing for municipal projects and as a local sponsor for federal water projects. Prior to joining TRA in 2011, Ward served as Executive Administrator of the Texas Water Development Board. He occupies the seat previously held by Danny Vance, who recently resigned from the RCWPG.

Other members recently re-elected to continue their service on the Planning Group were: Steve Berry (environment); Jerry Chapman (water districts); Frank Crumb (municipalities); Jim McCarter (water utilities); Jim Parks (water districts); Jody Puckett (municipalities); and Dr. Tom Woodward (agriculture).

The RCWPG also recently recognized retiring members Bill Lewis, Dr. Paul Phillips, Danny Vance and Mary Vogelson for their significant efforts to ensure that North Central Texas residents and businesses will have a safe, plentiful water supply for many decades to come.

About the Regional Water Planning Group

Region C is made up of all or part of 16 counties in North Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups selected by the Texas Water Development Board (TWDB) to help develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jim Parks	Chair	Water Districts
Jody Puckett	Vice Chair	Municipalities
Russell Laughlin	Secretary	Industry
David Bailey	Member	GMA 12*
Steve Berry	Member	Environment
Bill Ceverha	Member	Public
Jerry Chapman	Member	Water Districts
S. Frank Crumb	Member	Municipalities
Gary Douglas	Member	GMA 11*
James Hotopp	Member	Municipalities
Thomas La Point	Member	Public
Harold Latham	Member	GMA 8*
G. K. Maenius	Member	Counties
Howard Martin	Member	Municipalities
Jim McCarter	Member	Water Utilities
Steve Mundt	Member	Small Business
Bob Scott	Member	Environment
Gary Spicer	Member	Electric Generating Utilities
Connie Standridge	Member	Water Utilities
Jack Stevens	Member	Water Districts
Kevin Ward	Member	River Authority
Dr. Tom Woodward	Member	Agriculture
Curtis Campbell	Non-Voting Member	Region B
Alva Cox	Non-Voting Member	Brazos G RWPG
Mike Harbordt	Non-Voting Member	Region I
Angela Kennedy	Non-Voting Member	Texas Water Development Board
Gregg Magee	Non-Voting Member	Texas Dept. of Agriculture
Sharon Nabors	Non-Voting Member	Region D
Walt Sears	Non-Voting Member	Region D
Adam Whisenant	Non-Voting Member	Texas Parks & Wildlife Dept.

**GMA = Groundwater Management Area*

REGION C
Water Planning
for North Texas
5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Collin
Cooke
Dallas
Denton
Ellis
Fannin
Freestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

Winter 2012 Newsletter

Next Meeting:
Monday, February 13, 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:
Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

*Please note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — and who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

For more information about the Region C Water Planning Group, contact:
James (Jim) Parks, RCWPG Chair
North Texas Municipal Water District
P.O. Box 2408, Wylie, TX 75098
Phone: (972) 442-5405
E-mail: jparks@ntmwd.com

To be added to the RCWPG newsletter mailing list, add your name and mailing address to Colby Walton via e-mail to colby@cookseypr.com, or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Rachel Ickert with Freese & Nichols at rai@freese.com.

Round Four of Region C Water Planning Begins

It's that time again — time for regions across Texas to revise their Regional Water Plans to reflect changing conditions and evolving future water needs. And the Region C Water Planning Group (RCWPG) in North Central Texas is no exception. In fact, Region C's particularly strong growth presents unique needs and challenges that need to be addressed by the planning process.

It's no secret that the entire state faces enormous challenges related to its continued growth, geographic diversity and susceptibility to drought — so much so that the Texas Legislature enacted Senate Bill 1 (SB1) in 1997 to create a statewide, ground-up planning process to better reflect regional conditions and future water needs. SB1 created 16 Regional Water Planning Groups statewide and charged them with preparing and revising Regional Water Plans that are ultimately developed into the State Water Plan by the Texas Water Development Board (TWDB). These regional plans and the state plan are updated every five years.

The first Region C Water Plan for North Central Texas was developed in 2001, becoming part of the 2002 State Water Plan, which laid out a 50-year roadmap for water planning statewide. Two subsequent, five-year planning efforts resulted in the creation of the 2006 and 2011 Region C Water Plans (and 2007 and 2012 State Water Plans).

Today, the RCWPG is beginning work toward a 2016 Region C Water Plan that will reflect the latest population and demand projections, water needs, environmental factors and feasible supply strategies for our region.

The RCWPG covers 16 counties and consists of 22 members representing a variety of interest groups, including water districts, water utilities, municipalities, industries, agriculture, environmental, small busi-

Region C Water Planning Group Members Pose After Adoption of the 2011 Region C Water Plan nesses, counties, river authorities, electric generating utilities, Groundwater Management Areas (see separate article in this newsletter) and the public.

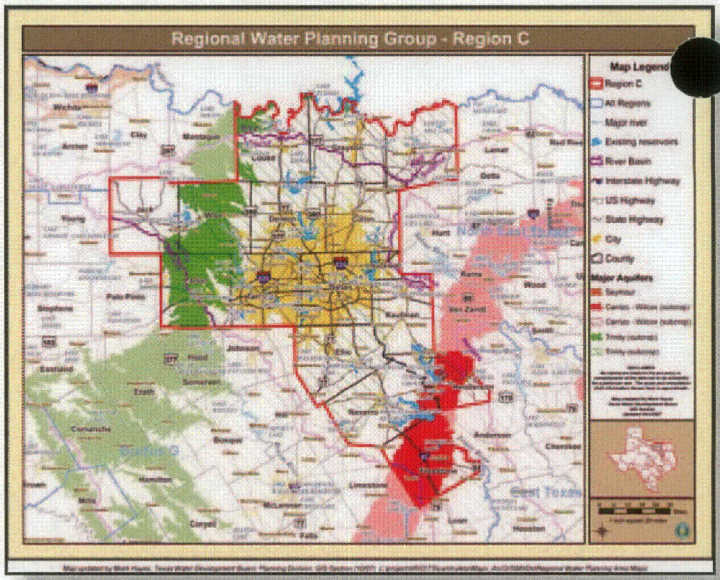
For the 2011-2016 planning period, there are several new guidelines for planning:

- Planning is extended through 2070, versus a 2060 timeframe previously.
- Due to the current drought, it is anticipated that 2011 will be used as the new base dry year for calculations of regional water demand (the year 2000 was the previous dry year standard). Unusually dry years are used for this calculation since water demand tends to be highest in dry years, and since we need to account in our planning for such parched periods, which are a fact of life in Texas.
- Overdrafting of groundwater will no longer be allowed as a short-term strategy.
- Plans must now include a planning safety factor table, reflecting the ratio of planned supplies to projected demand for each Water User Group and each Wholesale Water Provider.
- For each water supply source identified in the plan, the plan must also identify drought response triggers and actions to be taken in time of drought.

During the initial stage of the current planning period, over the next 15 months, the RCWPG will be tackling several specifically identified tasks that are a critical prerequisite to development of a plan. Those tasks include:

- Reviewing and providing input on TWDB-provided population and water demand projections for the region;
- Analyzing water availability and water supplies, including surface water (reservoirs and streams), groundwater, water reuse and other supply sources;
- Getting a water needs analysis from the TWDB, based on the updated projections of existing water supplies and water demands undertaken in the tasks above;
- Based on public input, selecting and implementing a process to identify potentially feasible water management strategies that will address the identified water needs of Water User Groups (WUGs) and Wholesale Water Providers (WWPs) in the region; and
- Beginning the evaluation and recommendation of water management strategies.

At the end of this initial stage of the planning period, in March 2013, the RCWPG will prepare and submit a technical memorandum to the TWDB summarizing its work and findings to date. At this time, the RCWPG expects to receive additional funding from the state in order to complete its development of the 2016 Plan.



Map of the 16 Counties of Region C

Public participation is an important part of the Planning Group's work, even during these initial stages of the 2016 Plan's development. For example, as one element of engaging key stakeholders, the RCWPG will be surveying WUGs and WWPs across Region C to get their input on various water planning issues.

Additionally, the RCWPG strongly encourages citizens, businesses and other interested parties to participate in water planning through attendance at public meetings of the RCWPG (at which public comments are accepted), monitoring of the Region C website at www.regioncwater.org and review of media articles about local water issues.

A final opportunity for public participation will occur when the draft plan for Region C is made available for review and input at a public hearing in the spring of 2015. Shortly after this, the Planning Group will adopt a final 2016 Region C Water Plan and submit it to the TWDB for review and incorporation into the 2017 State Water Plan.

Drought, Other Challenges Affect Regional Water Supply

It's been hot. It's been dry. On top of that, the North Central Texas water supply faces other significant challenges. Consequently, the work of the Region C Water Planning Group is more important and relevant than ever.

Many experts who study weather patterns and droughts predict the current drought could eventually rival the terrible drought of the 1950's. Already, the ongoing drought includes the driest 12-month period in the state's history, and the situation could dramatically worsen if dry conditions extend for years, as the 1950's drought did.

Today's drought is wreaking havoc on the state's water supply. Although North Central Texas hasn't been hit as hard as other areas of the state, water supplies are diminishing and major water providers in the region are responding accordingly, implementing drought contingency measures reflective of their reservoir conditions.

The North Texas Municipal Water District (NTMWD), which serves many of Dallas' northern suburbs, recently enacted Stage 3 of its drought contingency plan, in response to continuing drought and the unavailability of Lake Texoma water due to the presence of invasive zebra mussels (see below). As of mid-December, the Lake Lavon water supply was at 51 percent of capacity, and NTMWD's Lake Chapman water supply was at 32 percent of capacity. Stage 3 restrictions applicable to NTMWD customers include limiting landscaping watering to only once every two weeks, prohibiting watering from 10 a.m. to 6 p.m. and enacting other mandatory restrictions on non-essential watering. The goal of Stage 3 is a 10 percent reduction in water use.

In late August, the Tarrant Regional Water District (TRWD), which serves much of the western half of the Metroplex, enacted Stage 1 of its drought contingency plan in response to its reservoir supplies dropping to 75 percent of capacity. TRWD's customers, including the cities of Fort Worth, Arlington, Mansfield and the Trinity River Authority, have implemented mandatory two-day-a-week watering restrictions, prohibitions on outdoor watering from 10 a.m. to 6 p.m. and other conservation measures.

Dallas Water Utilities (DWU), which provides water to the City of Dallas and other entities in the eastern part of the Metroplex, put Stage 1 water use restrictions in place on December 12, mandating that residents conduct landscape watering no more than twice weekly. Although DWU's reservoirs are collectively less than 25 percent depleted, DWU took this action to extend its water supplies in order to support region-wide water needs and due to ongoing construction at one of its water treatment plants. DWU is currently in discussions to provide NTMWD and other entities with emergency water if conditions worsen.

Depleted Reservoir

Invasive zebra mussels are another disruptive problem for the Region C water supply. This aquatic species was found in Lake Texoma, which normally provides NTMWD almost a quarter of its water supply, in the spring of 2009. They can attach themselves to the insides of pipelines, restricting the flow of water. Since their discovery at Lake Texoma, the pipeline carrying water from the lake has been shut down so that zebra mussel larvae are not pumped into other area lakes.

Zebra Mussels

To complicate matters further, zebra mussels can attach themselves to boat hulls. So if boats aren't properly cleaned, the species can be transferred to another body of water, potentially threatening its water supply and detrimentally impacting native plants, fish and wildlife. As a result, the NTMWD and other partners are working with Texas Parks and Wildlife to educate recreational boaters about the damage caused by zebra mussels. For more information, visit www.TexasInvasives.org.

If the forces of nature on our water supply aren't enough to raise flags of concern, there are also legal threats to the region's plans for future water supplies.

Recently, a three-judge panel of the 10th Circuit U.S. Court of Appeals rejected a TRWD lawsuit related to ongoing attempts to purchase excess Gulf-bound water from the state of Oklahoma. TRWD subsequently requested a hearing before the full circuit regarding the District's application to secure water from three locations just north of the Red River, but that request was denied. The TRWD has until January 19 to decide whether to appeal to the U.S. Supreme Court. TRWD seeks to secure seven percent of the water bound for the Red River before it flows into the river, mixes with higher saline water and becomes less well-suited for municipal water supply, thus requiring expensive treatment. No water retained in any Oklahoma reservoir would be affected by the requested permits. The 2011 Region C Water Plan includes 140,000 acre-feet per year of water from Oklahoma, so this is an important supply strategy that is currently blocked.

In another recent legal action related to the Region C Water Plan, a state district judge issued a preliminary ruling in November signaling that the Texas Water Development Board will have to resolve a dispute between Region C and Region D over whether to include the potential Marvin Nichols Reservoir in Northeast Texas as a water management strategy for Region C entities. The 2011 Region C Water Plan projected that Region C would eventually get 490,000 acre-feet of water per year from this reservoir.

Proposed sales of water from the Toledo Bend Reservoir, a supply source on the Louisiana-Texas border from which Region C eventually plans to obtain 400,000 acre-feet of water annually (nearly 1/8 of the region's projected 2060 water demand), have also run into snags. Louisiana Governor Bobby Jindal recently blocked a water sales agreement with a private company, although the Sabine River Authority is continuing to seek proposals for purchases of up to 600,000 acre-feet of water.

If there's anything state and regional water planners have learned from these and other challenges, it is that planning for a reasonable water supply surplus is critical — because you never know when an unforeseen combination of conditions will adversely impact the water supply. With Region C continuing to grow rapidly and with water an important element of that growth, the continued prosperity and high quality of life in North Central Texas are at stake.

Texas Moves Forward With Adoption of Water Plan

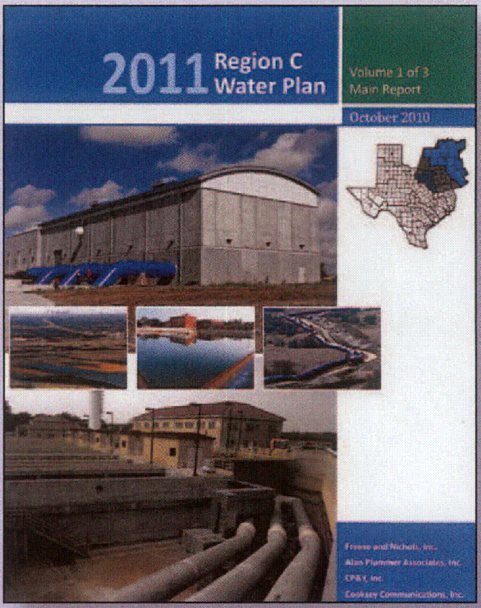
As we began the development of a 2016 Region C Water Plan, our previous plan (the 2011 plan) was on the verge of becoming part of the 2012 State Water Plan.

A draft version of the 2012 State Plan, which incorporates all of the 2011 Regional Water Plans from across the state, was made available on the Texas Water Development Board website for review and public comment from Sept. 26 through Oct. 25. The TWDB also held a series of public meetings across the state to gather feedback on the draft plan.

After taking public input, the Texas Water Development Board voted to adopt the 2012 State Water Plan at its December 15 meeting in Austin.

The plan is noteworthy for several reasons:

- It is the first State Water Plan that places the state at a water deficit — with overall demand exceeding overall supply — immediately.
- The plan puts into stark relief the economic impact and other consequences of failing to develop additional water supplies in a timely fashion. Failure to fund the 562 unique water supply projects identified in the plan would cost the state 1 million lost jobs, $116 billion in revenue and 1.4 million residents by 2060.
- The $53 billion worth of projects identified in the plan would provide 9 million acre-feet of water per year in 2060, meeting projected water needs of 8.3 million acre-feet by that time.
- Although the state's water population is expected to increase 82 percent between now and 2060, water demand is expected to grow by only 22 percent. This is due to a projected decline in the use of water for agricultural irrigation and to the increasing emphasis on water conservation across the state.



2011 Region C Water Plan Front Cover

- Under the plan, more than one-third of the projected water needs over the next 50 years would be met through conservation and reuse; new reservoirs would account for 17 percent of the need; and 34 percent would come from other surface water supplies.
- The total capital cost for all water projects in the plan, including both new supply projects and upgrades or expansions to existing projects and facilities, is $231 billion. Significant funding challenges remain to bring these projects to fruition.

For more information, or to review the current and previous State Water Plans, visit www.twdb.state.tx.us.

Planning Group Adds Groundwater Delegates

S.B. 660, adopted by the 82nd Texas Legislature, added to each Regional Water Planning Group one representative from each of the Groundwater Management Areas (GMAs) located in the regional water planning area. There are 16 GMAs in Texas, created for the purpose of providing for the conservation, preservation, protection, recharging and prevention of waste of groundwater in Texas, and there are three GMAs found in Region C.

Consequently, the following individuals were recently approved by the GMAs to represent them as members of the Region C Water Planning Group:

- **David Bailey**, representing GMA 12, is the general manager of the Mid-East Texas Groundwater Conservation District.
- **Gary Douglas**, representing GMA 11, is a member of the Neches & Trinity Valleys Groundwater Conservation District board.
- **Harold Latham**, representing GMA 8, is a member of the Red River Groundwater Conservation District board.

About the Regional Water Planning Group

Region C is made up of all or part of 16 counties in North Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups selected by the Texas Water Development Board (TWDB) to help develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jim Parks	Chair	Water Districts
Jody Puckett	Vice Chair	Municipalities
Russell Laughlin	Secretary	Industry
David Bailey	Member	GMA 12
Steve Berry	Member	Environment
Bill Ceverha	Member	Public
Jerry Chapman	Member	Water Districts
S. Frank Crumb	Member	Municipalities
Gary Douglas	Member	GMA 11
Harold Latham	Member	GMA 8
Bill Lewis	Member	Small Business
G. K. Maenius	Member	Counties
Howard Martin	Member	Municipalities
Jim McCarter	Member	Water Utilities
Dr. Paul Phillips	Member	Municipalities
Bob Scott	Member	Environment
Gary Spicer	Member	Electric Generating Utilities
Connie Standridge	Member	Water Utilities
Jack Stevens	Member	Water Districts
Danny Vance	Member	River Authority
Mary Vogelson	Member	Public
Dr. Tom Woodward	Member	Agriculture
Curtis Campbell	Non-Voting Member	Region B
Alva Cox	Non-Voting Member	Brazos G RWPG
Mike Harbordt	Non-Voting Member	Region I
Angela Kennedy	Non-Voting Member	Texas Water Development Board
Gregg Magee	Non-Voting Member	Texas Dept. of Agriculture
Sharon Nabors	Non-Voting Member	Region D
Adam Whisenant	Non-Voting Member	Texas Parks & Wildlife Dept.

REGION C

Water Planning for North Texas

5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Collin
Cooke
Dallas
Denton
Ellis
Fannin
Freestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

August 2013 Newsletter

Next Meeting:

Monday, December 2 at 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:

Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

*Please note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — and who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

For more information about the Region C Water Planning Group, contact:

James (Jim) Parks, RCWPG Chair
North Texas Municipal Water District
P.O. Box 2408, Wylie, TX 75098
Phone: (972) 442-5405
E-mail: jparks@ntmwd.com

To receive this newsletter, send your name plus an e-mail and/or mailing address to Colby Walton at [illegible]@cookseypr.com or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Rachel Ickert with Freese & Nichols at rai@freese.com.

Planning Group Updates Demand, Population Projections

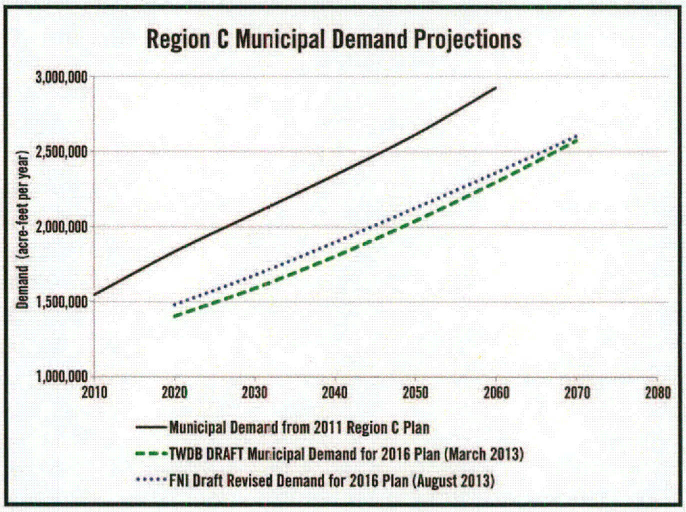
Early in 2013, the Region C Water Planning Group (RCWPG) received draft population projections and municipal water demand projections from the Texas Water Development Board (TWDB). These draft projections, which were posted to the Region C website, www.regioncwater.org, are being carefully evaluated by the RCWPG so the group can recommend any needed adjustments by mid-August 2013.

As part of this evaluation, the RCWPG has surveyed water user groups (WUGs) across North Central Texas and conferred with wholesale water providers (WWPs). The survey and meetings provided relevant feedback on the draft projections, as well as on current water supply policies in the region.

The draft population projections from the state show slightly slower population growth for the North Central Texas region, versus the population growth projected in the *2011 Region C Water Plan*, although the trends are substantially similar.

The draft municipal water demand projections from the state are quite a bit lower than what was projected in the *2011 Region C Water Plan*. This is chiefly because the gallons per capita daily (GPCD) figures used by the state to calculate those projected demands are substantially lower this time around.

The GPCD figures currently being used by the state are based on 2011 water use for each water user. The TWDB has applied this methodology statewide. It was a relatively dry year across Texas, although not as dry as some previous years, such as 2000. In the *2011 Region C Water Plan* development process, year 2000 GPCD figures were used. The newer, lower GPCD figures also reflect the implementation of more water conservation programs across the state in recent years, and in some cases reflect drought restrictions that were in place for some WUGs.



Properly calibrating the region's population and municipal demand projections, working hand-in-hand with the TWDB, is a critical step in the RCWPG's development of the *2016 Region C Water Plan*.

Region C Keeps Focus on Water Conservation

With approximately 90 percent of the state under drought conditions, including the entire North Central Texas region, water conservation remains a significant area of emphasis for regional water planners and water suppliers. Of course, the need for efficient use of scarce water resources is even more critical during dry, hot summer months.

It's not just a question of saving water to address the immediate supply shortage, although that's one important factor among many. Making more efficient use of water over time has the benefit of delaying the need for development of new water supply sources. When large capital expenditures for new water supplies are necessary, these costs are passed on to the end user through water rates.

At the same time, this rate issue is complicated by the fact that enhanced conservation results in reduced revenues to water providers whose customers use less water. With providers already having invested in previous capital projects that are still being financed, and with the need to continue maintaining existing water infrastructure, these reduced revenues can produce short-term upward pressure on providers' water rates to customers.

Water conservation can have other important benefits, however, including reducing the energy needed to transmit and treat water, and preserving the environment through a delayed need for construction of new reservoirs.

That's why regional water planners in Region C pursue a multi-strategy approach including development of new water supply sources, such as water reuse projects to tackle the supply side of the equation, and water conservation measures that address the demand side. Region C's continued, rapid population growth further intensifies the need to find a balanced approach that addresses the rising demand for a safe, reliable water supply that meets the future needs of residents and businesses.

Recent efforts by several of the region's largest water providers show how seriously the water conservation issue is being taken:

Watering Restrictions Enacted: Due to continuing drought conditions, major water suppliers in the region have enacted stringent watering restrictions, in an effort to preserve diminishing water supplies.

Recently, in June, the North Texas Municipal Water District (NTMWD) implemented Stage Three of its drought contingency plan, limiting landscape watering to no more than once weekly affecting its more than 1.6 million customers. The measures were enacted in response to significantly lower lake levels, as well as the continued unavailability of water from Lake Texoma – previously 28 percent of the District's supply – due to the zebra mussel infestation (see related news brief). By the end of June, consumers in NTMWD's service

Lake Arlington

area across Dallas' northern suburbs—including most of Collin County—achieved a water use reduction exceeding the 10 percent monthly goal.

The Tarrant Regional Water District (TRWD) began Stage One of its drought contingency plan in early June, affecting its 1.7 million customers in much of Tarrant County and surrounding counties in the western part of the Metroplex. The District has limited landscape watering to no more than twice weekly, with exceptions for drip irrigation, soaker hoses and hand watering.

In April 2012, Dallas began conservation measures with permanent, no-more-than-twice-weekly watering schedule affecting its customers in Dallas. No watering is allowed on Mondays, Tuesdays or Fridays, and watering is prohibited between 10 a.m. and 6 p.m. on the allowed watering days, with exceptions made for drip irrigation, soaker hoses and hand watering.

Joint Educational Efforts: On Nov. 1, 2012, Dallas, the NTMWD and the TRWD held the 6th annual North Texas Regional Water Conservation Symposium at the Irving Convention Center at Las Colinas. This symposium brought water industry and conservation experts to the doorstep of municipal professionals so they could learn more about water efficiency and conservation strategies and programs that have already proven successful.

Other Conservation Initiatives: Dallas Water Utilities, the Tarrant Regional Water District, the North Texas Municipal Water District, the Upper Trinity Regional Water District and other regional water providers have each undertaken a wide variety of initiatives to promote enhanced water conservation. To cite but a few examples, DWU's and TRWD's efforts are outlined in detail below.

In 2010, Dallas updated its Water Conservation Five-Year Strategic Plan, which recommended implementation strategies and programs to meet its goal of reducing water usage by 1.5 GPCD (gallons per capita per day) annually. To help meet this goal, Dallas has several ongoing water conservation programs, including:

- **Public Awareness Campaign**—Dallas shares a campaign with TRWD. By splitting the cost of creative development and using the same message, both agencies have an effective campaign with twice the message exposure per dollar spent. Campaign surveys determined that 64 percent of Dallas residents remember seeing the current "Lawn Whisperer" campaign and 73 percent consider the message effective.

- **Environmental Education Initiative (EEI)**—This program features a water conservation curriculum for Dallas school children, in-classroom lessons and staff development for teachers. In 2012, the EEI program brought water conservation information to more than 20,000 Dallas schoolchildren and faculty.

- **Seminars**—In 2012, Dallas conducted seminars on water-wise landscaping, water-efficient turf care, irrigation system repair and do-it-yourself plumbing repair for more than 1,100 attendees.

- **Water-Wise Landscape Tour**—Dallas hosted its 18th annual Water-Wise Landscape Tour in 2012, with 2,806 residents visiting 21 tour locations to learn about landscaping best practices.

- **Toilet Replacement Program**—In six years, the New Throne for Your Home program distributed 17,879 low-flow toilets to Dallas homes.

- **Free Irrigation Check-ups**—In 2012, licensed irrigators performed 1,045 check-ups for Dallas customers to help find system leaks and make recommendations for peak efficiency.

- **Minor Plumbing Repair Program**—Dallas helped more than 300 low-income families fix minor leaks and replace toilets, faucets and water heaters as needed.

- **Industrial, Commercial and Institutional Program**—This new initiative offers free facility assessments to industrial, commercial and institutional customers. The assessments suggest water system-related replacements or upgrades that may be eligible for rebates of up to $100,000.

In August 2012, the city estimated that water consumption was 5.6 percent lower than at the same time in 2011 and, on average, water use on non-watering days was 8 percent less than on watering days. Since adopting time-of-day watering restrictions in 2001, Dallas has achieved a 22 percent reduction in gallons per capita daily (GPCD) water usage, for an estimated total water savings of more than 165 billion gallons.

The Tarrant Regional Water District (TRWD) has also developed a comprehensive water conservation strategy, by implementing the following initiatives:

- **Five-Year Plan**—This plan, adopted in 2009, will serve as a road map for water conservation programs going forward.

- **Pilot Irrigation**—TRWD initiated a residential landscape irrigation evaluation program for customer cities in June 2012. Licensed irrigators managed by the W.I.S.E. Guys conducted 411 evaluations and installed 250 rain/freeze sensors. TRWD supported the program in five communities: Arlington, Bedford, Fort Worth, Mansfield and North Richland Hills.

- **Golf Course Water Conservation**—TRWD is currently developing a Water Conservation Golf Course Best Management Practices recognition program. This will encourage golf courses to be better managers of water use through the development of water budgets, water conservation plans with water saving goals, and drought contingency plans that achieve water savings based on course specifications.

- **Legislative Guidance**—The district provided key input to the Water Conservation Advisory Council on SB 181 rule revisions and guidance documents, as have other regional water providers.

- **Joint Outreach Program**—As mentioned above, TRWD and Dallas have continued their joint efforts to use the Lawn Whisperer campaign to educate water users about water-efficient landscape practices. Beyond traditional media, TRWD also uses social media to promote water conservation across North Texas, including a Lawn Whisperer Facebook page with more than 2,000 friends and a Twitter account (@SaveTarrantH2O) that keeps the water-saving information flowing.

- **Decreased Demands**—Since 2007, TRWD has observed an 8–10 percent decrease in anticipated water demands. The district has saved an estimated 45 billion gallons of water in a five-year period, with an average savings of 9 billion gallons annually. Based on current per capita consumption, the savings generated would provide enough water to meet the needs of approximately 135,000 people annually.

Thanks in large part to strategies such as these, Region C water providers are well on their way towards achieving the water conservation and reuse targets identified in the 2011 Region C Water Plan, in which 23 percent of the water available to North Central Texas in 2060 would come from municipal conservation and reuse. In fact, Region C's planned 2060 municipal conservation and reuse supply would total more than 900,000 acre-feet per year of water—significantly more than any other region in Texas.

All of these water conservation efforts show that Region C water providers are keenly focused on making wise use of this increasingly scarce and important natural resource.

Legislature Advances Water Funding Proposal; Voters Have Final Say

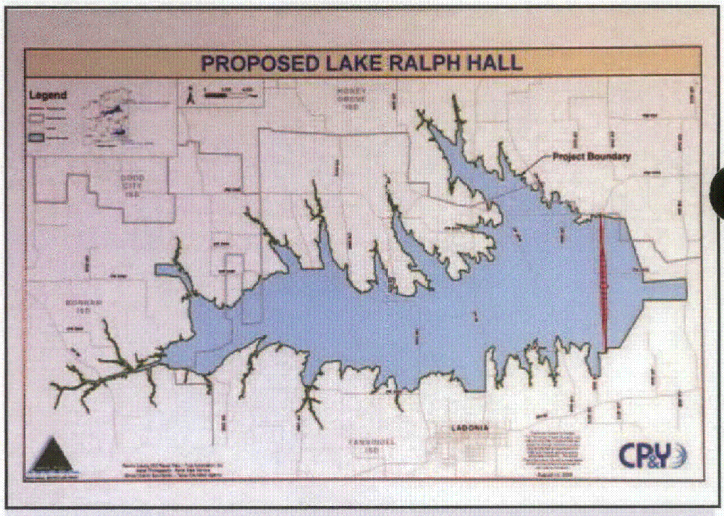
During the Texas Legislature's recent 83rd session, state legislators took an important step towards addressing future water supply needs, by voting to establish a revolving fund that will help pay for water and conservation projects across the state for years to come.

The historic action required three separate bills: HB 4, which creates a new state water fund to help local communities finance their water projects; HB 1025, which appropriates $2 billion for the new water fund from the state's Economic Stabilization Fund (a.k.a. the Rainy Day Fund); and SJR 1, which will let voters decide in November on approving a constitutional amendment that ratifies the creation of this new water fund.

With the state prone to severe droughts such as the current one, and with Texas continuing to experience tremendous population growth and economic development, meeting the state's long-term water needs is a critical challenge. Voter approval of the new revolving fund will authorize a one-time, non-recurring investment that yields generations of vital water projects benefiting Texans.

State Board Recommends Approval for Lake Ralph Hall Permit

In late June, the State Office of Administrative Hearings recommended approval for the Upper Trinity Regional Water District's (UTRWD) permit to build Lake Ralph Hall. The Texas Commission on Environmental Quality is expected to make a final decision on the water use permit application before the end of the year. UTRWD will also need approval for a Section 404 permit from the U.S. Army Corps of Engineers.



If approved, Lake Ralph Hall would be the first major reservoir permitted in North Texas in more than 20 years. The UTRWD hopes to have the new lake filled and ready for use by 2025-2030.

The reservoir, to be built on an approximate 12,000-acre site in southeastern Fannin County, is expected to supply 34,050 acre-feet of water per year to the District's customers, chiefly in Denton County, as well as to the City of Ladonia and portions of Fannin County. The UTRWD also plans to apply for the right to reuse return flows from the project, providing approximately 18,000 acre-feet of water annually to the region. Together, the lake and the reuse project are expected to cost approximately $286 million.

U.S. Supreme Court Sides with Oklahoma In Water Dispute

On June 13, the U.S. Supreme Court settled a legal dispute between the Tarrant Regional Water District (TRWD) and Oklahoma, rejecting the TRWD's claim to 150 billion gallons of water annually from Oklahoma river basins under the Red River Compact. In its ruling, the Supreme Court upheld a lower court ruling that found Oklahoma's prohibition on cross-border water sales valid.

The TRWD had been seeking to claim Texas' 25 percent share of the water in the basin before it reached the Red River and became too salty for potable use. The District will now look at other options to provide water to meet its customers' future water needs, including continuing to work with Oklahoma on whether a deal can be reached to buy water.

Court Affirms Existence of Region C – Region D Conflict

On May 23, 2013, the 11th Circuit Court of Appeals affirmed a previous Travis County District Court ruling that the Texas Water Development Board (TWDB) violated the SB 1 planning process requirements and TWDB rulesby approving the 2011 Region C and Region D Water Plans. The lower court opinion held that the TWDB's violation stemmed from its failure to resolve an "interregional conflict" that allegedly exists between the two plans, relating to the Marvin Nichols Reservoir project.

Coming soon...

Region C e-newsletters! To sign up, send your name and e-mail address to colby@cookseypr.com

The 2011 Region C Water Plan identified the Marvin Nichols Reservoir project, physically located within Region D (Northeast Texas), as a recommended water management strategy for Region C. The plan calls for the reservoir to supply nearly 490,000 acre-feet per year of water to the North Central Texas region.Meanwhile, in its 2011 plan, Region D included reasons why the proposed reservoir's impact to timber, agriculture, the environment and other natural resources resulted in an interregional conflict that the TWDB had to resolve per the statute and the agency's own rules.

Subsequent to the latest court ruling, the TWDB engaged the State Office of Administrative Hearings (SOAH) to mediate efforts at resolving this conflict between the two regional water plans. This process is expected to commence in September 2013.

About the Regional Water Planning Group

Region C is made up of all or part of 16 counties in North Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups selected by the Texas Water Development Board (TWDB) to help develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jim Parks	Chair	Water Districts
Jody Puckett	Vice Chair	Municipalities
Russell Laughlin	Secretary	Industry
David Bailey	Member	GMA 12*
Steve Berry	Member	Environment
Bill Ceverha	Member	Public
Jerry Chapman	Member	Water Districts
S. Frank Crumb	Member	Municipalities
Gary Douglas	Member	GMA 11*
James Hotopp	Member	Municipalities
Thomas La Point	Member	Public
Harold Latham	Member	GMA 8*
G. K. Maenius	Member	Counties
Howard Martin	Member	Municipalities
Jim McCarter	Member	Water Utilities
Steve Mundt	Member	Small Business
Bob Scott	Member	Environment
Gary Spicer	Member	Electric Generating Utilities
Connie Standridge	Member	Water Utilities
Jack Stevens	Member	Water Districts
Kevin Ward	Member	River Authority
Dr. Tom Woodward	Member	Agriculture
Curtis Campbell	Non-Voting Member	Region B
Alva Cox	Non-Voting Member	Brazos G RWPG
Mike Harbordt	Non-Voting Member	Region I
Gregg Magee	Non-Voting Member	Texas Dept. of Agriculture
Sharon Nabors	Non-Voting Member	Region D
Matt Nelson	Non-Voting Member	Texas Water Development Board
Walt Sears	Non-Voting Member	Region D
Adam Whisenant	Non-Voting Member	Texas Parks & Wildlife Dept.

**GMA = Groundwater Management Area*

REGION C

Water Planning
for North Texas

5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Collin
Cooke
Dallas
Denton
Ellis
Fannin
eestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

December 2013 Newsletter

Next Meeting:
Monday, April 28, 2014 at 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:
Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

*Please note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — nd who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

Members of the public interested in attending the RCWPG's public meetings must now provide government-issued identification to authorized personnel prior to entering the plant site. Please be sure extra time is allotted for this security check. No person will be allowed to enter the facility without proper identification.

For more information about the Region C Water Planning Group, contact:
James (Jim) Parks, RCWPG Chair
North Texas Municipal Water District
P.O. Box 2408, Wylie, TX 75098
Phone: (972) 442-5405
E-mail: jparks@ntmwd.com

ceive this newsletter, send your name plus an e-mail and/or mailing address to Colby Walton at colby@cockseypr.com or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Rachel Ickert with Freese & Nichols at rai@freese.com.

Planning Group Analyzes Water Supply, IDs Potentially Feasible Strategies

In August 2013, the Region C Water Planning Group (RCWPG) completed its review of draft population projections and municipal water demand projections from the Texas Water Development Board (TWDB), and recommended changes to TWDB's draft data to improve the overall projections.

Now that population and water demand projections have been finalized, the RCWPG is turning to a review and analysis of the region's existing water supplies – including groundwater, surface water and water from reuse sources – so it can allocate those currently available supplies to water user groups (WUGs) and wholesale water providers (WWPs) across the region.

Once those supplies are matched up to WUGs and WWPs, it will be evident to the RCWPG where there are unmet needs that should be addressed in the 2016 Region C Water Plan.

As part of evaluating the TWDB's draft population and demand projections, the RCWPG earlier this year surveyed WUGs across North Central Texas and conferred with WWPs. The survey and meetings provided relevant feedback not only on the draft projections, but also on currently available water supplies and water supply policies across the region.

Drawing on those survey results, the RCWPG is now working on its regional water supply analysis, including an analysis of water conservation and reuse efforts already underway across the region. Simultaneously, the group is developing a list of potentially feasible water management strategies, from which it will ultimately select a recommended set of strategies.

Much of this water supply analysis and feasible strategy identification will be completed by early 2014.

Once the RCWPG has evaluated water availability and existing supplies, identified water needs and identified potentially feasible water management strategies, it will submit this data to the TWDB by the August 1, 2014 deadline. This is a critical step in the ultimate development of Region C's Initially Prepared Plan (IPP).

In mid-2014, the RCWPG will turn its focus to evaluating each of the potentially feasible water management strategies and drafting the IPP, which is due to the TWDB by May 1, 2015. Shortly after this, in the summer of 2015, the RCWPG will host a public hearing on the IPP to gather public input on the proposed recommendations, before a final plan is prepared.

The planning group must adopt a final version of the *2016 Region C Water Plan* and submit it to the TWDB no later than Nov. 2, 2015.

Region C Providers Continue Drought Response

Despite some recent rains, about half of Texas remains in a drought situation, including much of the North Central Texas area comprising Region C. Consequently, major water providers in the region continue to restrict water use in order to preserve dwindling supplies.

In mid-October, the North Texas Municipal Water District (NTMWD), which supplies water to areas north and east of Dallas, announced that it would remain in Stage 3 of the District's Water Conservation and Drought Contingency and Water Emergency Response Plan. Continuation of Stage 3 water restrictions is necessary due to below average rainfall, declining water levels of NTMWD reservoirs and the ongoing prohibition of pumping water from Lake Texoma due to the zebra mussel infestation.

Reservoir	Percent Full*
Arlington	73.4
Benbrook	78.8
Bonham	77.5
Bridgeport	45.1
Cedar Creek	77.7
Eagle Mountain	68.9
Fork	76.8
Grapevine	64.6
Jim Chapman (Cooper)	29.0
Joe Pool	93.0
Lavon	47.6
Lewisville	64.4
Livingston	100.0
Navarro Mills	100.0
Palestine	100.0
Ray Hubbard	69.8
Ray Roberts	74.9
Richland-Chambers	71.4
Tawakoni	65.5
Texoma	82.7
Worth	72.7

Major Reservoirs For Region C Water Supply
*Levels as of 12/3/13

Lavon Lake, the District's primary water supply, is currently more than 12 feet below the normal conservation level, making it below 50 percent capacity. Lake Chapman, the other key NTMWD reservoir, is over 13 feet low, putting it under 30 percent full.

As part of Stage 3, in addition to previous time-of-day restrictions, seasonal landscape watering is limited to once every two weeks with sprinklers or irrigation systems between Nov. 1 and March 31. Soaker hoses and drip irrigation systems can continue to be used for up to two hours per day for foundations and trees. The NTMWD's municipal customers have enacted their own restrictions to comply with the District's Stage 3 restrictions.

The NTMWD will get some partial relief in January when the first phase of the new pipeline from Lake Texoma comes online. The $310 million pipeline will connect Lake Texoma directly to the Wylie, Texas water treatment plant (bypassing Lavon Lake) and allow the NTMWD to resume using the Texoma water supply while minimizing the spread of the invasive zebra mussel. The Texoma supply is anticipated to be fully restored in the Spring of 2014 with the completion of all phases of this pipeline.

As of the end of November, the Tarrant Regional Water District's four reservoirs were in relatively better shape, at 69 percent of capacity. The District has instituted time-of-day restrictions and limited watering to twice a week, and it does not currently anticipate going to once-a-week watering restrictions soon.

Dallas Water Utilities, another one of the region's major wholesale water providers, is also a bit better off than NTMWD. Lake levels for Dallas' water supply are currently around 70 percent of capacity. The City of Dallas previously enacted permanent time-of-day and twice-per-week lawn watering restrictions for its customers, in order to protect scarce water supplies.

Upper Trinity Regional Water District, which provides wholesale water service to cities and utilities primarily in Denton County, continues in Stage 1 – Water Wise of its drought contingency plan. Initiated in 2012, Stage 1 includes mandatory time-of-day and twice-per-week landscape watering schedule. The district's reservoirs are currently at about 70 percent of capacity.

These temporary drought response measures and permanent water conservation measures are important, but they are only part of the bigger effort to ensure North Central Texas residents and businesses have enough water.

Texas' tendency to experience extended droughts, currently stretched water supplies and anticipated growth are a major reason why regional water planners, in Region C and statewide, are keenly focused on long-term water planning, including a significant emphasis on water conservation and reuse.

The *2011 Region C Water Plan* calls for conservation and reuse together to account for 23 percent of the region's available water supplies. And, with only about 25 percent of the state's population, the 2011 plan anticipates that Region C will develop 40 percent of the state's conservation- and reuse-related water supplies over the next 50 years. Those figures may continue to go up as subsequent regional water plans are developed, if current trends are any indication.

For water conservation tips and more information, visit www.savetexaswater.org or www.wateriq.org.

Voters Approve Historic Water Funding Proposal

On Nov. 5, 2013, Texas voters overwhelmingly indicated their support for water project funding, approving the appropriation of $2 billion from the state's economic stabilization fund (a.k.a. the Rainy Day Fund) to establish a revolving fund that will help pay for water and conservation projects in the State Water Plan.

The constitutional amendment required to ratify the creation and financing of the revolving loan fund was on the ballot as Proposition 6, and the measure received support from over 73 percent of Texas citizens voting in the Nov. 5 election. Eight other constitutional amendments were also on the ballot. All nine measures were handily approved by voters.

Speaker Straus Rallies Support for Proposition 6

In a statement issued the day after the election, Texas House Speaker Joe Straus said, "This vote will allow communities across Texas to secure the water resources needed to foster private-sector growth and economic opportunity. Job-creators will know that Texas has the water supply they need, and towns and cities will be better prepared for prolonged drought conditions."

The one-time, non-recurring investment authorized by voters can now be leveraged to yield up to $30 billion worth of vital water projects benefiting Texans.

As a next step before any projects can be funded, regional planning groups statewide must prioritize projects in their respective regional water plans, considering criteria such as:

(1) the decade in which the project will be needed;

(2) the feasibility of the project, including the availability of water rights for purposes of the project and the hydrological and scientific practicability of the project;

(3) the viability of the project, including whether the project is a comprehensive solution with a measurable outcome;

(4) the sustainability of the project, taking into consideration the life of the project; and

(5) the cost-effectiveness of the project, taking into consideration the expected unit cost of the water to be supplied by the project.

A draft prioritization of 2011 regional water plan projects is due to the TWDB by June 1, 2014, and the final prioritization is due by Sept. 1, 2014.

When applicants submit projects for financial assistance from the newly created water fund, the TWDB will then apply a point system for prioritizing which projects receive loans. Projects having a substantial effect, such as those serving a large population, providing assistance to a diverse urban and rural population, providing regionalization, or meeting a high percentage of the water supply needs of water users, will be given the highest consideration.

The regional water planning groups' prioritization of projects will also be one of the criteria weighed, among other factors.

Rules for disbursing loans from the fund will be finalized by the TWDB no later than March 1, 2015. At least 20 percent of loan proceeds must be used to target conservation and reuse projects, and at least 10 percent of loan proceeds must be used to target rural and irrigation conservation projects.

State Environmental Agency Approves Lake Ralph Hall Permit

On Sept. 24, 2013, the Texas Commission on Environmental Quality (TCEQ) approved development of the first major reservoir to be developed in North Texas in almost 30 years. By approving the Upper Trinity Regional Water District's (UTRWD) water use permit application, the TCEQ significantly advanced the potential creation of the lake, which the UTRWD hopes to have filled and ready by the mid-2020s to avoid a future water crisis.

The only remaining hurdle before construction can begin is U.S. Army Corps of Engineers approval of the lake through a Section 404 permit, which could come in the next 18 to 24 months.

The reservoir, to be built on an approximate 12,000-acre site in southeastern Fannin County, is expected to supply 30 MGD (million gallons daily) of water to the District's customers, chiefly in Denton County, as well as to the City of Ladonia and portions of the Sulphur River Basin in Fannin County. The UTRWD also plans to apply for the right to reuse return flows from the project, providing approximately 16 MGD of water to the region. Together, the lake, pipeline and the reuse project are expected to cost approximately $286 million.

The specific funding sources for the project have not yet been identified. As a project included in the State Water Plan, Lake Ralph Hall could be eligible for the funding authorized by Proposition 6 (see article above).

The permitting process for the new reservoir began more than a decade ago, illustrating the need for North Central Texas to get its water management strategies for the future lined up as soon as possible, in order to accommodate the region's continued growth and the lengthy process to develop water supplies.

Security Measures Added at Site of Planning Group Meetings

For years, the Region C Water Planning Group (RCWPG) has held its meetings at the Trinity River Authority's Central Regional Wastewater Plant, located at 6500 W. Singleton Blvd., Grand Prairie, TX 75212. The facility is a desirable location for RCWPG meetings due to its relatively convenient, central location in the North Central Texas region and its available meeting facilities.

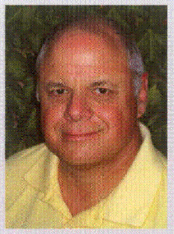
The public needs to be aware that the Central Regional Wastewater Plant is a secured facility, and that new security measures affecting visitors have recently been initiated at the plant.

Members of the public interested in attending the RCWPG's public meetings must now provide government-issued identification to authorized personnel prior to entering the plant site. Please be sure extra time is allotted for this security check. No person will be allowed to enter the facility without proper identification.

Thank you in advance for your cooperation and understanding.

Planning Group Elects Members, Officers

At the Region C Water Planning Group's (RCWPG) Dec. 2, 2013 public meeting, the following individuals were elected as new RCWPG members and will serve the remainder of their predecessors' unexpired terms, until Nov. 1, 2016:



Bob Riley

Bob Riley (representing the environmental interest group)

Riley is a Fort Worth-based landscape architect, serving as a development consultant to design professionals, government entities, property owners and developers across the region. From 2000-2007, he served as development director for the city of Fort Worth. He occupies the RCWPG seat previously held by Steve Berry, who recently tendered his resignation.

Drew Satterwhite

Drew Satterwhite (representing water districts)

Satterwhite was recently named general manager of the Greater Texoma Utility Authority (GTUA). Prior to joining the GTUA, Satterwhite served as a project manager and research engineer with the North Texas Municipal Water District. He occupies the RCWPG seat previously held by Jerry Chapman, who recently resigned in anticipation of his retirement from the GTUA.

During the meeting, the RCWPG formally recognized retiring members Steve Berry and Jerry Chapman for their significant efforts to ensure that North Central Texas residents and businesses will have a safe, plentiful water supply for many decades to come. Berry joined the Planning Group in 2006, and Chapman served on the Planning Group since its inception in 1997.

Additionally, RCWPG re-elected the following members to new five-year terms expiring Nov. 1, 2018: Bill Ceverha (public); Russell Laughlin (industries); G.K. Maenius (counties); Howard Martin (municipalities); Robert Scott (environmental); Gary Spicer (electric generating utilities); Jack Stevens (water districts); Connie Standridge (water utilities); and Kevin Ward (river authorities).

The RCWPG also elected its 2014 officers at the Dec. 2 meeting, selecting the following members to continue their service: Jim Parks, chair; Jody Puckett, vice chair; and Russell Laughlin, secretary.

Coming soon...

Region C e-newsletters!
To sign up,
send your name and
e-mail address to
colby@cookseypr.com

About the Region C Water Planning Group

Region C is made up of all or part of 16 counties in North Central Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups chosen by the Texas Water Development Board (TWDB) to develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jim Parks	Chair	Water Districts
Jody Puckett	Vice Chair	Municipalities
Russell Laughlin	Secretary	Industry
David Bailey	Member	GMA 12*
Bill Ceverha	Member	Public
S. Frank Crumb	Member	Municipalities
Gary Douglas	Member	GMA 11*
James Hotopp	Member	Municipalities
Dr. Thomas La Point	Member	Public
Harold Latham	Member	GMA 8*
G. K. Maenius	Member	Counties
Howard Martin	Member	Municipalities
Jim McCarter	Member	Water Utilities
Steve Mundt	Member	Small Business
Bob Riley	Member	Environment
Drew Satterwhite	Member	Water Districts
Bob Scott	Member	Environment
Gary Spicer	Member	Electric Generating Utilities
Connie Standridge	Member	Water Utilities
Jack Stevens	Member	Water Districts
Kevin Ward	Member	River Authority
Dr. Tom Woodward	Member	Agriculture
Curtis Campbell	Non-Voting Member	Region B
Alva Cox	Non-Voting Member	Brazos G RWPG
Darrell Dean	Non-Voting Member	Texas Dept. of Agriculture
Mike Harbordt	Non-Voting Member	Region I
Temple McKinnon	Non-Voting Member	Texas Water Development Board
Sharon Nabors	Non-Voting Member	Region D
Adam Whisenant	Non-Voting Member	Texas Parks & Wildlife Dept.

**GMA = Groundwater Management Area*

REGION C
Water Planning
for North Texas
5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

REGION C

Water Planning for North Texas

November 2014 Newsletter

Collin
Cooke
Dallas
Denton
Ellis
Fannin
Freestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

Next Meeting:
Jan. 26, 2015 at 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:
Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

*Please note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — and who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

Members of the public interested in attending the RCWPG's public meetings must now provide government-issued identification to authorized personnel prior to entering the plant site. Please be sure extra time is allotted for this security check. No person will be allowed to enter the facility without proper identification.

For more information about the Region C Water Planning Group, contact:

Kevin Ward
RCWPG Incoming Secretary
Trinity River Authority
P.O. Box 60, Arlington, TX 76004
Phone: 817-493-5100
E-mail: wardk@trinityra.org

To receive this newsletter, send your name plus an e-mail and/or mailing address to Colby Walton at colby@cookseypr.com or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Amy Kaarlela with Freese & Nichols at adk@freese.com.

Planning Group Makes Progress on 2016 Water Plan

Over the past year, the Region C Water Planning Group (RCWPG) focused its planning efforts on a review and analysis of the region's existing water supplies – including groundwater, surface water and water reuse – so it could allocate those currently available supplies to water user groups (WUGs) and wholesale water providers (WWPs) across the region.

With those available supplies matched up to WUGs and WWPs, it is now evident to the RCWPG where there are unmet needs that should be addressed in the 2016 Region C Water Plan.

After evaluating water availability and existing supplies, and identifying water needs, the RCWPG submitted this technical data to the Texas Water Development Board (TWDB) in late July 2014. This is a critical step in the ultimate development of Region C's Initially Prepared Plan (IPP).

To help the TWDB prioritize water projects for potential funding from the newly created State Water Implementation Fund for Texas, the RCWPG also recently submitted its prioritization of projects in the 2011 Region C Water Plan to the TWDB *(see separate article: "The Changing Face of Texas Water Project Funding").*

Now the group turns its focus to identification and a more detailed analysis of potentially feasible water management strategies, in order to determine which should be included as recommended strategies in the Initially Prepared Plan (IPP) next year. The IPP, a draft version of the 2016 Region C Water Plan, is due to the TWDB by May 1, 2015.

Shortly after this, in the summer of 2015, the RCWPG will host a public hearing on the IPP to gather public input on the proposed recommendations, before a final plan is prepared.

The planning group must adopt a final version of the 2016 Region C Water Plan and submit it to the TWDB no later than Nov. 2, 2015.

Water Conservation and Reuse Remain a Top Priority

Roughly half of Texas continues to experience drought conditions, with the current drought now extending to over four years in duration. The state's water reservoirs are only about 64 percent full, with dire water situations in some localized areas, such as Mineral Wells and Wichita Falls.

In parts of Region C, the water situation is challenging, with "severe" and "extreme" drought conditions prevalent in the western portion. The eastern portion of the region is also facing drought conditions, though not quite as bad as in the region's western counties. Some area lakes are at or near all-time record low levels.

Reservoir	Percent Full*
Arlington	56.0
Benbrook	67.6
Bonham	73.6
Bridgeport	38.7
Cedar Creek	74.0
Eagle Mountain	55.8
Fork	73.9
Grapevine	57.5
Jim Chapman (Cooper)	34.5
Joe Pool	92.6
Lavon	47.0
Lewisville	68.8
Livingston	97.5
Navarro Mills	83.9
Palestine	95.0
Ray Hubbard	59.1
Ray Roberts	75.4
Richland-Chambers	64.6
Tawakoni	57.8
Texoma	82.9
Worth	66.1

Major Reservoirs For Region C Water Supply

*Levels as of 11/5/14

The region has seen sporadic rainfall in recent months, but in many cases, the rain hasn't fallen where it is most needed – either on or upstream from major reservoirs *(see "Where the Rain Falls Really Matters" article on next page).*

While there is some hope for an El Niño weather pattern this winter in Texas, with potential for abundant rainfall and cooler temperatures (thus reducing evaporation), the latest forecasts show a reduced likelihood of any El Niño. Even if one does occur, the odds are now greater that it will be a weak El Niño.

Major water providers across North Central Texas are continuing to restrict water use in order to preserve the remaining water supplies. The good news is that they are seeing water demand reductions in response to their restrictions.

These measures, including both temporary drought responses and permanent water conservation strategies, are important. As previously noted, however, they are only part of the bigger effort to ensure North Central Texas residents and businesses have enough water for the long-term.

Water conservation and reuse are an enormous part of the region's long-term water management strategy. The *2011 Region C Water Plan* calls for conservation and reuse together to account for 23 percent of the region's available water supplies. With only one-quarter of the state's population, Region C currently plans to develop 40 percent of the state's conservation- and reuse-related water supplies over the next 50 years. Those figures may continue to go up as subsequent regional water plans are developed, based on current trends.

For water conservation tips and more information, visit www.savetexaswater.org or www.wateriq.org.

Update on Interregional Conflict Between Regions C and D

The conflict between Regions C and D over the Marvin Nichols Reservoir project continues to play out, with a number of important developments taking place over the past 18 months.

In May 2013, the 11th Circuit Court of Appeals affirmed a lower court ruling that the Texas Water Development Board (TWDB) violated SB 1 planning process requirements and TWDB rules by approving the 2011 water plans for Regions C and D. The lower court held that the TWDB's violation stemmed from its failure to resolve an "interregional conflict" between the two plans, relating to the Marvin Nichols Reservoir project.

The 2011 Region C Water Plan identified the Marvin Nichols Reservoir project, physically located within Region D (Northeast Texas), as a recommended water managem strategy for Region C. The plan calls for the reservoir to supply nearly 490,000 acre-feet per year of water to water users in Region C and another 120,000 acre-feet yearly to Region D.

Meanwhile, in its 2011 plan, Region D indicated that the proposed reservoir's impact to timber, agriculture, the environment and other natural resources resulted in an interregional conflict that the TWDB had to resolve per the statute and the agency's own rules.

Subsequent to the court decision, the TWDB engaged the State Office of Administrative Hearings (SOAH) to mediate efforts at resolving this conflict. In May 2014, the TWDB's Executive Administrator submitted a final recommendation to the Board, recommending that the conflict be resolved by instructing the RCWPG to readopt its current regional water plan with Marvin Nichols Reservoir as a strategy, and the Region D group to amend its plan to reflect that the conflict has been resolved. The final recommendation also included several revisions and options based on public input received from both regions.

The TWDB then requested legal briefs from Regions C and D, which were submitted prior to a public meeting in August. After the public meeting, the TWDB released an interim order directing Region C to conduct an analysis and quantification of the impacts of Marvin Nichols on the agricultural and natural resources of Region D and the state.

This analysis was submitted to the TWDB in late October 2014. In December, Region D will have an opportunity to submit a written response to the Region C analysis, and the matter has been scheduled for further TWDB consideration at its Jan. 8, 2015 Board meeting.

After the final TWDB determination, a meeting will be held to review the TWDB decision, in addition to a public hearing. At that point, the 2011 Region C Water Plan would potentially be amended and/or re-adopted. Please stay tuned for further updates.

Where the Rain Falls Really Matters

(SOURCE: National Weather Service, Dallas/Fort Worth Weather Forecast Office)

While North Texas has seen some rainstorms in recent months, the scattered nature of the heaviest rainfall has frequently meant that Region C's primary water supplies have seen little beneficial impact. To understand why, it's important to know where the critical watersheds are for the region's lakes.

Figure 1 is a map of the region showing the drainage basin or watershed for each area lake. Significantly, the watershed for Lake Livingston (a water source for the greater Houston area), extends into and covers most of Dallas and Tarrant counties. This means that much of the rain that falls on Dallas or Fort Worth chiefly benefits another metro area on the supply side, although local rainfall can certainly help with a short-term reduction of water demands here.

Also be sure to notice that only part of the Metroplex is in the watersheds of our water supply reservoirs. This means that heavy rain has to fall into a precise area – on or directly upstream from the key reservoirs – to help increase the region's water supply.

Figure 2 shows the watersheds for the main North Texas lakes and reservoirs. Watersheds supplying the greater Dallas area are shaded in orange, while watersheds supplying the Tarrant Regional Water District are shaded in yellow. Again, notice that much of the rain that may fall on North Texas does not contribute to Metroplex water supplies.

That's why it really matters not only how much rain North Texas gets, but also exactly where it falls – during those relatively few times our region sees heavy rainstorms.

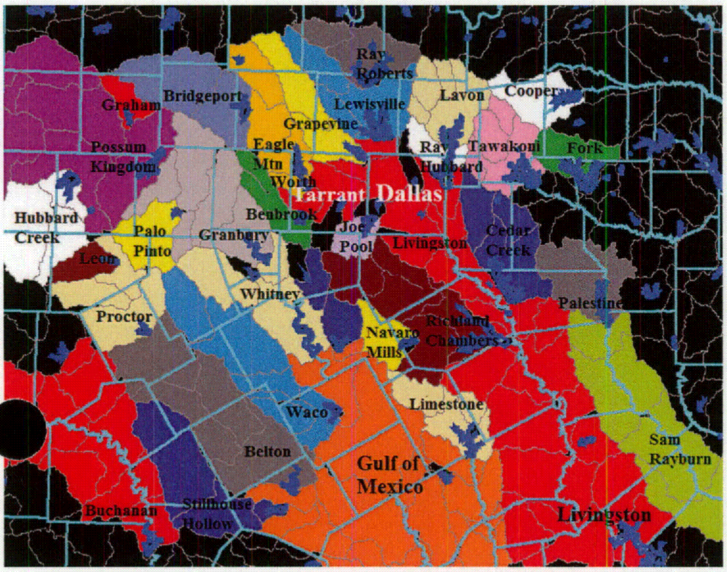


Figure 1: Drainage Basins or Watersheds for Area Lakes (note: Cooper Lake, upper right, is also known as Jim Chapman Lake)

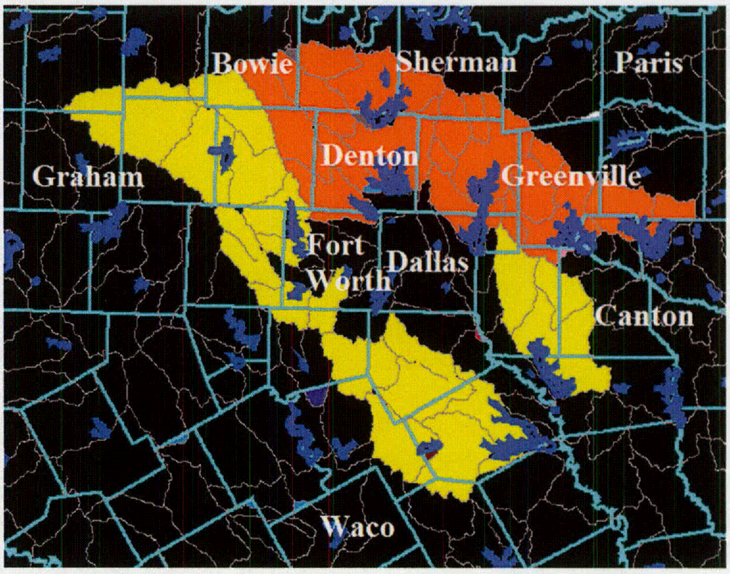
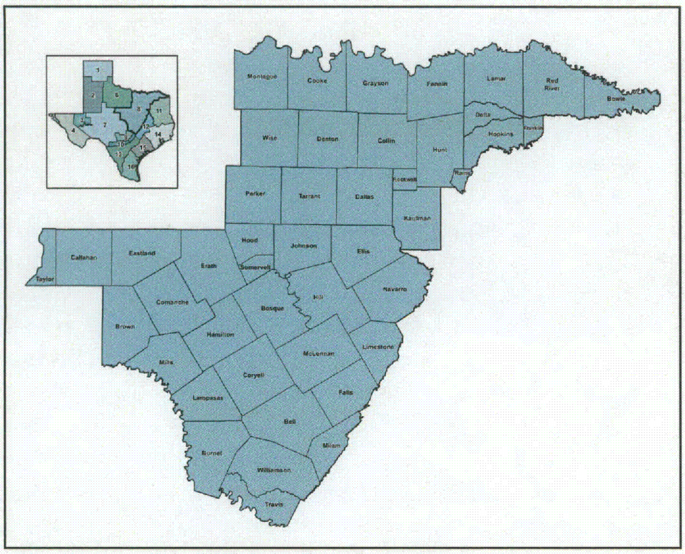


Figure 2: Watersheds for the Main Reservoirs Supplying North Texas

New, Improved Groundwater Availability Model Nearly Ready for Launch

Over the past two years, a critical groundwater modeling update has been underway, which will deepen Region C's understanding of available supplies in underground aquifers and affect the planning of future groundwater allocations in the North Central Texas area.

Since Jan. 2012, Groundwater Management Area 8 (GMA 8) has been working on an update to its Northern Trinity/Woodbine Groundwater Availability Model (GAM). GMA 8 expects that the new GAM, which offers significantly enhanced detail and accuracy compared to the previous model, will provide increasingly reliable information about groundwater supplies across Region C, and beyond.



Groundwater Management Area 8

GMA 8 is a management area created to assist Groundwater Conservation Districts in future planning for groundwater. It includes major aquifers such as the Trinity and Edwards (Balcones Fault Zone), as well as various minor aquifers, such as the Blossom, Brazos River Alluvium, Ellenberger-San Saba, Hickory, Marble Falls, Nacatoch and Woodbine. Its geographic reach is fairly broad, including part or all of 45 Texas counties and 11 Groundwater Conservation Districts.

Its work is critical to Region C because most of Region C is covered by GMA 8, with the exception of Freestone, Henderson and Jack counties and a portion of Navarro County. Ultimately, the GAM plays a role in helping GMA 8 to set desired future conditions and determine how much groundwater can be considered "available" for purposes of regional water planning.

Within Region C, four Groundwater Conservation Districts (Northern Trinity GCD, Upper Trinity GCD, North Texas GCD and Prairielands GCD) undertook and funded $1.6 million, and provided a wealth of data, for the GAM update project. The new GAM is being developed by geoscience and engineering firm INTERA, Inc., along with the Bureau of Economic Geology and LBG-Guyton in cooperation with the Texas Water Development Board (TWDB).

The old model, developed in 2004, had some fundamental issues, such as showing aquifers as a whole rather than revealing their nuanced layers and zones. The new model will address this shortcoming by dividing aquifers into quarter-mile grids, rather than the one-mile grids in the old model. With this much higher resolution look at the aquifers, the new GAM will yield a much more detailed, finer-scale analysis.

Earlier this summer, GMA 8 released an updated draft model for review and comment, and all affected regional water planning groups and GCDs were asked to provide feedback. As part of the updated GAM development, three runs of the model were performed for all GCDs located within GMA 8, giving the Districts an idea for how the new model predicts future aquifer conditions compared to the old model.

The project was completed on time and under budget on Sept. 1, 2014, with the delivery of a final draft model. GMA 8 expects to receive notification from the TWDB that the updated GAM has been adopted as the official GAM for the Northern Trinity and Woodbine aquifers by the end of 2014. GMA 8 will then use the new model to set desired future conditions within the aquifers, and these are expected to be completed by May 1, 2016. For more information, visit http://www.gma8.org/.

Since the updated GAM isn't yet finalized, it wasn't used to determine desired future conditions or available groundwater supplies for the current five-year cycle of regional water planning. The new GAM will yield valuable data for the next planning round, however, when Region C begins work on its 2021 Region C Water Plan.

While groundwater is not a large source of water supply for Region C as a whole, expected to provide only about 3 percent of the region's total 2060 water supply, it is critically important in many rural areas that do not have ready access to surface water. With more reliable information from the new GAM, Region C will soon be able to make even better decisions about groundwater allocations in its future planning efforts.

The Changing Face of Texas Water Project Funding

(SOURCE: Texas Comptroller of Public Accounts, "Texas Water Report: Going Deeper for the Solution")

Water project funding in Texas is about to undergo a significant transformation. This change could have major, beneficial implications for communities in Region C seeking the lowest-cost option for financing badly needed water supply projects.

In Texas, development of local water infrastructure is primarily the responsibility of local governments, who typically issue bonds to pay for projects. Such projects can be very costly, however, so many communities rely on state assistance for funding.

The Texas Water Development Board (TWDB) provides a combination of federal and state funding, chiefly in the form of loans, for such water projects. This includes projects recommended in the State Water Plan.

The Texas Legislature first appropriated funding for State Water Plan projects in 2007, providing about $80 million in general revenue funds. These funds enabled TWDB to issue nearly $1.5 billion in bonds at below-market rates to support project development.

As a result of these appropriations, TWDB has been able to provide more than $1.05 billion in low-interest loans and grants supporting nearly 50 projects statewide. The projects encompass a wide variety of water management strategies, including groundwater desalination, water transmission lines, treatment facilities, wetland reuse projects, new groundwater wells and new reservoirs.

The TWDB also issues bonds to help local water entities lower their borrowing costs. The Legislature sets strict limits on the amount of bonds they can issue. The Development Fund, or D-Fund, is the most significant source of one-time-use bonding authority, providing more than $4.2 billion for one-time use. Of this total, however, $3.9 billion has already been used.

Recognizing this, in 2011, Texas voters approved a constitutional amendment giving TWDB an additional $6 billion of "evergreen" bonding authority. This means that TWDB can re-issue bonds as previous ones are paid off. To date, TWDB has not used any of this evergreen bonding authority.

The new face of water project funding in Texas emerged in 2013, when voters approved Proposition 6, moving $2 billion from the Rainy Day Fund into the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT).

The newly authorized funds will be used to finance projects in the State Water Plan. Under the authorizing legislation, TWDB is required to prioritize regional water project proposals based on a set of criteria reflecting the size, diversity and needs of the population they would serve. As part of this process, the Region C Water Planning Group recently prioritized the projects included in the 2011 Region C Water Plan and submitted this list to the TWDB.

The SWIFT/SWIRFT funds create a Texas revolving loan program that will ultimately reduce borrowing costs for local entities. Without state assistance, local water entities would have to borrow money or issue bonds backed only by their own locally generated revenues, usually at a much higher cost. Now, the TWDB may issue general obligation (GO) bonds using its existing $6 billion in evergreen bonding authority, or it may issue revenue bonds to help local entities access cheaper financing.

Rules for disbursing loans from the newly created funds will be finalized by the TWDB no later than March 1, 2015.

The new funds are expected to help finance more than $25 billion in water projects statewide over the next 50 years. It is also worth noting that at least 20 percent of loan proceeds must be used to target conservation and reuse projects, and at least 10 percent of loan proceeds must be used to target rural and irrigation conservation projects.

About the Region C Water Planning Group

Region C is made up of all or part of 16 counties in North Central Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups chosen by the Texas Water Development Board (TWDB) to develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jim Parks	Outgoing Chair	Water Districts	*Bob Riley*	Member	Environment
Jody Puckett	Incoming Chair	Municipalities	*Drew Satterwhite*	Member	Water Districts
Russell Laughlin	Incoming Vice Chair	Industry	*Bob Scott*	Member	Environment
Kevin Ward	Incoming Secretary	River Authority	*Gary Spicer*	Member	Electric Generating Utilities
David Bailey	Member	GMA 12*	*Connie Standridge*	Member	Water Utilities
Bill Ceverha	Member	Public	*Jack Stevens*	Member	Water Districts
S. Frank Crumb	Member	Municipalities	*Dr. Tom Woodward*	Member	Agriculture
Gary Douglas	Member	GMA 11*	*Curtis Campbell*	Non-Voting Member	Region B
James Hotopp	Member	Municipalities	*Alva Cox*	Non-Voting Member	Brazos G RWPG
Dr. Thomas La Point	Member	Public	*Darrell Dean*	Non-Voting Member	Texas Dept. of Agriculture
Harold Latham	Member	GMA 8*	*Mike Harbordt*	Non-Voting Member	Region I
G. K. Maenius	Member	Counties	*Sharon Nabors*	Non-Voting Member	Region D
Howard Martin	Member	Municipalities	*Connie Townsend*	Non-Voting Member	Texas Water Development Board
Jim McCarter	Member	Water Utilities	*Adam Whisenant*	Non-Voting Member	Texas Parks & Wildlife Dept.
Steve Mundt	Member	Small Business	**GMA = Groundwater Management Area*		

REGION C
Water Planning for North Texas
5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Collin
Cooke
Dallas
Denton
Ellis
Fannin
Freestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

March 2015 Newsletter

Next Meeting:
April 20, 2015 at 1:00 p.m., subject to change. Please monitor www.regioncwater.org for updates.

Meeting Location:
Trinity River Authority
Central Wastewater Treatment Plant
6500 W. Singleton Blvd.
Grand Prairie, TX 75212
(972) 263-2251

*Please note: Persons with disabilities who plan to attend the Region C Water Planning Group meeting — and who may need auxiliary aids or services such as mobility assistance, interpreters for deaf or hearing-impaired persons, readers, large print, or Braille — are requested to contact Lee Shaffer in the TRA Central Wastewater Treatment Plant at (972) 263-2251 at least five (5) work days prior to the meeting so that appropriate arrangements can be made.

Members of the public interested in attending the RCWPG's public meetings must now provide government-issued identification to authorized personnel prior to entering the plant site. Please be sure extra time is allotted for this security check. No person will be allowed to enter the facility without proper identification.

For more information about the Region C Water Planning Group, contact:

Kevin Ward
RCWPG Secretary
Trinity River Authority
P.O. Box 60, Arlington, TX 76004
Phone: 817-493-5100
E-mail: wardk@trinityra.org

To receive this newsletter, send your name plus an e-mail and/or mailing address to Colby Walton at colby@cookseypr.com or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Amy Kaarlela with Freese & Nichols at adk@freese.com.

2016 Water Plan Draft Nears Completion

The Region C Water Planning Group (RCWPG) is entering the final stages of analyzing potential water management strategies to meet the North Central Texas region's long term water supply needs, and developing a draft version of its 2016 Region C Water Plan.

With this first draft nearly completed, now is the time for the public to take notice and provide its input, before the plan is finalized later this year!

Beyond its analysis of strategies for potential inclusion as recommended water management strategies in the draft 2016 plan, the Planning Group has already made significant progress on other areas of the plan.

The RCWPG previously approved **Chapters 1 and 2** of the draft plan, including a description of the region and long-term population and water demand projections. **Chapter 3** of the plan, including a summary of current regional water supplies, will be presented to the Planning Group shortly.

Chapters 4 and 5 include the recommended and alternative water management strategies, and these are the key areas on which work will be focused for the next two months. Reflecting the regional water planning process's bottom-up approach, a series of meetings has been held with the region's key wholesale water providers (WWPs) to gather their input. Also, plans are being distributed now to water user groups (WUGs) across the region – who were previously surveyed for their input – before each WUG's strategies are incorporated into Region C's draft plan.

A draft **Chapter 7** has nearly been completed and will be distributed to the Planning Group for review and input in March. A subcommittee led by RCWPG Chair Jody Puckett is currently looking at existing and potential emergency interconnects in the region, as part of Chapter 7's requirements.

Chapter 8 calls for the RCWPG to consider recommending unique stream segments, reservoir sites and legislation that may support long-term regional water planning efforts. A subcommittee led by Dr. Tom Woodward met in January and offered preliminary recommendations at the Planning Group's Jan. 26 meeting. Those include a recommendation that no unique stream segments be designated at this time in Region C – due to the uncertain ramifications of such designations – and a recommendation that the Texas Legislature continue to designate the following unique reservoir sites: Lake Ralph Hall, the Lower Bois d'Arc Creek Reservoir, Marvin Nichols Reservoir, Tehuacana Reservoir and Lake Columbia; and that it add a designation for the George Parkhouse Reservoir (North).

Other parts of the draft plan, such as **Chapter 6**, considering the impact of the recommended strategies on water quality, agricultural areas and the long-term protection of state resources, are also in development now. **Chapter 9**, focusing on the financing of the recommended strategies, will be finalized this summer after the Texas Water Development Board (TWDB) develops a survey and after the strategies are entered into the TWDB database. The recommended water management strategies will also be prioritized this fall.

Known formally as the **Initially Prepared Plan** (IPP), the draft version of the 2016 Region C Water Plan is due to the TWDB by May 1, 2015. The RCWPG is expected to meet on April 20, 2015 to review and approve the preliminary draft plan.

Subsequently, the RCWPG will host a public hearing to gather input on the IPP in June or July 2015. The date for this public hearing will be set this spring, and the public will receive at least 30 days' advance notice. Members of the public interested in attending, or in submitting comments via e-mail, can also monitor www.regioncwater.org for further updates. The TWDB and several other state agencies will also review and comment on the IPP over the summer.

Once the state agencies' and public's feedback on the IPP has been considered, the RCWPG will meet again to revise the draft plan accordingly, and to adopt a final 2016 Region C Water Plan. The final plan must be submitted to the TWDB no later than Dec. 1, 2015.

The RCWPG looks forward to the public's participation and feedback on development of the 2016 Plan!

Update on Interregional Conflict Between Regions C and D

Since the publication of the last Region C newsletter, the interregional conflict between Regions C and D over the Marvin Nichols Reservoir project has been resolved through a series of actions.

As a refresher, in May 2013, the 11th Circuit Court of Appeals affirmed a lower court ruling that the Texas Water Development Board (TWDB) violated SB 1 planning process requirements and TWDB rules by approving the 2011 water plans for Regions C and D. The lower court held that the TWDB's violation stemmed from its failure to resolve an "interregional conflict" between the two plans, relating to the Marvin Nichols Reservoir project.

The 2011 Region C Water Plan identified the Marvin Nichols Reservoir project, physically located within Region D (Northeast Texas), as a recommended water management strategy for Region C. The plan calls for the reservoir to supply nearly 490,000 acre-feet per year of water to water users in Region C and another 120,000 acre-feet yearly to Region D.

Meanwhile, in its 2011 plan, Region D indicated that the proposed reservoir's impact to timber, agriculture, the environment and other natural resources resulted in an interregional conflict that the TWDB had to resolve per the statute and the agency's own rules.

After the court decision, the TWDB engaged the State Office of Administrative Hearings (SOAH) to mediate efforts at resolving this conflict. After unsuccessful mediation in December 2013, the responsibility of resolving the conflict fell to TWDB. In August 2014, the TWDB released an interim order directing Region C to conduct an analysis and quantification of the impacts of Marvin Nichols on the agricultural and natural resources of Region D and the state.

This analysis was submitted to the TWDB in late October 2014. In December 2014, the Region D Water Planning Group submitted its written response to Region C's analysis.

After considering both groups' reports, on January 8, 2015, the TWDB met in Austin and resolved the conflict, ordering that the Marvin Nichols Reservoir should remain in Region C's 2011 plan. The TWDB further directed both Region C and Region D to revise their 2011 plans to reflect the conflict resolution process.

On Feb. 27, 2015, the Region C Water Planning Group held a public hearing in Arlington to gather public input on the proposed revision. Subsequently, on March 2, 2015, the RCWPG held a public meeting and approved the revision, thus re-adopting the 2011 Region C Water Plan with the new quantitative impact analysis included.

On March 11, 2015, the RCWPG submitted its revised 2011 plan to the TWDB for incorporation into the existing (2012) State Water Plan.

Drought and Regional Emphasis on Water Conservation Continue

As of early March, over 40 percent of Texas remained in a moderate or worse stage of drought. The current drought is now entering its fifth year, making it one of the longest-running and worst droughts in the state's recorded history.

For Region C, it is particularly important to note that the hardest-hit areas of the state include Dallas County and points to the west or northwest, with severe, extreme and exceptional drought conditions persisting up to the Red River area. The eastern portion of the North Central Texas region is also facing drought conditions, though not quite as bad.

Although recent rainfalls have helped in some areas, many of the region's lakes are still at or near all-time record low levels.

Major reservoirs in North Central Texas that are currently below 60 percent full include: Lake Bridgeport (at about 38 percent of its capacity), Eagle Mountain Lake (55 percent) and Lake Granbury (58 percent).

Unfortunately, the prognosis for near-term rainfall is uncertain. While there remains some hope for a weak El Niño weather pattern in Texas, with the potential for much-needed rain in our region, the stronger likelihood of a busy spring thunderstorm season is to our east – in East Texas, Louisiana and Arkansas.

Lake Texoma

The low reservoir levels translate into the need for drought response measures by Region C's major water suppliers. For example, in the **Tarrant Regional Water District**, system-wide reservoir storage capacity is above the Stage 2 trigger level of 60 percent. Stage 2 watering restrictions could be enacted by this summer, limiting outdoor watering with sprinklers to no more than once per week. The District currently is under Stage 1 watering restrictions, limiting outdoor watering with sprinklers to twice weekly.

Dallas Water Utilities' system-wide reservoir levels are currently above the Stage 1 trigger level of 65 percent. Stage 1 of the City's Drought Contingency Plan could be triggered as early as this spring. It would continue the mandatory maximum twice per week watering schedule already in place as part of the water conservation ordinance enacted in 2012, and would add enhanced enforcement efforts, prohibit recreational run-off and restrict washing of vehicles to commercial car washes or with a hose equipped with an automatic shut-off nozzle.

The North Texas Municipal Water District is currently in Stage 3 of its seasonal watering restrictions, which limit landscape watering with sprinklers or irrigation systems to once every two weeks through March 31, 2015 and restrict watering from 10 a.m. to 6 p.m. Stage 3 drought response measures are typically triggered when major supplies such as Lake Lavon and Jim Chapman (Cooper) Lake are at or below 45 percent capacity. Restrictions could be extended beyond the seasonal limitations, as the typically drier summer months approach.

Numerous other North Texas water suppliers are also taking extra steps to make better use of existing water supplies. For example, the **City of Fort Worth** is planning to install advanced metering infrastructure, including automated leak detection, replacement of old meters and retrofitting of existing meters, as part of being a good steward of existing water supplies. The City of Fort Worth recently submitted an application for $76 million in State Water Implementation Fund for Texas (SWIFT) funding to the Texas Water Development Board, to support this project.

Additionally, the **City of Bedford** has applied for $90 million in SWIFT funding, to help the City conserve water in its distribution network through leak repairs, replacement of approximately 75 percent of the existing water mains and replacement of old meters with an automatic meter reading system.

To better use existing resources and address the demand for additional water supplies, Dallas Water Utilities and the Tarrant Regional Water District (TRWD) are partnering to design, build, and operate a raw water infrastructure. By sharing resources, the **Integrated Pipeline Project** (IPL) will save an estimated $500 million in capital expenses and potentially $1 billion in energy savings over the life of the project. $140 million is currently begin sought in SWIFT funding to help advance this project.

Once completed, the IPL will extend 150 miles from Lake Palestine to Lake Benbrook with connections to Cedar Creek and Richland-Chambers Reservoirs. It will integrate the TRWD and Dallas systems to deliver a combined 350 million gallons per day (MGD) of raw water to the area to provide operational flexibility and drought protection for the more than 5 million people living in the respective service areas.

Major Reservoirs For Region C Water Supply
*Levels as of 3/12/15

Reservoir	Percent Full*
Arlington	88.8
Benbrook	72.9
Bonham	91.1
Bridgeport	38.1
Cedar Creek	96.3
Eagle Mountain	55.2
Fork	84.3
Grapevine	64.5
Jim Chapman (Cooper)	65.0
Joe Pool	100.0
Lavon	65.2
Lewisville	76.3
Livingston	100.0
Navarro Mills	100.0
Palestine	100.0
Ray Hubbard	72.3
Ray Roberts	76.8
Richland-Chambers	72.0
Tawakoni	70.7
Texoma	87.7
Worth	69.7

These measures are all critically important. Yet they are only part of the larger effort to ensure North Central Texas residents and businesses have enough water for the long-term.

As we have noted in previous newsletters, water conservation and reuse are an enormous part of Region C's long-term water management strategy. The 2011 Region C Water Plan calls for conservation and reuse together to account for 23 percent of the region's available water supplies, and the 2016 plan will likely devote a similar or even larger focus to water conservation and reuse strategies.

With only one-quarter of the state's population, Region C currently expects to develop 40 percent of the state's conservation- and reuse-related water supplies over the next 50 years. Those figures may continue to go up as subsequent regional water plans are developed, based on current trends.

For water conservation tips and more information, visit www.savetexaswater.org or www.wateriq.org.

Zebra Mussels Pose Threat to Water Supplies

(SOURCE: Texas Parks & Wildlife Department and www.TexasInvasives.org)

Zebra mussels are a small, destructive invasive species that can spread across Texas by hitching a ride on boats and trailers. Zebra mussels can cause tremendous environmental and economic damage – hurting aquatic life, damaging boats, hindering water recreation and even threatening water supplies.

The reason zebra mussels form a threat to water supplies is that they can colonize inside pipelines, restricting the flow of water, and they can also cause damage to critical water intake structures. Removing them is difficult and very expensive, further increasing the cost of water. Permanently eradicating them is currently impossible.

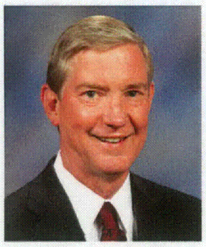
The presence of zebra mussels in Lake Texoma, and restrictions against interstate transport of invasive species, was the reason that nearly 30 percent of the North Texas Municipal Water District's water supplies were unavailable to North Texas from 2009 until last year, when the NTMWD completed a new $300 million pipeline directly to its Wylie Water Treatment Plant.

To date, zebra mussels have been detected in the following nearby lakes: Texoma, Ray Roberts, Lewisville, Bridgeport, Lavon, Waco and Belton. They have also been found on isolated occasions in the Red River below Lake Texoma, the Elm Fork of the Trinity River below Lake Ray Roberts, and in Sister Grove Creek. Additionally, a boat with zebra mussels attached was found in Lake Ray Hubbard.

To prevent the further spread of this species, Texans are strongly encouraged to clean, drain and dry their boats, trailers and gear before entering another body of water. It's not only important to do so – it's also the law in Texas!

For more information and tips about controlling this invasive species, see www.TexasInvasives.org.

Planning Group Recognizes Departing Chair, Elects New Officers, Member



Jim Parks

The Region C Water Planning Group (RCWPG) recently experienced a transition in leadership, for the first time in more than a dozen years. In December 2002, **Jim Parks**, then executive director of the North Texas Municipal Water District (NTMWD), assumed the position of RCWPG chair. With his recent retirement after a 35-year career at the NTMWD, Parks also indicated his intention to step down from his RCWPG position at the end of 2014.

During his tenure as RCWPG chair, Parks led the planning group in the development of the 2006 and 2011 Region C Water Plans, and through a substantial portion of the current effort to develop a 2016 Region C Water Plan. He was a guiding voice in promoting the development of a sound, long-term water plan for the benefit of the entire North Central Texas region, and he ably served as a representative of Water Districts on the planning group.

Parks also demonstrated visionary leadership and contributed immeasurably to the cause of water conservation and reuse statewide through his promotion of the Water IQ public awareness and water conservation program, service on the Texas Water Smart Coalition Steering Committee and service on the state's Water Conservation Implementation Task Force.

In recognition of significant efforts to ensure that North Central Texas residents and businesses would have a safe, plentiful water supply for many decades to come, the RCWPG formally adopted and presented a resolution honoring Parks at its January 26, 2015 meeting.

Jody Puckett

Succeeding Parks as RCWPG chair is **Jody Puckett**, who previously served as the organization's vice chair and who represents Municipalities on the Planning Group. Puckett is director of Dallas Water Utilities and also serves on the board of the Water Research Foundation.

Russell Laughlin

Additionally, the Planning Group recently elected as vice chair **Russell Laughlin**, who represents Industry on the Planning Group and who is a senior vice president at Hillwood Properties in Fort Worth. Laughlin also currently serves as president of the Northern Trinity Groundwater Conservation District Board.

Kevin Ward

The group's newly elected Secretary is **Kevin Ward**, general manager of the Trinity River Authority (TRA), who represents River Authorities on the Planning Group. Prior to joining TRA four years ago, Ward served as executive administrator of the Texas Water Development Board (TWDB) for nine years.

Thomas W. Kula

The Planning Group also recently elected **Thomas W. Kula** as a new member representing Water Districts, replacing the departing Parks. Kula was named last year as the new executive director of the NTMWD. Formerly a brigadier general in the U.S. Army Corps of Engineers (USACE), and most recently commander of USACE's Southwestern Division, Kula retired from the U.S. Army after 32 years of service.

Two Major Reservoirs Poised to Move Forward

It has been 30 years since a major reservoir was developed in North Central Texas. With the region's population continuing to grow rapidly and with drought putting further strains on existing water supplies, new reservoirs are sorely needed.

Fortunately, two significant reservoirs included as recommended water management strategies in the 2011 Region C Water Plan, and in previous regional plans, are now closer to becoming a reality.

The **Lower Bois d'Arc Creek Reservoir** is one of those important supply strategies, for which the North Texas Municipal Water District (NTMWD) is currently seeking approval. The lake is critical to meeting the future water needs of NTMWD's rapidly growing customer population – which is expected to double over the next 20-30 years.

The proposed reservoir, which would be located in Fannin County just northeast of Bonham, would cover an area of 16,526 acres and would eventually supply 123,000 acre-feet of water annually to Fannin County and NTMWD's members and customers. Its estimated total cost, including a water treatment plant and associated pipelines, is $992 million.

Two major permits are required before construction of the Lower Bois d'Arc Creek Reservoir can begin: a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (USACE), and a water rights permit from the Texas Commission on Environmental Quality (TCEQ).

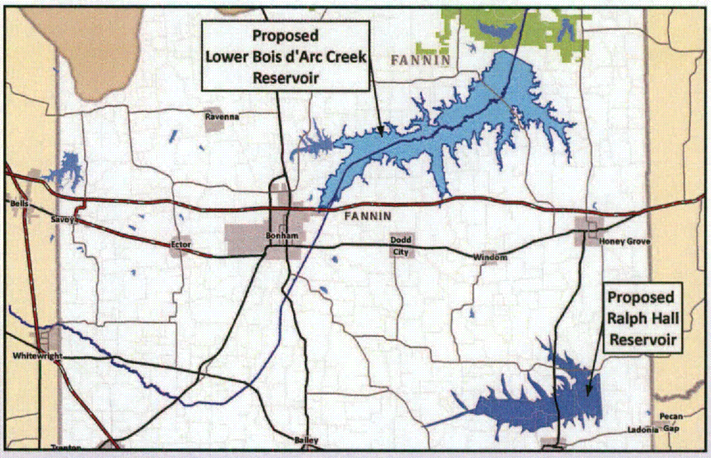
The NTMWD submitted its CWA Section 404 permit application in June 2008, and the Environmental Impact Statement (EIS) determination process began in 2009, including public meetings in Dec. 2009. The draft EIS was published on February 20, 2015.

The NTMWD submitted its water rights permit application to the TCEQ in December 2006, and it was deemed administratively complete in June 2007. A contested case hearing on the application is scheduled to be heard on July 6-15, 2015, by administrative law judges appointed by the State Office of Administrative Hearings.. A decision on the permit could be issued later this year.

To date, over 80 percent of the property required for the reservoir has been acquired, and land and easements acquisitions could be completed in 2015. If approved, dam and reservoir construction is currently expected to take place from 2016 – 2018, with water treatment plant and pipeline construction taking place from 2017-2020.

If all goes according to schedule, the reservoir could be delivering water by 2020 or 2021.

Also, in 2013, after a 10-year approval process, the TCEQ approved a permit to build **Lake Ralph Hall**, a 12,000-acre reservoir on the North Sulphur River in Fannin County that would supply up to 34,050 acre-feet of water annually to customers of the Upper Trinity Regional Water District, chiefly in Denton County. The UTRWD also plans to apply for the right to reuse return flows from the project, providing for approximately 18,000 acre-feet of additional water supplied annually through indirect water reuse. Together, the reservoir and the associated reuse project are expected to cost about $286 million.



The reservoir's TCEQ permit approval is now the subject of pending litigation by project opponents, and the CWA Section 404 permit approval is also still pending.

In the 2011 Region C Water Plan, Lake Ralph Hall was expected to be online by 2020, helping to meet the needs of the rapidly growing area served by the UTRWD. Currently, UTRWD officials hope to have the reservoir online by 2025-2030.

The history of both reservoirs' planning and permitting underscores the long time horizon associated with development of any major new water supplies in Region C, and demonstrates the importance of planning now for the future water needs of North Texas residents and businesses.

About the Region C Water Planning Group

Region C is made up of all or part of 16 counties in North Central Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups chosen by the Texas Water Development Board (TWDB) to develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jody Puckett	Chair	Municipalities	*Rob Riley*	Member	Environment
Russell Laughlin	Vice Chair	Industry	*Drew Satterwhite*	Member	Water Districts
Kevin Ward	Secretary	River Authority	*Bob Scott*	Member	Environment
David Bailey	Member	GMA 12*	*Gary Spicer*	Member	Electric Generating Utilities
Bill Ceverha	Member	Public	*Connie Standridge*	Member	Water Utilities
S. Frank Crumb	Member	Municipalities	*Jack Stevens*	Member	Water Districts
Gary Douglas	Member	GMA 11*	*Dr. Tom Woodward*	Member	Agriculture
James Hotopp	Member	Municipalities	*Curtis Campbell*	Non-Voting Member	Region B
Tom Kula	Member	Water Districts	*Alva Cox*	Non-Voting Member	Brazos G RWPG
Dr. Thomas La Point	Member	Public	*Darrell Dean*	Non-Voting Member	Texas Dept. of Agriculture
Harold Latham	Member	GMA 8*	*Mike Harbordt*	Non-Voting Member	Region I
G. K. Maenius	Member	Counties	*Sharon Nabors*	Non-Voting Member	Region D
Howard Martin	Member	Municipalities	*Connie Townsend*	Non-Voting Member	Texas Water Development Board
Jim McCarter	Member	Water Utilities	*Adam Whisenant*	Non-Voting Member	Texas Parks & Wildlife Dept.
Steve Mundt	Member	Small Business			

**GMA = Groundwater Management Area*

REGION C
Water Planning for North Texas
5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Collin
Cooke
Dallas
Denton
Ellis
Fannin
Freestone
Grayson
Henderson
Jack
Kaufman
Navarro
Parker
Rockwall
Tarrant
Wise

REGION C

Water Planning for North Texas

June 2015 Newsletter

Planning Group Hosts Public Hearing, Accepts Comments on Initially Prepared Plan

The next Region C meeting will be a public hearing to present the Initially Prepared Plan and to solicit public feedback on the draft plan. Comments may be submitted verbally or in writing at the public hearing. Members of the public may also submit comments in writing, *no later than August 23, 2015*, to the Trinity River Authority (Region C's Administrative Agency) at their address below.

Public Hearing:
Wednesday, June 24, 2015, 7:00 p.m.
The Bob Duncan Center
2800 S. Center Street
Arlington, TX 76014
(817) 465-6661

To provide written comments on the Initially Prepared Plan, or for public hearing questions, contact:
J. Kevin Ward
Administrative Agent for Region C
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004
E-mail: regioncwpg@trinityra.org

After the public hearing, the next regularly scheduled meeting of the RCWPG:
Monday, September 28, 2015, 1:00 p.m.
TRA Central Regional
Wastewater Plant
6500 W. Singleton Blvd
Grand Prairie, TX 75212

To receive this newsletter, send your name plus an e-mail and/or mailing address to Colby Walton at colby@cookseypr.com or via fax to 972-580-0852.

Visit www.regioncwater.org for the latest updates on RCWPG activities, documents, meetings and other water planning news, or contact Amy Kaarlela with Freese & Nichols at adk@freese.com.

Region C Unveils Initially Prepared Plan for Public Review

After extensive research and evaluation of potential water management strategies over the past few years, the Region C Water Planning Group (RCWPG) recently approved a draft version of its 2016 Region C Water Plan – known formally as the Initially Prepared Plan (IPP). The draft plan provides for water management strategies to address the needs of North Central Texas' growing population, which is expected to more than double by 2070.

The draft plan now goes through a review by the public and various state agencies, before adoption as a final Regional Water Plan later this year. The IPP is available for public review on the Region C website, www.regioncwater.org, and it is also available in each county clerk's office and at least one public library in each of Region C's 16 counties (see website for a complete list).

On the evening of **Wednesday, June 24, 2015**, the RCWPG will host a public hearing at the Bob Duncan Center in Arlington, where public comments on the draft plan will be accepted. For more information about this hearing and how to submit comments, see the sidebar at left.

The following article provides an overview of the IPP, to assist the public with navigating its contents prior to the public hearing and the end of the public comment period.

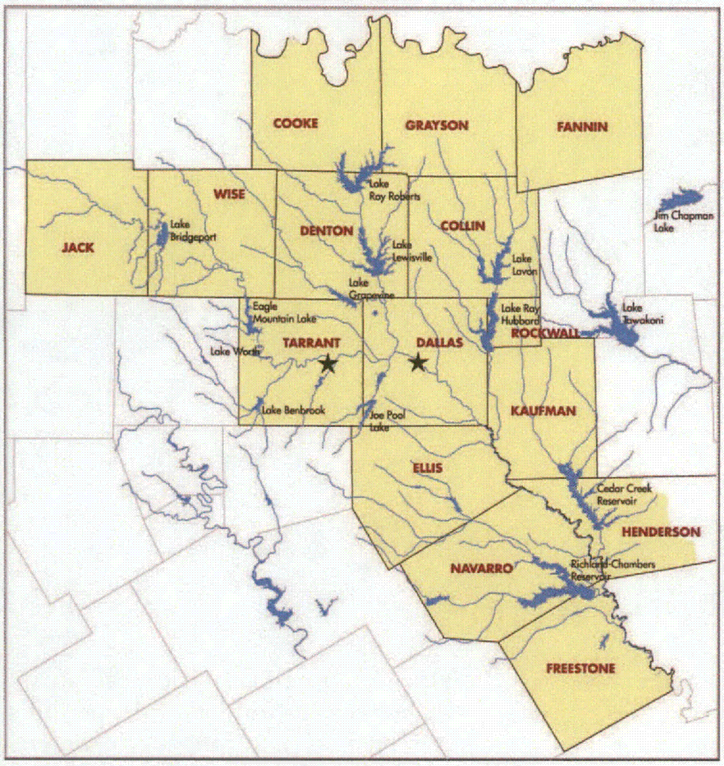
The first section of the IPP is an **Executive Summary**, which provides a concise overview of the 11 chapters in the draft plan. For many readers, this summary – at fewer than 30 pages – will be a good way to see the big picture of the overall plan.

Chapter One of the IPP provides a description of Region C, covering topics such as the region's economic activity, physical features, water suppliers, current water uses and demand centers, and various other water-related issues. It is worth noting that the region covers all or part of 16 counties in North Central Texas, with most of Region C in the upper portion of the Trinity River Basin, although there are smaller parts in the Red, Brazos, Sulphur and Sabine River Basins.

Key Dates in the Region C Water Planning Process:

April 20, 2015	Region C Water Planning Group adopted Initially Prepared Plan (IPP)
May 1, 2015	Initially Prepared Plan submitted to Texas Water Development Board (TWDB)
June 24, 2015	Public hearing in Arlington on IPP
August 23, 2015	Public comment period ends (60 days after public hearing)
September 22, 2015	Comments on IPP due from state agencies (90 days after public hearing)
December 1, 2015	Final 2016 Region C Water Plan due to TWDB
December 1, 2015	Prioritized list of projects from 2016 Region C Water Plan due to TWDB
2017 (date TBD)	2017 State Water Plan published by TWDB

Map of Region C



Most of North Central Texas' water supply comes from 34 major reservoirs in the region, as well as some other reservoirs outside of Region C. About 90 percent of the water demand in Region C is met by surface water (reservoirs), but groundwater can be an important source of supply, too, especially in rural areas. Aquifers in the region include the Trinity, Woodbine, Carrizo-Wilcox, Nacatoch and Queen City. Reclamation of wastewater for water reuse purposes is rapidly increasing in Region C, and water reuse is planned to be a significant source of future water supplies for the region.

Total regional water use in the year 2011 was just over 1.5 million acre-feet. It is interesting to note that Region C, with over 25 percent of Texas' population, had only 8.3 percent of the state's water use in 2011. About 90 percent of current water use in Region C is for municipal supply – meaning residential, non-industrial commercial/retail and institutional water uses.

Chapter Two includes population and demand projections for the region through 2070. The population of Region C is projected to grow from nearly 6.5 million in the year 2010 to just over 9.9 million in 2040 and over 14.3 million by 2070. Dry-year water demands in Region C are expected to reach 2.2 million acre-feet per year by 2040, and 2.9 million acre-feet per year by 2070, largely due to population growth.

One of the biggest changes in this IPP, compared to the previous plan, is in the calculation of long-term water demands. In the *2011 Region C Water Plan*, projected water demands averaged about 200 gallons per capita daily (gpcd). For the 2016 plan, Region C is now using noticeably lower per capita demands: averaging 165 gpcd before conservation and reuse strategies have been implemented. This change is attributable to several factors, including: significant progress in water conservation region-wide; use of a different base year for calculations of projected demands (the gpcd figure is now derived from year 2011 data, which wasn't as dry a year as the previous base year); and the expectation that Region C entities with lower gpcd figures will grow faster than some entities with higher gpcd figures.

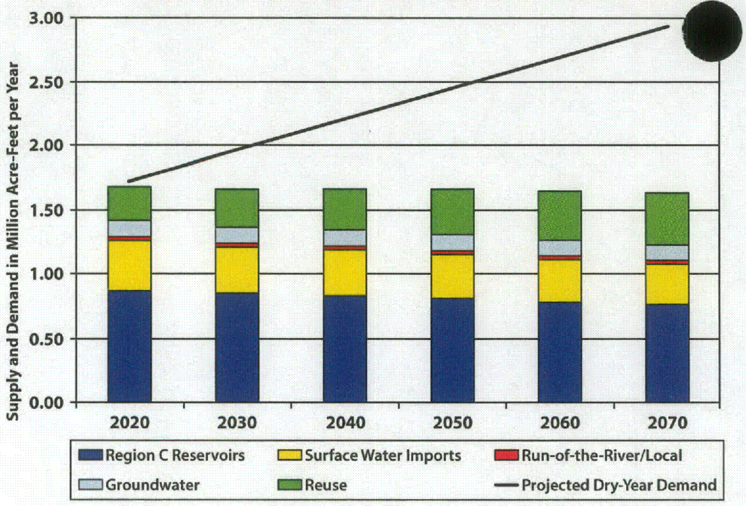
Employing this newer figure reduces the overall projected regional water demand by 590,000 acre-feet annually in 2060, compared to the projections in the 2011 plan (note that a side-by-side comparison for year 2070 projected demands is possible, as the *2011 Region C Water Plan* only covered up to the year 2060).

Chapter Three gives an overall summary of the water supplies currently available to Region C. Without new water sources, currently available supplies will remain almost constant over time at 1.7 million acre-feet per year, as sedimentation in reservoirs is offset by increases in reuse supplies due to increased return flows.

Chapter Four identifies water needs in Region C, based on the comparison of currently available water supplies and projected demands over time. With the projected 2070 demand of 2.9 million acre-feet per year, the region projects a shortage of 1.2 million acre-feet per year by 2070 – which is why planning and development of new water management strategies is so critical.

Chapter Five deals with the identification, evaluation and selection of water management strategies. This section is perhaps most of interest to the public, as it outlines what Region C specifically plans to do, in terms of new water strategies, in order to meet future demands.

Figure ES.3 Comparison of Currently Available Supplies and Projected Demands



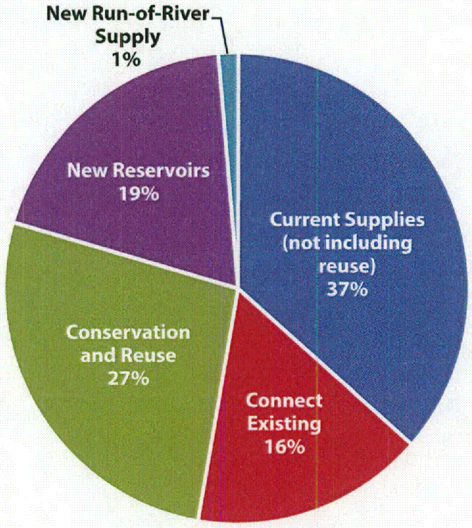
The Region C Water Planning Group identified and evaluated a wide variety of potentially feasible water management strategies in developing its plan. It then evaluated the water management strategies based on a number of factors:

- Quantity, reliability and cost of water delivered and treated
- Environmental factors
- Impacts on other water resources and on threats to agricultural and natural resources
- Other factors deemed relevant by the planning group (including consistency with the plans of other water providers in the region)
- Consideration of interbasin transfer requirements and third-party impacts of voluntary water redistributions

The major recommended water management strategies for Region C are listed in the sidebar. Major strategies are those supplying over 60,000 acre-feet per year or involving the construction of a reservoir.

In total, the draft 2016 plan calls for water management strategies that would create 1.68 million acre-feet per year of additional water supplies, creating a total available supply of 3.31 million acre-feet per year in 2070. This supply is about 13 percent greater than the projected demand, leaving a reasonable reserve to provide for: difficulties in developing strategies in a timely manner, droughts worse than the drought of record, greater than expected growth, and supply for needs beyond this planning horizon.

Figure ES.6 Sources of Water Available to Region C as of 2070



It is worth noting that, of the supply available to the region in 2070, about 37 percent is already available from surface water and groundwater. About 27 percent of the 2070 supply would be developed from water conservation and reuse strategies, which is notable and represents perhaps the most ambitious conservation and reuse effort in the entire state.

By 2070, 16 percent of the available water supply would be created from connections to existing supply sources, and the remaining 20 percent would be from the development of new supplies, including reservoirs and run-of-river projects. The draft plan includes only five major new reservoirs, compared to more than 25 developed to supply water to Region C over the last 60 years.

The total projected cost of implementing the water management strategies in the draft plan is $21.7 billion.

Chapter Six describes the impact of the Regional Water Plan and consistency with long-term protection of water, agricultural and natural resources, including its impact on water quality, the impacts of moving water from rural and agricultural areas and impacts to third parties.

Chapter Seven details the regional drought response strategy. It includes information concerning historical droughts in the region, current drought preparations and responses, and recommendations for future, region-specific drought responses and contingency plans.

Chapter Eight provides updates related to unique stream segments, reservoir sites and legislative recommendations, which will facilitate the orderly development, management and conservation of water resources. The draft 2016 plan adds Lakes Columbia and George Parkhouse North to the list of recommended unique sites for future reservoir construction, and calls for several other legislative recommendations, including expanded eligibility for SWIFT funding.

Chapter Nine summarizes infrastructure funding recommendations. This section will be completed for the final 2016 Region C Water Plan, based on a survey to be performed by the Texas Water Development Board.

Chapter Ten describes the plan approval process and options that have been provided, or will be provided, in order to inform the public and encourage them to participate in the planning process.

Chapter Eleven is one of the new requirements for the 2016 Regional Water Plans. This chapter details the implementation of the 2011 plan and provides a comparison between that plan and the new, draft 2016 plan.

Since the development of the last (2011) Region C Water Plan, changes that have occurred include:

- Implementation of 29 water management strategies called for in the earlier plan
- 252 water management strategies in the previous plan are no longer being considered by regional WWPs or WUGS (many of which pertain to supplemental wells)
- Overall projected water demands have decreased (as detailed above)
- Total available supplies have decreased
- Overall projected water needs have decreased (as detailed above)
- The total cost for implementation of the recommended strategies is similar

The Region C Water Planning Group appreciates the public's attention to the draft plan, and looks forward to receiving and considering comments, whether provided at the June 24 public hearing or through mailed/e-mailed submissions.

Table ES.1
Recommended Major Water Management Strategies for Region C

Strategy	Supplier	Supply in 2070 (Ac-Ft/Yr)	Supplier Capital Cost
Conservation	Multiple	135,991	$262,889,616
Reuse Implementation (Main Stem Trinity River)	Dallas	149,093	$718,944,000
Connect Lake Palestine	Dallas	110,670	$887,955,000
Sulphur Basin Supplies	TRWD	280,000	$2,830,288,000
	NTWMD	87,400	$1,097,994,000
	UTRWD	35,000	$284,157,000
Lower Bois d'Arc Creek Reservoir	NTWMD	120,200	$625,610,000
Toledo Bend	NTWMD	100,000	$915,266,000
Cedar Creek Wetlands (Reuse)	TRWD	88,059	$202,623,000
Lake Texoma blending	NTWMD	67,000	$375,697,000
Lake Columbia	Dallas	56,050	$351,756,000
Lake Ralph Hall and Associated Reuse	UTRWD	50,121	$311,388,000
Oklahoma	NTWMD	50,000	$167,541,000
Neches Run-of-River	Dallas	47,250	$226,790,000
Lake Tehuacana	TRWD	41,600	$742,730,000
Lake Texoma Desalination	GTUA	41,076	$142,222,000

SWIFT Funding Applications Move Forward

In November 2013, Texas voters overwhelmingly indicated their support for water project financing, approving the appropriation of $2 billion from the state's economic stabilization fund (a.k.a. the Rainy Day Fund) to establish a revolving fund that will help pay for water and conservation projects in the State Water Plan. Over the next 50 years, the $2 billion will be leveraged with revenue bonds to finance approximately $27 billion in water supply projects.

This fund, the State Water Implementation Fund for Texas (SWIFT), is now close to providing its first round of financial assistance, helping to jump-start a wide variety of water projects statewide. On May 6, 2015, the Texas Water Development Board (TWDB) approved its first-ever project prioritization list for SWIFT financing.

The applicants' original, abridged applications requested $1.07 billion in the first year for the initial round of 39 water supply projects, and will require more than $4 billion in financial assistance over the next decade. After determining that SWIFT has the capacity to support all 39 eligible applications, the TWDB has requested detailed funding applications from project sponsors by June 5, 2015.

Projects from Region C that are on the prioritized list for this first round of SWIFT funding include:

- **Integrated Pipeline Project** (Dallas Water Utilities and Tarrant Regional Water District): Eligible for a combined $440 million, as part of a project that will connect Lake Palestine to Dallas' system as well as bring additional TRWD supplies to Lake Benbrook, providing over 290,000 acre-feet per year of additional water supply to the region.
- **Lower Bois d'Arc Creek Reservoir** (North Texas Municipal Water District) – Eligible for more than $124 million for mitigation and relocation costs, as well as an additional $4 million for property acquisition that will be used to build a pipeline from the reservoir to the Leonard Water Treatment Plant. This reservoir will supply over 120,000 acre-feet per year of water to the region.
- **Lake Ralph Hall** (Upper Trinity Regional Water District): Eligible for $44 million in funding to support development of a new reservoir that will supply about 34,000 acre-feet per year of water to the UTRWD, Fannin County and surrounding areas, plus an additional 18,000 acre-feet per year of new supplies through indirect water reuse.
- **Advanced Metering Infrastructure** (City of Fort Worth) – Approved for $76 million in upgrades for automated leak detection, replacement of old meters and retrofitting of remaining meters.

Other Region C projects that are up for consideration include: new wells and appurtenances, land acquisition, water treatment expansion, additional pipelines and water distribution conservation programs.

The state will begin accepting abridged applications for the second round of SWIFT funding in the Winter 2015-Spring 2016 timeframe.

GMA 8 Making Progress on New Model Runs

As discussed in the November 2014 Region C newsletter, Groundwater Management Area 8 (GMA 8) – which covers almost all of Region C – has been working on an update to its Northern Trinity/Woodbine Groundwater Availability Model (or GAM) since early 2012. The new model will play a critical role in helping GMA 8 to set desired future conditions in Region C's major aquifers, and to determine how much groundwater can be considered "available" for purposes of future regional water planning.

Since selecting INTERA, Inc. in March 2015 as its consultant to conduct model runs based on the newly developed GAM, GMA 8 set a plan – in partnership with its groundwater conservation districts (GCDs) – to perform two model runs in order for the GCDs in GMA 8 to understand the hydrologic impacts of different predictive groundwater availability scenarios. These runs, titled GAM Run 5 and GAM Run 6, will be completed by September 2015. GMA 8 also plans to conduct additional model runs at some point in the future.

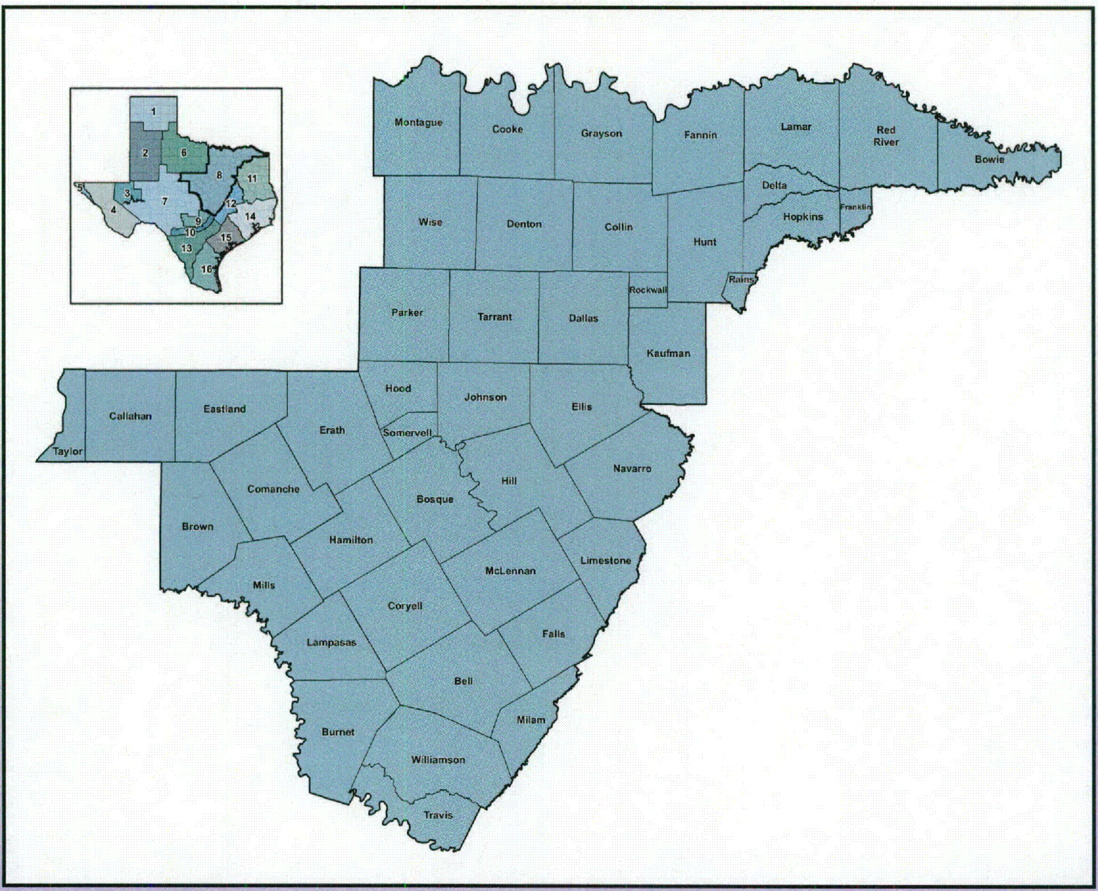
GAM Run 5 will incorporate revised groundwater pumping numbers from 2010, and employ the new GAM to provide detailed information, giving a more accurate reflection of actual pumping impacts in the Northern Trinity and Woodbine aquifers. This run will allow GCDs to refine their pumping inputs from 2010, which is the base year for all runs going forward.

GAM Run 6 is essentially four predictive simulations. These four runs will apply varying percentages (70%, 130%, 160% and 190%) of the baseline pumping through 2070. This should provide GMA 8 participants with several snapshots of aquifer conditions under a wide range of pumping conditions.

Also included with the INTERA contract is additional coding that will give more information than the first four GAM runs. The added coding will provide information on the impact to existing wells, which will provide more practical information to make decisions.

For more information on GMA 8 and the new model runs, see http://www.gma8.org.

Groundwater Management Area 8



About the Region C Water Planning Group

Region C is made up of all or part of 16 counties in North Central Texas: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant and Wise.

The Region C Water Planning Group (RCWPG) is one of 16 regional water planning groups chosen by the Texas Water Development Board (TWDB) to develop and revise a comprehensive state water plan for Texas through 2070. Each water planning group is responsible for preparing and adopting a regional water plan for its area. The RCWPG is made up of 22 members representing 12 different interest groups.

Jody Puckett	Chair	Municipalities
Russell Laughlin	Vice Chair	Industry
Kevin Ward	Secretary	River Authority
David Bailey	Member	GMA 12*
Bill Ceverha	Member	Public
Gary Douglas	Member	GMA 11*
James Hotopp	Member	Municipalities
Tom Kula	Member	Water Districts
Harold Latham	Member	GMA 8*
G. K. Maenius	Member	Counties
Howard Martin	Member	Municipalities
Jim McCarter	Member	Water Utilities
Steve Mundt	Member	Small Business
Rob Riley	Member	Environment
Drew Satterwhite	Member	Water Districts
Bob Scott	Member	Environment
Gary Spicer	Member	Electric Generating Utilities
Connie Standridge	Member	Water Utilities
Jack Stevens	Member	Water Districts
Dr. Tom Woodward	Member	Agriculture
Curtis Campbell	Non-Voting Member	Region B
Alva Cox	Non-Voting Member	Brazos G RWPG
Darrell Dean	Non-Voting Member	Texas Dept. of Agriculture
Mike Harbordt	Non-Voting Member	Region I
Sharon Nabors	Non-Voting Member	Region D
Connie Townsend	Non-Voting Member	Texas Water Development Board
Adam Whisenant	Non-Voting Member	Texas Parks & Wildlife Dept.

**GMA = Groundwater Management Area*
***There are currently two vacancies on the Planning Group, due to the recent resignations of Frank Crumb and Dr. Thomas La Point.*

REGION C
Water Planning for North Texas
5525 N MacArthur Blvd.
Suite 530
Irving, TX 75038

Appendix U

APPENDIX U

DATABASE 17 REPORTS

APPENDIX U

DATABASE 17 REPORTS

The Texas Water Development Board (TWDB) requires the Regional Water Plans to include summary tables based on information from the TWDB online planning database (DB17). These tables are included in this appendix (or other appendices as noted below) and reflect the most current information in the database at the time of the printing of this report. Due to limitations associated with DB17, Region C desires the opportunity to review the DB17 data and make subsequent adjustments in cases where there is a significant difference between DB17 and this paper plan, should the need arise in the future. These adjustments should be allowed without TWDB requiring an errata or amendment to the plan. There may be slight numerical differences between DB17 and this printed regional water plan due to rounding associated with the regional water plan preparation and online data entry. In any instances where numbers in the regional water plan and the online planning database differ by an inconsequential amount, the data in the online planning database (DB17) shall take precedence over the associated number in the regional water plan for the purpose of development of the State Water Plan and for the purposes of TWDB financing through the State Water Implementation Fund for Texas (SWIFT) fund.

The sixteen DB17 reports provided by TWDB that are required to be included in this Plan are listed below and are contained in this Appendix unless otherwise noted.

- Water User Group Population (See Appendix F, Pages F.14 through F.24)
- Water User Group Demand (See Appendix G, Pages G.20 through G.32)
- Existing Water Supply by Water User Group (See Appendix J)
- Water User Group Category Summary
- Water Management Strategy Water User Group- Recommended
- Water Management Strategy Water User Group- Alternative
- Water Management Strategy Project - Recommended
- Water Management Strategy Project - Alternative
- Source Availability
- Source Balance
- Water User Group Management Supply Factor
- Water User Group Needs and Surplus
- Water User Group Second Tier Needs
- Water User Group Second Tier Needs Summary
- Water User Group Unmet Needs
- Water User Group Unmet Needs Summary

In addition to the above DB17 reports provided by TWDB, an additional table was required by TWDB that was originally intended to be generated by DB17. Limitations of DB17 prevented this information from being produced by TWDB so each region was required to generate this table based on selected information from various DB17 reports and other sources. This table is the "Wholesale Water Provider Demand and Needs/Surplus by Basin and County" and is included at the end of this appendix.

Water User Group (WUG) Category Summary

REGION C	2020	2030	2040	2050	2060	2070
MUNICIPAL						
POPULATION	7,244,036	8,385,767	9,634,148	10,834,901	12,075,269	13,289,936
DEMANDS (acre-feet per year)	1,443,307	1,637,888	1,856,727	2,063,274	2,267,644	2,462,872
EXISTING SUPPLIES (acre-feet per year)	1,345,816	1,327,326	1,325,975	1,329,509	1,323,637	1,307,883
NEEDS (acre-feet per year)*	(105,693)	(316,332)	(534,902)	(737,021)	(947,062)	(1,158,340)
COUNTY-OTHER						
POPULATION	260,164	262,958	274,424	425,356	667,014	1,057,976
DEMANDS (acre-feet per year)	38,223	37,497	37,995	56,539	85,174	131,961
EXISTING SUPPLIES (acre-feet per year)	44,353	41,319	39,744	45,804	52,118	62,345
NEEDS (acre-feet per year)*	(1,025)	(2,952)	(4,281)	(13,976)	(34,635)	(69,616)
MANUFACTURING						
DEMANDS (acre-feet per year)	79,540	87,958	96,154	103,307	107,899	112,839
EXISTING SUPPLIES (acre-feet per year)	80,120	78,335	75,761	74,430	71,220	68,476
NEEDS (acre-feet per year)*	(2,649)	(11,322)	(20,899)	(29,076)	(36,694)	(44,363)
MINING						
DEMANDS (acre-feet per year)	38,858	35,311	33,662	36,483	39,308	43,739
EXISTING SUPPLIES (acre-feet per year)	36,789	31,308	28,003	28,065	28,028	28,178
NEEDS (acre-feet per year)*	(6,204)	(5,756)	(7,089)	(9,635)	(12,198)	(15,956)
STEAM ELECTRIC POWER						
DEMANDS (acre-feet per year)	71,452	94,176	106,033	113,641	124,001	135,443
EXISTING SUPPLIES (acre-feet per year)	75,943	74,105	72,935	71,328	70,581	69,520
NEEDS (acre-feet per year)*	(9,006)	(30,361)	(36,336)	(44,038)	(55,098)	(67,549)
LIVESTOCK						
DEMANDS (acre-feet per year)	18,778	18,778	18,778	18,778	18,778	18,778
EXISTING SUPPLIES (acre-feet per year)	20,833	20,833	20,833	20,833	20,833	20,833
NEEDS (acre-feet per year)*	0	0	0	0	0	0
IRRIGATION						
DEMANDS (acre-feet per year)	33,167	33,383	33,599	33,815	34,032	34,248
EXISTING SUPPLIES (acre-feet per year)	46,373	46,098	45,785	45,465	45,213	45,011
NEEDS (acre-feet per year)*	(460)	(484)	(509)	(526)	(539)	(548)
REGION TOTALS						
POPULATION	7,504,200	8,648,725	9,908,572	11,260,257	12,742,283	14,347,912
DEMANDS (acre-feet per year)	1,723,325	1,944,991	2,182,948	2,425,837	2,676,836	2,939,880
EXISTING SUPPLIES (acre-feet per year)	1,650,227	1,619,324	1,609,036	1,615,434	1,611,630	1,602,246
NEEDS (acre-feet per year)*	(125,037)	(367,207)	(604,016)	(834,272)	(1,086,226)	(1,356,372)

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Category Summary report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the Needs totals.

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Primary Region: C

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ABLES SPRINGS WSC	C	CONSERVATION - ABLES SPRINGS WSC	DEMAND REDUCTION	1	3	5	8	12	17	$0	$0
ABLES SPRINGS WSC	C	CONSERVATION, WATER LOSS CONTROL - ABLES SPRINGS WSC	DEMAND REDUCTION	2	2	0	0	0	0	$1159	N/A
ABLES SPRINGS WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	13	17	25	22	20	$225	$84
ABLES SPRINGS WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	6	75	104	159	145	135	$506	$71
ABLES SPRINGS WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	15	23	22	17	1	0	$153	N/A
ABLES SPRINGS WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	59	N/A	$509
ABLES SPRINGS WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	34	53	84	80	N/A	$1315
ABLES SPRINGS WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	82	119	N/A	$955
ABLES SPRINGS WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	3	5	5	3	$19	$0
ABLES SPRINGS WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	78	N/A	$640
ABLES SPRINGS WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	28	26	N/A	[illegible]
ADDISON	C	CONSERVATION - ADDISON	DEMAND REDUCTION	80	154	247	313	387	468	$38091	$68500
ADDISON	C	CONSERVATION, WATER LOSS CONTROL - ADDISON	DEMAND REDUCTION	30	30	0	0	0	0	$90923	N/A
ADDISON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	169	182	388	1,239	1,462	1,576	$153	$221
ADDISON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	579	1,223	1,130	1,148	1,123	N/A	$515
ADDISON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	592	N/A	$483
ADDISON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	505	499	N/A	$697
ALEDO	C	CONSERVATION - ALEDO	DEMAND REDUCTION	3	8	19	27	33	40	$0	$0
ALEDO	C	CONSERVATION, WATER LOSS CONTROL - ALEDO	DEMAND REDUCTION	4	4	0	0	0	0	$1831	N/A
ALEDO	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	116	213	179	140	95	N/A	$0
ALEDO	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	246	0	N/A	N/A
ALEDO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	379	N/A	$1061
ALEDO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	60	111	128	N/A	$1061
ALEDO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	23	60	45	53	35	N/A	$157
ALEDO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	5	15	14	21	46	N/A	$157
ALEDO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	59	171	256	200	160	N/A	[illegible]
ALEDO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	81	141	65	75	N/A	$149
ALLEN	C	CONSERVATION - ALLEN	DEMAND REDUCTION	660	851	1,002	1,048	1,113	1,180	$218040	$203040

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ALLEN	C	CONSERVATION, WATER LOSS CONTROL - ALLEN	DEMAND REDUCTION	103	103	0	0	0	0	$99762	N/A
ALLEN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	200	442	475	558	390	276	$225	$84
ALLEN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	149	2,499	2,844	3,484	2,553	1,899	$506	$71
ALLEN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	472	788	599	384	15	0	$153	N/A
ALLEN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	836	N/A	$509
ALLEN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	936	1,161	1,493	1,120	N/A	$1315
ALLEN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1,439	1,671	N/A	$955
ALLEN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	32	73	82	98	72	52	$19	$0
ALLEN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,091	N/A	$640
ALLEN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	488	370	N/A	$640
ALVORD	C	CONSERVATION - ALVORD	DEMAND REDUCTION	0	1	2	3	4	5	N/A	$0
ALVORD	C	CONSERVATION, WATER LOSS CONTROL - ALVORD	DEMAND REDUCTION	1	1	0	0	0	0	$135	N/A
ALVORD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	40	N/A	$1061
ALVORD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	4	10	13	N/A	$1061
ALVORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	3	4	4	N/A	$157
ALVORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	1	2	4	N/A	$157
ALVORD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	1	17	18	17	N/A	$114
ALVORD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	10	6	8	N/A	$149
ALVORD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	22	0	N/A	N/A
ANNA	C	CONSERVATION - ANNA	DEMAND REDUCTION	25	48	36	64	153	276	$32034	$0
ANNA	C	CONSERVATION, WATER LOSS CONTROL - ANNA	DEMAND REDUCTION	54	163	0	0	0	0	$60683	N/A
ANNA	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	10	81	152	239	258	N/A	$84
ANNA	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	56	482	952	1,563	1,773	N/A	$71
ANNA	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	0	18	102	105	9	0	N/A	N/A
ANNA	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	780	N/A	$509
ANNA	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	151	268	772	927	N/A	$1315
ANNA	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	744	1,385	N/A	$955
ANNA	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	43	206	711	1,106	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ANNA	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	35	171	598	938	N/A	$0
ANNA	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	70	385	1,437	1,229	N/A	$0
ANNA	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	20	98	343	533	N/A	$0
ANNA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	13	27	44	48	N/A	$0
ANNA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,992	N/A	$640
ANNA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	252	306	N/A	$640
ANNETTA	C	CONSERVATION - ANNETTA	DEMAND REDUCTION	1	1	2	3	5	6	$0	$0
ANNETTA	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA	DEMAND REDUCTION	1	1	0	0	0	0	$227	N/A
ANNETTA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	90	N/A	$1061
ANNETTA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	4	14	31	N/A	$1061
ANNETTA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	7	5	3	7	8	N/A	$157
ANNETTA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	1	1	2	11	N/A	$157
ANNETTA	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	17	15	17	26	38	N/A	$114
ANNETTA	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	7	10	8	18	N/A	$149
ANNETTA	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	32	0	N/A	N/A
ANNETTA NORTH	C	CONSERVATION - ANNETTA NORTH	DEMAND REDUCTION	0	0	1	1	2	2	N/A	$0
ANNETTA NORTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
ANNETTA NORTH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	17	N/A	$1061
ANNETTA NORTH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	2	4	6	N/A	$1061
ANNETTA NORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	1	1	1	2	N/A	$157
ANNETTA NORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	1	1	3	N/A	$157
ANNETTA NORTH	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	4	9	7	7	N/A	$114
ANNETTA NORTH	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2	4	2	3	N/A	$149
ANNETTA NORTH	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	10	0	N/A	N/A
ANNETTA SOUTH	C	CONSERVATION - ANNETTA SOUTH	DEMAND REDUCTION	0	0	1	1	1	1	N/A	$0
ANNETTA SOUTH	C	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
ANNETTA SOUTH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	10	N/A	[illegible]
ANNETTA SOUTH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	3	3	N/A	$1061
ANNETTA SOUTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	1	1	1	1	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ANNETTA SOUTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	1	1	N/A	$157
ANNETTA SOUTH	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	3	5	4	4	N/A	$114
ANNETTA SOUTH	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1	2	1	2	N/A	$149
ANNETTA SOUTH	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	7	0	N/A	N/A
ARGYLE	C	CONSERVATION - ARGYLE	DEMAND REDUCTION	19	45	89	99	109	118	$16611	$34500
ARGYLE	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE	DEMAND REDUCTION	18	55	69	69	69	69	$51051	$58226
ARGYLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	11	40	178	184	151	N/A	$221
ARGYLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	36	127	163	145	108	N/A	$515
ARGYLE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	7	14	16	13	11	N/A	$0
ARGYLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	325	N/A	$837
ARGYLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	63	110	N/A	$837
ARGYLE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	43	48	39	69	N/A	$3
ARGYLE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	22	25	21	38	N/A	$0
ARGYLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	260	517	589	666	424	N/A	$80
ARGYLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	74	227	265	223	200	N/A	$80
ARGYLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	57	N/A	$483
ARGYLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	64	48	N/A	$697
ARGYLE WSC	C	CONSERVATION - ARGYLE WSC	DEMAND REDUCTION	24	38	42	45	48	51	$13998	$13998
ARGYLE WSC	C	CONSERVATION – WASTE PROHIBITION, ARGYLE WSC	DEMAND REDUCTION	6	12	12	12	12	12	$2462	$1848
ARGYLE WSC	C	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	DEMAND REDUCTION	5	5	0	0	0	0	$5900	N/A
ARGYLE WSC	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	2	27	36	31	N/A	$221
ARGYLE WSC	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	8	25	28	22	N/A	$515
ARGYLE WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	1	2	2	2	N/A	$0
ARGYLE WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	67	N/A	$837
ARGYLE WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	12	23	N/A	$837
ARGYLE WSC	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	3	7	8	14	N/A	$3
ARGYLE WSC	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	1	4	4	8	N/A	$0
ARGYLE WSC	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	0	31	90	129	87	N/A	$80
ARGYLE WSC	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	0	14	40	43	41	N/A	$80
ARGYLE WSC	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	12	N/A	$483

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ARGYLE WSC	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	12	10	N/A	$697
ARLINGTON	C	CONSERVATION - ARLINGTON	DEMAND REDUCTION	949	1,627	2,216	2,332	2,570	2,806	$466438	$440336
ARLINGTON	C	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	DEMAND REDUCTION	335	335	0	0	0	0	$256598	N/A
ARLINGTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	8,190	0	N/A	N/A
ARLINGTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	12,726	N/A	$1061
ARLINGTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	8,221	3,668	4,311	N/A	$1061
ARLINGTON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	1,138	2,095	1,581	1,740	1,164	N/A	$157
ARLINGTON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	262	538	480	685	1,556	N/A	$157
ARLINGTON	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	2,887	5,985	5,171	6,651	5,358	N/A	$114
ARLINGTON	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2,826	2,443	2,155	2,531	N/A	$149
ATHENS	C	CONSERVATION - ATHENS	DEMAND REDUCTION	39	69	102	125	235	388	$37503	$100000
ATHENS	C	CONSERVATION – WASTE PROHIBITION, ATHENS	DEMAND REDUCTION	6	14	16	19	41	68	$5853	$18335
ATHENS	C	CONSERVATION, WATER LOSS CONTROL - ATHENS	DEMAND REDUCTION	15	15	0	0	0	0	$19684	N/A
ATHENS	I	AMWA ATHENS FISH HATCHERY REUSE	I | NECHES INDIRECT REUSE	727	689	657	622	1,361	1,938	$33	$33
ATHENS	I	AMWA-BOOSTER PUMPSTATION IMPROVEMENTS	I | ATHENS LAKE/RESERVOIR	26	137	105	70	36	0	$59	[illegible]
AUBREY	C	CONSERVATION - AUBREY	DEMAND REDUCTION	2	5	8	13	20	29	$0	$0
AUBREY	C	CONSERVATION, WATER LOSS CONTROL - AUBREY	DEMAND REDUCTION	3	3	0	0	0	0	$1135	N/A
AUBREY	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	5	13	69	86	86	N/A	$221
AUBREY	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	14	42	63	67	61	N/A	$515
AUBREY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	3	5	6	6	6	N/A	$0
AUBREY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	185	N/A	$837
AUBREY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	30	63	N/A	$837
AUBREY	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	14	19	18	39	N/A	$3
AUBREY	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	7	10	10	22	N/A	$0
AUBREY	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	103	168	232	309	241	N/A	$80
AUBREY	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	30	74	103	104	113	N/A	$80
AUBREY	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	32	N/A	$483
AUBREY	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	30	27	N/A	$697
AURORA	C	CONSERVATION - AURORA	DEMAND REDUCTION	0	1	2	3	4	6	N/A	$0
AURORA	C	CONSERVATION, WATER LOSS CONTROL - AURORA	DEMAND REDUCTION	1	1	0	0	0	0	$195	[illegible]
AURORA	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	29	0	N/A	N/A
AURORA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	62	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
AURORA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	5	13	21	N/A	$1061
AURORA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	2	4	4	6	6	N/A	$157
AURORA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	2	1	3	8	N/A	$157
AURORA	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	5	11	22	24	26	N/A	$114
AURORA	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	5	12	8	12	N/A	$149
AZLE	C	CONSERVATION - AZLE	DEMAND REDUCTION	6	13	21	29	44	68	$0	$0
AZLE	C	CONSERVATION, WATER LOSS CONTROL - AZLE	DEMAND REDUCTION	9	9	0	0	0	0	$18165	N/A
AZLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	328	0	N/A	N/A
AZLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	755	N/A	$1061
AZLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	71	147	256	N/A	$1061
AZLE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	99	68	70	54	70	69	$442	$157
AZLE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	63	16	18	16	27	93	$442	$157
AZLE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	171	200	301	267	318	N/A	$114
AZLE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	95	167	86	150	N/A	$149
BALCH SPRINGS	C	CONSERVATION - BALCH SPRINGS	DEMAND REDUCTION	9	19	31	44	59	76	$0	$0
BALCH SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - BALCH SPRINGS	DEMAND REDUCTION	14	14	0	0	0	0	$7081	N/A
BALCH SPRINGS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	105	84	159	469	526	544	$153	$221
BALCH SPRINGS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	267	503	429	412	388	N/A	$515
BALCH SPRINGS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	205	N/A	$483
BALCH SPRINGS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	181	173	N/A	$697
BARDWELL	C	CONSERVATION - BARDWELL	DEMAND REDUCTION	1	1	1	2	3	7	$0	$0
BARDWELL	C	CONSERVATION, WATER LOSS CONTROL - BARDWELL	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
BARDWELL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	144	N/A	$1061
BARDWELL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	144	N/A	$1061
BARDWELL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	11	20	49	N/A	$1061
BARDWELL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	11	20	49	N/A	$1061
BARDWELL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	14	11	12	8	10	13	$442	$157
BARDWELL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	9	3	3	3	3	17	$442	$157
BARDWELL	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	29	35	47	36	61	N/A	$114
BARDWELL	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	17	26	12	29	N/A	$149
BARDWELL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	46	0	N/A	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
BARTONVILLE	C	CONSERVATION - BARTONVILLE	DEMAND REDUCTION	11	20	27	30	33	36	$12528	$13889
BARTONVILLE	C	CONSERVATION, WATER LOSS CONTROL - BARTONVILLE	DEMAND REDUCTION	4	4	0	0	0	0	$2878	N/A
BARTONVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	4	11	52	55	46	N/A	$221
BARTONVILLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	13	35	48	43	32	N/A	$515
BARTONVILLE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	3	4	5	4	3	N/A	$0
BARTONVILLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	97	N/A	$837
BARTONVILLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	19	33	N/A	$837
BARTONVILLE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	12	14	12	21	N/A	$0
BARTONVILLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	96	142	172	197	126	N/A	$80
BARTONVILLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	28	63	77	66	60	N/A	$80
BARTONVILLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	17	N/A	$483
BARTONVILLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	19	14	N/A	$697
BEDFORD	C	CONSERVATION - BEDFORD	DEMAND REDUCTION	121	208	304	357	392	428	$97150	$109750
BEDFORD	C	CONSERVATION, WATER LOSS CONTROL - BEDFORD	DEMAND REDUCTION	914	914	0	0	0	0	$7656116	N/A
BEDFORD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,156	0	N/A	[illegible]
BEDFORD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,795	N/A	$1061
BEDFORD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,162	517	608	N/A	$1061
BEDFORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	281	225	245	164	N/A	$157
BEDFORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	72	68	97	220	N/A	$157
BEDFORD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	802	731	938	756	N/A	$114
BEDFORD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	379	345	304	357	N/A	$149
BELLS	C	BELLS NEW WELL IN WOODBINE AQUIFER	C | WOODBINE AQUIFER | GRAYSON COUNTY	0	145	145	145	145	145	N/A	$412
BELLS	C	CONSERVATION - BELLS	DEMAND REDUCTION	1	1	2	3	10	16	$0	$0
BELLS	C	CONSERVATION, WATER LOSS CONTROL - BELLS	DEMAND REDUCTION	1	1	0	0	0	0	$20920	N/A
BELLS	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	22	46	76	403	592	N/A	$535
BENBROOK	C	CONSERVATION - BENBROOK	DEMAND REDUCTION	69	123	184	242	389	424	$56667	$97143
BENBROOK	C	CONSERVATION – WASTE PROHIBITION, BENBROOK	DEMAND REDUCTION	13	29	33	42	68	68	$8865	$17637
BENBROOK	C	CONSERVATION, IRRIGATION RESTRICTIONS – BENBROOK	DEMAND REDUCTION	4	8	10	12	20	20	$8865	$17637
BENBROOK	C	CONSERVATION, WATER LOSS CONTROL - BENBROOK	DEMAND REDUCTION	26	26	0	0	0	0	$17071	[illegible]
BENBROOK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	2,391	0	N/A	N/A
BENBROOK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,088	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
BENBROOK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	71	147	256	N/A	$1061
BENBROOK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	396	442	430	310	508	282	$442	$157
BENBROOK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	252	102	111	94	200	378	$442	$157
BENBROOK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,120	1,227	1,745	1,943	1,300	N/A	$114
BENBROOK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	580	965	629	614	N/A	$149
BLACKLAND WSC	C	CONSERVATION - BLACKLAND WSC	DEMAND REDUCTION	9	16	22	27	31	36	$9310	$13086
BLACKLAND WSC	C	CONSERVATION, WATER LOSS CONTROL - BLACKLAND WSC	DEMAND REDUCTION	3	3	0	0	0	0	$20920	N/A
BLACKLAND WSC	C	CONSERVATION, WATER WASTE PROHIBITION - BLACKLAND WSC	DEMAND REDUCTION	0	1	1	1	1	1	N/A	$1877
BLACKLAND WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	9	17	19	24	18	13	$225	$84
BLACKLAND WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	7	97	115	148	115	91	$506	$71
BLACKLAND WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	23	31	24	16	1	0	$153	N/A
BLACKLAND WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	40	N/A	$509
BLACKLAND WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	38	49	67	53	N/A	$1315
BLACKLAND WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	65	80	N/A	$955
BLACKLAND WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	2	3	4	3	5	$19	$0
BLACKLAND WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	52	N/A	$640
BLACKLAND WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	22	18	N/A	$640
BLOOMING GROVE	C	BLOOMING GROVE GROUNDWATER	C | TRINITY AQUIFER | NAVARRO COUNTY	160	160	160	160	160	160	$1350	$475
BLOOMING GROVE	C	CONSERVATION - BLOOMING GROVE	DEMAND REDUCTION	1	3	5	7	7	10	$0	$4211
BLOOMING GROVE	C	CONSERVATION, WATER LOSS CONTROL - BLOOMING GROVE	DEMAND REDUCTION	1	1	0	0	0	0	$844	N/A
BLOOMING GROVE	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	31	65	86	N/A	$596
BLOOMING GROVE	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	55	66	51	37	40	N/A	$0
BLUE MOUND	C	CONSERVATION - BLUE MOUND	DEMAND REDUCTION	1	1	2	2	3	3	$0	$0
BLUE MOUND	C	CONSERVATION, WATER LOSS CONTROL - BLUE MOUND	DEMAND REDUCTION	1	1	0	0	0	0	$343	N/A
BLUE RIDGE	C	CONSERVATION - BLUE RIDGE	DEMAND REDUCTION	0	1	4	19	54	109	N/A	$0
BLUE RIDGE	C	CONSERVATION, WATER LOSS CONTROL - BLUE RIDGE	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
BLUE RIDGE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	13	30	134	190	201	N/A	$84
BLUE RIDGE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	72	177	835	1,242	1,381	N/A	$71

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
BLUE RIDGE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	0	23	37	92	7	0	N/A	N/A
BLUE RIDGE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	608	N/A	$509
BLUE RIDGE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	58	278	726	814	N/A	$1315
BLUE RIDGE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	700	1,216	N/A	$955
BLUE RIDGE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	6	24	35	39	N/A	$0
BLUE RIDGE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	794	N/A	$640
BLUE RIDGE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	237	269	N/A	$640
BOLIVAR WSC	C	CONSERVATION - BOLIVAR WSC	DEMAND REDUCTION	4	8	14	22	33	46	$0	$0
BOLIVAR WSC	C	CONSERVATION, WATER LOSS CONTROL - BOLIVAR WSC	DEMAND REDUCTION	6	6	0	0	0	0	$1873	N/A
BOLIVAR WSC	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	1	7	54	82	85	N/A	$221
BOLIVAR WSC	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	50	75	100	125	150	N/A	$0
BOLIVAR WSC	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	3	22	49	64	60	N/A	$515
BOLIVAR WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	1	3	5	6	6	N/A	$0
BOLIVAR WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	182	N/A	$837
BOLIVAR WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	28	62	N/A	$837
BOLIVAR WSC	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	8	15	17	39	N/A	$3
BOLIVAR WSC	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	4	8	9	21	N/A	$0
BOLIVAR WSC	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	21	90	178	294	235	N/A	$80
BOLIVAR WSC	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	6	40	80	99	112	N/A	$80
BOLIVAR WSC	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	110	198	255	323	349	N/A	$0
BOLIVAR WSC	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	33	65	89	120	135	N/A	$0
BOLIVAR WSC	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | SULPHUR INDIRECT REUSE	0	15	30	43	60	69	N/A	$0
BOLIVAR WSC	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	32	N/A	$483
BOLIVAR WSC	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	28	27	N/A	$697
BONHAM	C	CONSERVATION - BONHAM	DEMAND REDUCTION	7	17	34	61	94	138	$0	$0
BONHAM	C	CONSERVATION, WATER LOSS CONTROL - BONHAM	DEMAND REDUCTION	28	10	0	0	0	0	$64561	N/A
BONHAM	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	0	0	416	1,741	3,013	N/A	[illegible]
BONHAM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | BONHAM LAKE/RESERVOIR	0	15	757	1,456	1,081	919	N/A	$0
BOYD	C	CONSERVATION - BOYD	DEMAND REDUCTION	3	5	9	5	9	12	$3825	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
BOYD	C	CONSERVATION, WATER LOSS CONTROL - BOYD	DEMAND REDUCTION	6	17	22	0	0	0	$34757	N/A
BOYD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	70	0	N/A	N/A
BOYD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	131	N/A	$1061
BOYD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	10	31	44	N/A	$1061
BOYD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	3	8	15	12	N/A	$157
BOYD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	2	7	16	N/A	$157
BOYD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	9	43	57	55	N/A	$114
BOYD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	4	24	18	26	N/A	$149
BRIDGEPORT	C	CONSERVATION - BRIDGEPORT	DEMAND REDUCTION	18	34	55	83	122	166	$20575	$62500
BRIDGEPORT	C	CONSERVATION, WATER LOSS CONTROL - BRIDGEPORT	DEMAND REDUCTION	6	6	0	0	0	0	$7044	N/A
BRIDGEPORT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	532	0	N/A	N/A
BRIDGEPORT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,049	N/A	$1061
BRIDGEPORT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	408	1,071	1,046	N/A	$1061
BRIDGEPORT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	26	55	63	112	96	N/A	$157
BRIDGEPORT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	6	14	18	45	128	N/A	$157
BRIDGEPORT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	67	158	353	170	442	N/A	$114
BRIDGEPORT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	74	195	140	209	N/A	$149
BRYSON	C	CONSERVATION - BRYSON	DEMAND REDUCTION	0	1	1	1	1	2	N/A	$0
BRYSON	C	CONSERVATION, WATER LOSS CONTROL - BRYSON	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
BUENA VISTA - BETHEL SUD	C	CONSERVATION - BUENA VISTA - BETHEL SUD	DEMAND REDUCTION	16	33	53	72	114	166	$12528	$39927
BUENA VISTA - BETHEL SUD	C	CONSERVATION, WATER LOSS CONTROL - BUENA VISTA - BETHEL SUD	DEMAND REDUCTION	6	6	0	0	0	0	$3644	N/A
BUENA VISTA - BETHEL SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	312	0	N/A	N/A
BUENA VISTA - BETHEL SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	977	N/A	$1061
BUENA VISTA - BETHEL SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	312	0	N/A	N/A
CARROLLTON	C	CONSERVATION - CARROLLTON	DEMAND REDUCTION	315	510	693	763	838	914	$176763	$179188
CARROLLTON	C	CONSERVATION, WATER LOSS CONTROL - CARROLLTON	DEMAND REDUCTION	118	118	0	0	0	0	$215925	N/A
CARROLLTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	663	596	1,089	3,025	3,169	3,077	$153	$221
CARROLLTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	1,898	3,432	2,761	2,488	2,193	N/A	$515
CARROLLTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	1,157	N/A	$483
CARROLLTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1,095	975	N/A	$697
CEDAR HILL	C	CONSERVATION - CEDAR HILL	DEMAND REDUCTION	143	277	450	575	632	690	$103200	$138956

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
CEDAR HILL	C	CONSERVATION – WASTE PROHIBITION, CEDAR HILL	DEMAND REDUCTION	16	44	55	66	66	66	$20614	$32621
CEDAR HILL	C	CONSERVATION, WATER LOSS CONTROL - CEDAR HILL	DEMAND REDUCTION	53	53	0	0	0	0	$122286	N/A
CEDAR HILL	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	277	311	684	2,217	2,331	2,264	$153	$221
CEDAR HILL	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	991	2,157	2,024	1,830	1,614	N/A	$515
CEDAR HILL	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	851	N/A	$483
CEDAR HILL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	805	718	N/A	$697
CELINA	C	CONSERVATION - CELINA	DEMAND REDUCTION	63	214	549	1,028	1,130	1,233	$57075	$200000
CELINA	C	CONSERVATION, WATER LOSS CONTROL - CELINA	DEMAND REDUCTION	24	24	0	0	0	0	$66987	N/A
CELINA	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	45	215	1,997	2,263	2,385	N/A	$221
CELINA	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	143	676	1,824	1,776	1,700	N/A	$515
CELINA	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	170	280	474	292	181	N/A	$84
CELINA	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	962	1,676	2,961	1,906	1,246	N/A	$71
CELINA	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	0	303	353	326	11	0	N/A	N/A
CELINA	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	548	N/A	$509
CELINA	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	552	987	1,115	734	N/A	$1313
CELINA	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1,075	1,097	N/A	$955
CELINA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	29	76	178	155	170	N/A	$0
CELINA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	28	48	84	53	34	N/A	$0
CELINA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	716	N/A	$837
CELINA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	5,132	N/A	$837
CELINA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	364	243	N/A	$837
CELINA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	772	1,739	N/A	$837
CELINA	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	227	542	485	1,089	N/A	$3
CELINA	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	115	284	261	603	N/A	$0
CELINA	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	1,033	2,745	6,598	8,212	6,685	N/A	$80
CELINA	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	295	1,207	2,972	2,736	3,155	N/A	$80
CELINA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	1,029	2,455	6,400	7,307	4,240	0	$0	[illegible]
CELINA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	241	526	0	0	0	0	$0	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
CELINA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | SULPHUR INDIRECT REUSE	168	385	0	32	0	0	$0	N/A
CELINA	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	897	N/A	$483
CELINA	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	782	756	N/A	$697
CHATFIELD WSC	C	CHATFIELD WSC NEW WELL	C | TRINITY AQUIFER | NAVARRO COUNTY	150	150	150	150	150	150	$936	$376
CHATFIELD WSC	C	CONSERVATION - CHATFIELD WSC	DEMAND REDUCTION	2	3	5	6	8	10	$0	$0
CHATFIELD WSC	C	CONSERVATION, WATER LOSS CONTROL - CHATFIELD WSC	DEMAND REDUCTION	2	2	0	0	0	0	$1069	N/A
CHATFIELD WSC	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	78	155	190	N/A	$596
CHATFIELD WSC	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	158	180	131	88	87	N/A	$0
CHICO	C	CONSERVATION - CHICO	DEMAND REDUCTION	3	5	7	14	19	26	$3139	$9806
CHICO	C	CONSERVATION, WATER LOSS CONTROL - CHICO	DEMAND REDUCTION	1	1	0	0	0	0	$370	N/A
CHICO	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	70	0	N/A	N/A
CHICO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	148	N/A	$1061
CHICO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	11	32	50	N/A	$1061
CHICO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	8	15	14	N/A	$157
CHICO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	5	10	100	104	117	N/A	$157
CHICO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	46	57	62	N/A	$114
CHICO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	26	19	29	N/A	$149
COCKRELL HILL	C	CONSERVATION - COCKRELL HILL	DEMAND REDUCTION	1	3	4	5	9	23	$0	$0
COCKRELL HILL	C	CONSERVATION, WATER LOSS CONTROL - COCKRELL HILL	DEMAND REDUCTION	2	2	0	0	0	0	$2184	N/A
COCKRELL HILL	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	16	12	21	57	79	163	$153	$221
COCKRELL HILL	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	40	66	52	63	116	N/A	$515
COCKRELL HILL	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	61	N/A	$483
COCKRELL HILL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	28	52	N/A	$697
COLLEGE MOUND WSC	C	CONSERVATION - COLLEGE MOUND WSC	DEMAND REDUCTION	3	7	12	20	34	51	$0	$0
COLLEGE MOUND WSC	C	CONSERVATION, WATER LOSS CONTROL - COLLEGE MOUND WSC	DEMAND REDUCTION	4	4	0	0	0	0	$1291	N/A
COLLEGE MOUND WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	13	25	33	46	44	39	$225	$84
COLLEGE MOUND WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	145	199	291	287	267	$506	$71
COLLEGE MOUND WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	31	46	42	32	2	0	$153	N/A
COLLEGE MOUND WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	117	N/A	$509
COLLEGE MOUND WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	66	97	168	157	N/A	$1315

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COLLEGE MOUND WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	162	235	N/A	$955
COLLEGE MOUND WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	11	25	42	56	N/A	$0
COLLEGE MOUND WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	8	20	35	49	N/A	$0
COLLEGE MOUND WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	16	46	85	121	N/A	$0
COLLEGE MOUND WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	6	12	20	28	N/A	$0
COLLEGE MOUND WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	0	1	3	6	8	N/A	$0
COLLEGE MOUND WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	4	6	9	8	8	$19	$0
COLLEGE MOUND WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	153	N/A	$640
COLLEGE MOUND WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	55	52	N/A	$640
COLLEYVILLE	C	CONSERVATION - COLLEYVILLE	DEMAND REDUCTION	124	212	309	355	390	426	$60167	$67000
COLLEYVILLE	C	CONSERVATION, WATER LOSS CONTROL - COLLEYVILLE	DEMAND REDUCTION	47	47	0	0	0	0	$35306	N/A
COLLEYVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,244	0	N/A	[illegible]
COLLEYVILLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,932	N/A	$1061
COLLEYVILLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,253	557	654	N/A	$1061
COLLEYVILLE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	165	313	241	264	177	N/A	$157
COLLEYVILLE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	38	80	73	104	237	N/A	$157
COLLEYVILLE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	419	893	788	1,011	813	N/A	$114
COLLEYVILLE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	422	372	328	384	N/A	$149
COLLINSVILLE	C	CONSERVATION - COLLINSVILLE	DEMAND REDUCTION	1	2	3	5	9	13	$0	$0
COLLINSVILLE	C	CONSERVATION, WATER LOSS CONTROL - COLLINSVILLE	DEMAND REDUCTION	1	1	0	0	0	0	$381	N/A
COLLINSVILLE	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	40	93	154	262	411	N/A	$535
COMBINE	C	CONSERVATION - COMBINE	DEMAND REDUCTION	1	2	4	7	10	14	$0	$0
COMBINE	C	CONSERVATION, WATER LOSS CONTROL - COMBINE	DEMAND REDUCTION	2	2	0	0	0	0	$1840	N/A
COMBINE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	10	11	22	70	87	99	$153	$221
COMBINE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	13	14	16	19	24	29	$0	$0
COMBINE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	32	32	35	38	47	55	$0	[illegible]
COMBINE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	9	12	13	22	38	56	$0	$0
COMBINE	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	13	16	20	26	36	48	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COMBINE	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	45	51	56	63	79	96	$0	$0
COMBINE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	33	68	64	68	70	N/A	$515
COMBINE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	37	N/A	$483
COMBINE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	30	31	N/A	$697
COMMUNITY WSC	C	CONSERVATION - COMMUNITY WSC	DEMAND REDUCTION	1	2	4	6	8	10	$0	$0
COMMUNITY WSC	C	CONSERVATION, WATER LOSS CONTROL - COMMUNITY WSC	DEMAND REDUCTION	2	2	0	0	0	0	$699	N/A
COMMUNITY WSC	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	57	0	N/A	N/A
COMMUNITY WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	96	N/A	$1061
COMMUNITY WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	14	26	32	N/A	$1061
COMMUNITY WSC	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	8	13	10	12	9	N/A	$157
COMMUNITY WSC	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	4	4	6	12	N/A	$157
COMMUNITY WSC	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	20	38	59	47	40	N/A	$114
COMMUNITY WSC	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	18	32	15	19	N/A	$149
COPEVILLE SUD	C	CONSERVATION - COPEVILLE SUD	DEMAND REDUCTION	1	3	5	8	17	35	$0	$0
COPEVILLE SUD	C	CONSERVATION, WATER LOSS CONTROL - COPEVILLE SUD	DEMAND REDUCTION	2	2	0	0	0	0	$1357	N/A
COPEVILLE SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	10	13	19	23	27	$225	$84
COPEVILLE SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	4	55	74	117	148	185	$506	$71
COPEVILLE SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	12	17	16	13	1	0	$153	N/A
COPEVILLE SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	82	N/A	$509
COPEVILLE SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	24	39	86	110	N/A	$1315
COPEVILLE SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	83	163	N/A	$955
COPEVILLE SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	1	3	4	4	$19	$0
COPEVILLE SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	107	N/A	$640
COPEVILLE SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	28	36	N/A	$640
COPPELL	C	CONSERVATION - COPPELL	DEMAND REDUCTION	147	244	334	370	407	442	$87190	$89430
COPPELL	C	CONSERVATION, WATER LOSS CONTROL - COPPELL	DEMAND REDUCTION	55	55	0	0	0	0	$151664	N/A
COPPELL	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	310	286	525	1,465	1,535	1,490	$153	$221
COPPELL	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	910	1,655	1,338	1,206	1,063	N/A	$515
COPPELL	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	561	N/A	$483
COPPELL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	531	473	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COPPER CANYON	C	CONSERVATION - COPPER CANYON	DEMAND REDUCTION	4	6	9	10	13	14	$4141	$6079
COPPER CANYON	C	CONSERVATION, WATER LOSS CONTROL - COPPER CANYON	DEMAND REDUCTION	1	1	0	0	0	0	$647	N/A
COPPER CANYON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	1	2	13	16	14	N/A	$221
COPPER CANYON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	2	7	11	13	11	N/A	$515
COPPER CANYON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	1	1	1	1	N/A	$0
COPPER CANYON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	32	N/A	$837
COPPER CANYON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	5	11	N/A	$837
COPPER CANYON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	2	3	3	7	N/A	$0
COPPER CANYON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	14	26	41	58	41	N/A	$80
COPPER CANYON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	4	12	18	19	20	N/A	$80
COPPER CANYON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	6	N/A	$483
COPPER CANYON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	6	5	N/A	$697
CORBET WSC	C	CONSERVATION - CORBET WSC	DEMAND REDUCTION	1	2	3	4	6	7	$0	$0
CORBET WSC	C	CONSERVATION, WATER LOSS CONTROL - CORBET WSC	DEMAND REDUCTION	1	1	0	0	0	0	$336	N/A
CORBET WSC	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	53	111	147	N/A	$596
CORBET WSC	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	93	113	87	63	67	N/A	$0
CORINTH	C	CONSERVATION - CORINTH	DEMAND REDUCTION	57	108	149	165	181	198	$62292	$69249
CORINTH	C	CONSERVATION, IRRIGATION RESTRICTIONS – CORINTH	DEMAND REDUCTION	5	13	13	13	13	13	$9749	$10818
CORINTH	C	CONSERVATION, WATER LOSS CONTROL - CORINTH	DEMAND REDUCTION	21	21	0	0	0	0	$50969	N/A
CORINTH	C	CORINTH NEW WELLS IN TRINITY AQUIFER-2020	C | TRINITY AQUIFER | DENTON COUNTY	561	561	561	561	561	561	$457	$212
CORINTH	C	CORINTH NEW WELLS IN TRINITY AQUIFER-2030	C | TRINITY AQUIFER | DENTON COUNTY	0	561	561	561	561	561	N/A	$212
CORINTH	C	CORINTH UPSIZE EXISTING WELL	C | TRINITY AQUIFER | DENTON COUNTY	286	286	286	286	286	286	$1029	$333
CORINTH	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	17	46	208	214	177	N/A	$221
CORINTH	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	55	144	190	168	126	N/A	$515
CORINTH	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	11	16	19	15	13	N/A	$0
CORINTH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	382	N/A	$837
CORINTH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	76	129	N/A	$837
CORINTH	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	48	57	46	81	N/A	$3
CORINTH	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	24	30	25	45	N/A	[illegible]
CORINTH	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	397	584	687	775	497	N/A	$80

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
CORINTH	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	113	256	310	259	235	N/A	$80
CORINTH	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	67	N/A	$483
CORINTH	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	74	56	N/A	$697
CORSICANA	C	CONSERVATION - CORSICANA	DEMAND REDUCTION	80	140	210	254	306	364	$64447	$87735
CORSICANA	C	CONSERVATION, WATER LOSS CONTROL - CORSICANA	DEMAND REDUCTION	30	30	0	0	0	0	$20160	N/A
CORSICANA	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	553	1,227	2,622	3,449	N/A	$596
CORSICANA	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	2,110	2,031	2,042	1,477	1,582	N/A	$0
COUNTY-OTHER, COLLIN	C	CONSERVATION - COLLIN COUNTY	DEMAND REDUCTION	5	11	16	70	124	238	$0	$0
COUNTY-OTHER, COLLIN	C	CONSERVATION, WATER LOSS CONTROL - COLLIN COUNTY	DEMAND REDUCTION	8	8	0	0	0	0	$3251	N/A
COUNTY-OTHER, COLLIN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	18	28	29	148	150	173	$225	$84
COUNTY-OTHER, COLLIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	14	157	173	926	986	1,189	$506	$71
COUNTY-OTHER, COLLIN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	43	50	36	102	6	0	$153	N/A
COUNTY-OTHER, COLLIN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	524	N/A	$509
COUNTY-OTHER, COLLIN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	57	309	577	701	N/A	$1315
COUNTY-OTHER, COLLIN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	556	1,047	N/A	$955
COUNTY-OTHER, COLLIN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	5	5	26	28	33	$19	$0
COUNTY-OTHER, COLLIN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	684	N/A	$640
COUNTY-OTHER, COLLIN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	188	232	N/A	$640
COUNTY-OTHER, COOKE	C	CONSERVATION - COOKE COUNTY	DEMAND REDUCTION	4	8	12	21	31	75	$0	$0
COUNTY-OTHER, COOKE	C	CONSERVATION, WATER LOSS CONTROL - COOKE COUNTY	DEMAND REDUCTION	6	6	0	0	0	0	$2044	N/A
COUNTY-OTHER, COOKE	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	0	0	0	0	1,280	N/A	$0
COUNTY-OTHER, DALLAS	C	CONSERVATION - DALLAS COUNTY	DEMAND REDUCTION	6	6	6	9	11	13	$0	$0
COUNTY-OTHER, DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS COUNTY	DEMAND REDUCTION	9	9	0	0	0	0	$4027	N/A
COUNTY-OTHER, DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	82	46	61	168	174	168	$153	$221
COUNTY-OTHER, DALLAS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	79	103	81	60	41	N/A	$0
COUNTY-OTHER, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	149	190	152	136	120	N/A	$515
COUNTY-OTHER, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	111	0	N/A	N/A
COUNTY-OTHER, DALLAS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	170	N/A	$1061
COUNTY-OTHER, DALLAS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	29	50	58	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	18	30	22	23	16	N/A	$157
COUNTY-OTHER, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	8	6	9	20	N/A	$157
COUNTY-OTHER, DALLAS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	46	87	122	90	72	N/A	$114
COUNTY-OTHER, DALLAS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	41	68	29	34	N/A	$149
COUNTY-OTHER, DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	63	N/A	$483
COUNTY-OTHER, DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	60	53	N/A	$697
COUNTY-OTHER, DENTON	C	CONSERVATION - DENTON COUNTY	DEMAND REDUCTION	13	28	46	86	174	390	$0	$0
COUNTY-OTHER, DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY	DEMAND REDUCTION	19	19	0	0	0	0	$7776	N/A
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | DENTON COUNTY	504	504	504	504	504	504	$1005	$310
COUNTY-OTHER, DENTON	C	DENTON COUNTY OTHER NEW WELLS IN WOODBINE AQUIFER	C | WOODBINE AQUIFER | DENTON COUNTY	1,000	1,000	1,000	1,000	1,000	1,000	$1361	$383
COUNTY-OTHER, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	2	10	13	12	N/A	$221
COUNTY-OTHER, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	13	41	339	643	1,069	N/A	$221
COUNTY-OTHER, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	1	5	9	10	9	N/A	$515
COUNTY-OTHER, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	41	131	310	505	762	N/A	[illegible]
COUNTY-OTHER, DENTON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	31	47	51	58	40	28	$225	$84
COUNTY-OTHER, DENTON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	23	271	301	364	264	195	$506	$71
COUNTY-OTHER, DENTON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	74	85	63	40	2	0	$153	N/A
COUNTY-OTHER, DENTON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	86	N/A	$509
COUNTY-OTHER, DENTON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	99	121	155	115	N/A	$1315
COUNTY-OTHER, DENTON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	149	171	N/A	$955
COUNTY-OTHER, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	1	1	1	1	N/A	$0
COUNTY-OTHER, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	8	15	30	44	76	N/A	$0
COUNTY-OTHER, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	9	8	11	7	5	$20	$0
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	112	N/A	$640
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	112	N/A	$640
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,300	N/A	$837
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	51	38	N/A	[illegible]
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	51	38	N/A	$640
COUNTY-OTHER, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	219	779	N/A	$837

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	44	92	138	488	N/A	$3
COUNTY-OTHER, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	2	3	3	6	N/A	$0
COUNTY-OTHER, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	22	48	74	270	N/A	$0
COUNTY-OTHER, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	11	21	35	47	32	N/A	$80
COUNTY-OTHER, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	174	332	973	2,192	2,926	N/A	$80
COUNTY-OTHER, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	3	10	15	16	16	N/A	$80
COUNTY-OTHER, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	84	233	505	778	1,414	N/A	$80
COUNTY-OTHER, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	5	N/A	$483
COUNTY-OTHER, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	402	N/A	$483
COUNTY-OTHER, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	5	4	N/A	$697
COUNTY-OTHER, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	222	339	N/A	$697
COUNTY-OTHER, ELLIS	C	CONSERVATION - ELLIS COUNTY	DEMAND REDUCTION	2	5	8	41	110	233	$0	$0
COUNTY-OTHER, ELLIS	C	CONSERVATION, WATER LOSS CONTROL - ELLIS COUNTY	DEMAND REDUCTION	4	4	0	0	0	0	$1272	N/A
COUNTY-OTHER, ELLIS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	573	0	N/A	N/A
COUNTY-OTHER, ELLIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,626	N/A	$1061
COUNTY-OTHER, ELLIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,626	N/A	$1061
COUNTY-OTHER, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	229	413	889	N/A	$1061
COUNTY-OTHER, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	229	413	889	N/A	$1061
COUNTY-OTHER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	21	83	171	488	N/A	$157
COUNTY-OTHER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	1,262	729	672	551	444	507	$442	$157
COUNTY-OTHER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	28	10	128	411	N/A	$157
COUNTY-OTHER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	14	25	68	652	N/A	$157
COUNTY-OTHER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	772	121	94	54	77	322	$442	$157
COUNTY-OTHER, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,330	1,035	981	750	1,105	N/A	$114
COUNTY-OTHER, ELLIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	489	542	243	522	N/A	$149
COUNTY-OTHER, ELLIS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	923	0	N/A	N/A
COUNTY-OTHER, FANNIN	C	CONSERVATION - FANNIN COUNTY	DEMAND REDUCTION	5	9	14	25	67	130	$0	$0
COUNTY-OTHER, FANNIN	C	CONSERVATION, WATER LOSS CONTROL - FANNIN COUNTY	DEMAND REDUCTION	7	7	0	0	0	0	$2503	N/A
COUNTY-OTHER, FANNIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	0	0	451	1,741	4,070	N/A	$71
COUNTY-OTHER, FANNIN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | BONHAM LAKE/RESERVOIR	0	4	137	156	1,064	1,226	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, FREESTONE	C	CONSERVATION - FREESTONE COUNTY	DEMAND REDUCTION	4	8	11	19	39	93	$0	$0
COUNTY-OTHER, FREESTONE	C	CONSERVATION, WATER LOSS CONTROL - FREESTONE COUNTY	DEMAND REDUCTION	6	6	0	0	0	0	$2047	N/A
COUNTY-OTHER, FREESTONE	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	24	76	182	N/A	$596
COUNTY-OTHER, FREESTONE	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	40	44	40	43	84	N/A	$0
COUNTY-OTHER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,476	N/A	$1061
COUNTY-OTHER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	43	187	500	N/A	$1061
COUNTY-OTHER, FREESTONE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	189	47	27	43	95	315	$442	$157
COUNTY-OTHER, FREESTONE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	98	60	182	340	623	N/A	$114
COUNTY-OTHER, FREESTONE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	28	101	136	294	N/A	$149
COUNTY-OTHER, FREESTONE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	417	0	N/A	N/A
COUNTY-OTHER, GRAYSON	C	CONSERVATION - GRAYSON COUNTY	DEMAND REDUCTION	9	18	26	34	58	116	$0	$0
COUNTY-OTHER, GRAYSON	C	CONSERVATION, WATER LOSS CONTROL - GRAYSON COUNTY	DEMAND REDUCTION	14	14	0	0	0	0	$5122	N/A
COUNTY-OTHER, GRAYSON	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	13	883	1,193	1,530	1,958	3,162	$840	$535
COUNTY-OTHER, JACK	C	CONSERVATION - JACK COUNTY	DEMAND REDUCTION	2	3	5	7	8	10	$0	$0
COUNTY-OTHER, JACK	C	CONSERVATION, WATER LOSS CONTROL - JACK COUNTY	DEMAND REDUCTION	2	2	0	0	0	0	$794	N/A
COUNTY-OTHER, JACK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	7	0	N/A	N/A
COUNTY-OTHER, JACK	C	JACKSBORO UNALLOCATED SUPPLY UTILIZATION	C | LOST CREEK-JACKSBORO LAKE/RESERVOIR SYSTEM	7	7	7	7	7	7	$24435	$1812
COUNTY-OTHER, JACK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	13	N/A	$1061
COUNTY-OTHER, JACK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	2	3	4	N/A	$1061
COUNTY-OTHER, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	48	46	41	37	30	23	$442	$157
COUNTY-OTHER, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	0	1	2	N/A	$157
COUNTY-OTHER, JACK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	2	5	7	6	5	N/A	$114
COUNTY-OTHER, JACK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2	4	2	3	N/A	$149
COUNTY-OTHER, KAUFMAN	C	CONSERVATION - KAUFMAN COUNTY	DEMAND REDUCTION	6	12	26	53	112	186	$0	$0
COUNTY-OTHER, KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN COUNTY	DEMAND REDUCTION	9	9	0	0	0	0	$3131	N/A
COUNTY-OTHER, KAUFMAN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	1	5	18	77	142	193	$153	$221
COUNTY-OTHER, KAUFMAN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	43	0	N/A	N/A
COUNTY-OTHER, KAUFMAN	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	11	11	14	22	40	59	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

				Water Management Strategy Supplies							
WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, KAUFMAN	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	26	23	31	46	83	112	$0	$0
COUNTY-OTHER, KAUFMAN	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	7	9	12	26	65	114	$0	$0
COUNTY-OTHER, KAUFMAN	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	11	12	18	31	62	98	$0	$0
COUNTY-OTHER, KAUFMAN	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	38	38	50	75	137	195	$0	$0
COUNTY-OTHER, KAUFMAN	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	18	55	70	112	138	N/A	$515
COUNTY-OTHER, KAUFMAN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	11	27	67	97	101	$225	$84
COUNTY-OTHER, KAUFMAN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	6	59	162	418	636	690	$506	$71
COUNTY-OTHER, KAUFMAN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	14	19	34	46	4	0	$153	N/A
COUNTY-OTHER, KAUFMAN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	304	N/A	$509
COUNTY-OTHER, KAUFMAN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	53	139	370	407	N/A	$1315
COUNTY-OTHER, KAUFMAN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	357	608	N/A	$955
COUNTY-OTHER, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	7	34	92	149	N/A	$0
COUNTY-OTHER, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	0	7	29	78	126	$0	$0
COUNTY-OTHER, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	13	64	186	311	N/A	$0
COUNTY-OTHER, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	4	16	45	72	N/A	$0
COUNTY-OTHER, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	0	1	4	12	20	N/A	$0
COUNTY-OTHER, KAUFMAN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	1	5	12	17	18	$19	$0
COUNTY-OTHER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	397	N/A	$640
COUNTY-OTHER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	74	N/A	$1061
COUNTY-OTHER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	121	134	N/A	$640
COUNTY-OTHER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	10	19	25	N/A	$1061
COUNTY-OTHER, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	5	9	8	9	7	N/A	$157
COUNTY-OTHER, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	53	24	23	17	25	19	$442	$157
COUNTY-OTHER, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	2	1	5	9	N/A	$157
COUNTY-OTHER, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	33	6	7	6	10	25	$442	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, KAUFMAN	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	13	26	43	35	31	N/A	$114
COUNTY-OTHER, KAUFMAN	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	61	66	97	95	89	N/A	$114
COUNTY-OTHER, KAUFMAN	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	12	24	11	15	N/A	$149
COUNTY-OTHER, KAUFMAN	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	31	52	31	42	N/A	$149
COUNTY-OTHER, KAUFMAN	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	73	N/A	$483
COUNTY-OTHER, KAUFMAN	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	49	61	N/A	$697
COUNTY-OTHER, KAUFMAN	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	117	0	N/A	N/A
COUNTY-OTHER, NAVARRO	C	CONSERVATION - NAVARRO COUNTY	DEMAND REDUCTION	2	4	6	14	35	74	$0	$0
COUNTY-OTHER, NAVARRO	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO COUNTY	DEMAND REDUCTION	3	3	0	0	0	0	$1026	N/A
COUNTY-OTHER, NAVARRO	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	107	414	869	N/A	$596
COUNTY-OTHER, NAVARRO	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	124	138	179	234	398	N/A	$0
COUNTY-OTHER, NAVARRO	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	79	0	N/A	N/A
COUNTY-OTHER, NAVARRO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	317	N/A	$1061
COUNTY-OTHER, NAVARRO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	7	36	107	N/A	$1061
COUNTY-OTHER, NAVARRO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	1	5	18	29	N/A	$157
COUNTY-OTHER, NAVARRO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	2	7	38	N/A	$157
COUNTY-OTHER, NAVARRO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	3	30	64	134	N/A	$114
COUNTY-OTHER, NAVARRO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2	16	21	63	N/A	$149
COUNTY-OTHER, PARKER	C	CONSERVATION - PARKER COUNTY	DEMAND REDUCTION	23	46	67	124	237	441	$0	$0
COUNTY-OTHER, PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY	DEMAND REDUCTION	35	35	0	0	0	0	$14982	N/A
COUNTY-OTHER, PARKER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	63	0	N/A	N/A
COUNTY-OTHER, PARKER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	320	0	N/A	N/A
COUNTY-OTHER, PARKER	C	PARKER COUNTY OTHER NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | PARKER COUNTY	200	200	200	200	200	200	$849	$244
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4,427	N/A	$1061
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	168	N/A	$1061
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	789	N/A	$1061
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	47	578	1,500	N/A	$1061
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	9	28	57	N/A	$1061
COUNTY-OTHER, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	143	267	N/A	$1061
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	0	274	405	N/A	$157
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	4	7	7	13	15	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies						Unit Cost 2020	Unit Cost 2070
				2020	2030	2040	2050	2060	2070		
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	35	69	72	N/A	$157
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	108	541	N/A	$157
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	2	2	6	21	N/A	$157
COUNTY-OTHER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	12	27	97	N/A	$157
COUNTY-OTHER, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	0	1,047	1,864	N/A	$114
COUNTY-OTHER, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	11	19	38	52	71	N/A	$114
COUNTY-OTHER, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	200	260	332	N/A	$114
COUNTY-OTHER, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	0	339	881	N/A	$149
COUNTY-OTHER, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	9	21	17	33	N/A	$149
COUNTY-OTHER, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	111	84	157	N/A	$149
COUNTY-OTHER, PARKER	C	WEATHERFORD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	944	1,489	2,114	N/A	$0
COUNTY-OTHER, PARKER	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1,290	0	N/A	N/A
COUNTY-OTHER, ROCKWALL	C	CONSERVATION - ROCKWALL COUNTY	DEMAND REDUCTION	2	4	6	7	31	63	$0	$0
COUNTY-OTHER, ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL COUNTY	DEMAND REDUCTION	3	3	0	0	0	0	$1021	N/A
COUNTY-OTHER, ROCKWALL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	9	14	16	18	41	47	$225	$84
COUNTY-OTHER, ROCKWALL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	7	82	92	110	269	328	$506	$71
COUNTY-OTHER, ROCKWALL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	22	26	19	12	2	0	$153	N/A
COUNTY-OTHER, ROCKWALL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	144	N/A	$509
COUNTY-OTHER, ROCKWALL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	30	37	158	193	N/A	$1315
COUNTY-OTHER, ROCKWALL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	152	289	N/A	$955
COUNTY-OTHER, ROCKWALL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	3	2	3	6	11	$19	$0
COUNTY-OTHER, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	189	N/A	$640
COUNTY-OTHER, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	51	64	N/A	$640
COUNTY-OTHER, TARRANT	C	CONSERVATION - TARRANT COUNTY	DEMAND REDUCTION	20	39	57	125	208	344	$0	$0
COUNTY-OTHER, TARRANT	C	CONSERVATION, WATER LOSS CONTROL - TARRANT COUNTY	DEMAND REDUCTION	30	30	0	0	0	0	$2278	N/A
COUNTY-OTHER, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	56	38	54	150	156	151	$153	$221
COUNTY-OTHER, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	70	0	N/A	N/A
COUNTY-OTHER, TARRANT	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	692	684	823	819	769	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, TARRANT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	122	170	136	122	108	N/A	$515
COUNTY-OTHER, TARRANT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	1,452	0	N/A	N/A
COUNTY-OTHER, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,078	N/A	$1061
COUNTY-OTHER, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	153	N/A	$1061
COUNTY-OTHER, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	281	649	1,043	N/A	$1061
COUNTY-OTHER, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	13	32	52	N/A	$1061
COUNTY-OTHER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	113	179	214	307	282	N/A	$157
COUNTY-OTHER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	5	8	10	15	14	N/A	$157
COUNTY-OTHER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	26	47	64	122	375	N/A	$157
COUNTY-OTHER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	2	3	6	20	N/A	$157
COUNTY-OTHER, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	288	511	1,201	1,177	1,296	N/A	$114
COUNTY-OTHER, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	13	22	57	57	64	N/A	$114
COUNTY-OTHER, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	241	664	381	612	N/A	$149
COUNTY-OTHER, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	10	32	19	30	N/A	[illegible]
COUNTY-OTHER, TARRANT	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	57	N/A	$483
COUNTY-OTHER, TARRANT	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	54	48	N/A	$697
COUNTY-OTHER, WISE	C	CONSERVATION - WISE COUNTY	DEMAND REDUCTION	12	24	35	67	108	156	$0	$0
COUNTY-OTHER, WISE	C	CONSERVATION, WATER LOSS CONTROL - WISE COUNTY	DEMAND REDUCTION	18	18	0	0	0	0	$962	N/A
COUNTY-OTHER, WISE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	471	0	N/A	N/A
COUNTY-OTHER, WISE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	28	0	N/A	N/A
COUNTY-OTHER, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	59	N/A	$1061
COUNTY-OTHER, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	985	N/A	$1061
COUNTY-OTHER, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	5	13	20	N/A	$1061
COUNTY-OTHER, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	76	212	334	N/A	$1061
COUNTY-OTHER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	2	4	4	6	5	N/A	$157
COUNTY-OTHER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	19	27	58	101	90	N/A	$157
COUNTY-OTHER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	1	1	3	7	N/A	$157
COUNTY-OTHER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	5	7	17	39	120	N/A	[illegible]
COUNTY-OTHER, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	6	10	21	24	25	N/A	$114
COUNTY-OTHER, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	47	78	324	384	415	N/A	$114

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
COUNTY-OTHER, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	5	12	8	12	N/A	$149
COUNTY-OTHER, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	37	179	124	196	N/A	$149
COUNTY-OTHER, WISE	C	WISE COUNTY WSD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	467	421	356	1,098	1,671	2,083	$0	$0
CRANDALL	C	CONSERVATION - CRANDALL	DEMAND REDUCTION	11	20	35	47	51	56	$11970	$22056
CRANDALL	C	CONSERVATION, WATER LOSS CONTROL - CRANDALL	DEMAND REDUCTION	4	4	0	0	0	0	$1691	N/A
CRANDALL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	37	33	38	51	34	23	$225	$84
CRANDALL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	28	188	228	324	219	153	$506	$71
CRANDALL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	89	59	48	36	1	0	$153	N/A
CRANDALL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	67	N/A	$509
CRANDALL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	67	91	117	87	N/A	$1315
CRANDALL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	113	129	N/A	$955
CRANDALL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	14	44	71	52	39	N/A	$0
CRANDALL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	12	36	60	46	33	N/A	$0
CRANDALL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	19	70	135	110	80	N/A	$0
CRANDALL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	7	20	34	26	19	N/A	$0
CRANDALL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	6	7	10	5	4	$19	$0
CRANDALL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	84	N/A	$640
CRANDALL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	38	28	N/A	$640
CROSS ROADS	C	CONSERVATION - CROSS ROADS	DEMAND REDUCTION	7	13	23	25	28	30	$6419	$10622
CROSS ROADS	C	CONSERVATION, WATER LOSS CONTROL - CROSS ROADS	DEMAND REDUCTION	2	2	0	0	0	0	$1357	N/A
CROSS ROADS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	4	11	51	52	43	N/A	$221
CROSS ROADS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	11	35	46	41	31	N/A	$515
CROSS ROADS	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	2	4	4	4	3	N/A	$0
CROSS ROADS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	92	N/A	$837
CROSS ROADS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	18	31	N/A	$837
CROSS ROADS	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	12	14	11	20	N/A	$3
CROSS ROADS	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	6	7	6	11	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
CROSS ROADS	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	81	143	167	187	119	N/A	$80
CROSS ROADS	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	24	63	75	63	58	N/A	$80
CROSS ROADS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	16	N/A	$483
CROSS ROADS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	18	14	N/A	$697
CROWLEY	C	CONSERVATION - CROWLEY	DEMAND REDUCTION	8	18	33	52	83	113	$0	$0
CROWLEY	C	CONSERVATION, WATER LOSS CONTROL - CROWLEY	DEMAND REDUCTION	12	12	0	0	0	0	$28623	N/A
CROWLEY	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	1,032	0	N/A	N/A
CROWLEY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,652	N/A	$1061
CROWLEY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	216	462	560	N/A	$1061
CROWLEY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	248	198	227	164	219	151	$442	$157
CROWLEY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	158	46	58	50	87	203	$442	$157
CROWLEY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	501	648	924	837	695	N/A	$114
CROWLEY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	306	512	271	329	N/A	$149
CULLEOKA WSC	C	CONSERVATION - CULLEOKA WSC	DEMAND REDUCTION	1	2	6	10	13	20	$0	$0
CULLEOKA WSC	C	CONSERVATION, WATER LOSS CONTROL - CULLEOKA WSC	DEMAND REDUCTION	2	2	0	0	0	0	$1333	[illegible]
CULLEOKA WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	9	16	24	18	15	$225	$84
CULLEOKA WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	4	54	99	145	115	105	$506	$71
CULLEOKA WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	13	17	21	16	1	0	$153	N/A
CULLEOKA WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	46	N/A	$509
CULLEOKA WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	33	48	67	62	N/A	$1315
CULLEOKA WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1,075	93	N/A	$955
CULLEOKA WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	3	4	3	4	$19	$0
CULLEOKA WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	716	N/A	$640
CULLEOKA WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	22	21	N/A	$640
DALLAS	C	CONSERVATION - DALLAS	DEMAND REDUCTION	9,441	24,719	37,456	41,876	42,608	42,020	$1957589	$5118074
DALLAS	C	CONSERVATION, WATER LOSS CONTROL - DALLAS	DEMAND REDUCTION	1,376	1,376	0	0	0	0	$261452	N/A
DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	1,886	3,025	8,718	31,812	40,083	43,278	$153	$221
DALLAS	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	0	0	4	100	174	60	N/A	[illegible]
DALLAS	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	4	114	277	116	N/A	$0
DALLAS	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	0	0	5	136	264	99	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
DALLAS	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	96	88	70	333	583	198	$0	$0
DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	9,629	27,488	29,036	31,463	30,839	N/A	$515
DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	16,270	N/A	$483
DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	13,849	13,716	N/A	$697
DALWORTHINGTON GARDENS	C	CONSERVATION - DALWORTHINGTON GARDENS	DEMAND REDUCTION	12	20	28	32	35	40	$6558	$7244
DALWORTHINGTON GARDENS	C	CONSERVATION, WATER LOSS CONTROL - DALWORTHINGTON GARDENS	DEMAND REDUCTION	5	5	0	0	0	0	$2991	N/A
DALWORTHINGTON GARDENS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	62	73	59	45	32	N/A	$0
DALWORTHINGTON GARDENS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	71	0	N/A	N/A
DALWORTHINGTON GARDENS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	114	N/A	$1061
DALWORTHINGTON GARDENS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	17	32	39	N/A	$1061
DALWORTHINGTON GARDENS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	8	17	13	15	10	N/A	$157
DALWORTHINGTON GARDENS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	4	4	7	14	N/A	$157
DALWORTHINGTON GARDENS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	19	48	74	57	48	N/A	$114
DALWORTHINGTON GARDENS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	22	40	19	23	N/A	$149
DAWSON	C	CONSERVATION - DAWSON	DEMAND REDUCTION	0	3	5	6	7	8	N/A	$4143
DAWSON	C	CONSERVATION, WATER LOSS CONTROL - DAWSON	DEMAND REDUCTION	1	1	0	0	0	0	$251	N/A
DAWSON	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	30	65	85	N/A	$596
DAWSON	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	53	65	50	36	39	N/A	$0
DECATUR	C	CONSERVATION - DECATUR	DEMAND REDUCTION	31	68	122	175	226	286	$23438	$65500
DECATUR	C	CONSERVATION, WATER LOSS CONTROL - DECATUR	DEMAND REDUCTION	12	12	0	0	0	0	$19936	N/A
DECATUR	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	1,447	0	N/A	N/A
DECATUR	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,311	N/A	$1061
DECATUR	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,311	N/A	$1061
DECATUR	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	374	648	783	N/A	$1061
DECATUR	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	374	648	783	N/A	$1061
DECATUR	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	261	324	382	284	308	211	$442	$157
DECATUR	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	165	74	98	86	120	282	$442	$157
DECATUR	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	821	1,092	1,599	1,176	973	N/A	$114
DECATUR	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	516	884	382	460	N/A	$149
DECATUR	C	WISE COUNTY WSD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	644	502	401	623	737	795	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
DENISON	C	CONSERVATION - DENISON	DEMAND REDUCTION	88	157	236	288	372	508	$62691	$100000
DENISON	C	CONSERVATION, WATER LOSS CONTROL - DENISON	DEMAND REDUCTION	144	397	395	433	510	637	$125866	$173433
DENISON	C	DENISON UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	2,191	2,140	2,101	4,281	6,454	N/A	$0
DENTON	C	CONSERVATION - DENTON	DEMAND REDUCTION	385	811	1,410	1,982	2,983	3,966	$210145	$570694
DENTON	C	CONSERVATION, WATER LOSS CONTROL - DENTON	DEMAND REDUCTION	145	145	0	0	0	0	$162207	N/A
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	0	258	864	1,560	2,881	3,738	N/A	$0
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	567	1,845	3,237	5,782	7,198	N/A	$0
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	6,275	7,958	9,867	11,625	11,294	10,922	$0	$0
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	202	739	1,820	4,563	7,262	N/A	$0
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	0	291	1,082	2,151	4,369	6,217	N/A	$0
DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	896	2,957	5,268	9,630	12,388	N/A	$0
DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	87	539	2,953	6,375	8,778	N/A	$221
DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	258	1,654	2,684	4,989	6,237	N/A	$515
DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	3,291	N/A	[illegible]
DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	2,196	2,774	N/A	$697
DENTON COUNTY FWSD #10	C	CONSERVATION - DENTON COUNTY FWSD #10	DEMAND REDUCTION	20	68	94	105	114	124	$21740	$43250
DENTON COUNTY FWSD #10	C	CONSERVATION, IRRIGATION RESTRICTIONS – DENTON COUNTY FWSD #10	DEMAND REDUCTION	1	7	7	7	7	7	$3505	$6142
DENTON COUNTY FWSD #10	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #10	DEMAND REDUCTION	7	7	0	0	0	0	$3677	N/A
DENTON COUNTY FWSD #10	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	11	28	130	134	111	N/A	$221
DENTON COUNTY FWSD #10	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	7	17	78	80	66	N/A	$221
DENTON COUNTY FWSD #10	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	34	89	118	105	79	N/A	$515
DENTON COUNTY FWSD #10	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	21	54	71	63	47	N/A	$515
DENTON COUNTY FWSD #10	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	7	10	12	9	8	N/A	$0
DENTON COUNTY FWSD #10	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	4	6	7	5	5	N/A	$0
DENTON COUNTY FWSD #10	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	239	N/A	$837
DENTON COUNTY FWSD #10	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	143	N/A	$837
DENTON COUNTY FWSD #10	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	46	81	N/A	$837
DENTON COUNTY FWSD #10	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	27	48	N/A	[illegible]
DENTON COUNTY FWSD #10	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	30	35	29	51	N/A	$3

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
DENTON COUNTY FWSD #10	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	18	21	17	30	N/A	$3
DENTON COUNTY FWSD #10	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	15	18	15	28	N/A	$3
DENTON COUNTY FWSD #10	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	9	11	9	17	N/A	$0
DENTON COUNTY FWSD #10	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	245	361	429	487	311	N/A	$80
DENTON COUNTY FWSD #10	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	155	220	257	290	186	N/A	$80
DENTON COUNTY FWSD #10	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	70	159	193	162	147	N/A	$80
DENTON COUNTY FWSD #10	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	44	97	116	97	88	N/A	$80
DENTON COUNTY FWSD #10	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	42	N/A	$483
DENTON COUNTY FWSD #10	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	25	N/A	$483
DENTON COUNTY FWSD #10	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	46	35	N/A	$697
DENTON COUNTY FWSD #10	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	28	21	N/A	$697
DENTON COUNTY FWSD #1A	C	CONSERVATION - DENTON COUNTY FWSD #1A	DEMAND REDUCTION	49	140	234	259	285	310	$36833	$70000
DENTON COUNTY FWSD #1A	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #1A	DEMAND REDUCTION	18	18	0	0	0	0	$13721	N/A
DENTON COUNTY FWSD #1A	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	34	56	120	365	398	358	$153	$221
DENTON COUNTY FWSD #1A	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	24	76	346	358	339	N/A	$221
DENTON COUNTY FWSD #1A	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	1	29	33	40	19	N/A	$0
DENTON COUNTY FWSD #1A	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	177	381	334	313	255	N/A	$515
DENTON COUNTY FWSD #1A	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	76	239	317	281	241	N/A	$515
DENTON COUNTY FWSD #1A	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	16	27	31	25	24	N/A	$0
DENTON COUNTY FWSD #1A	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	729	N/A	$837
DENTON COUNTY FWSD #1A	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	122	247	N/A	$837
DENTON COUNTY FWSD #1A	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	80	94	77	155	N/A	$3
DENTON COUNTY FWSD #1A	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	41	49	41	86	N/A	$0
DENTON COUNTY FWSD #1A	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	549	969	1,146	1,300	948	N/A	$80
DENTON COUNTY FWSD #1A	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	157	426	516	433	448	N/A	$80
DENTON COUNTY FWSD #1A	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	135	N/A	$483
DENTON COUNTY FWSD #1A	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	127	N/A	$483
DENTON COUNTY FWSD #1A	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	138	113	N/A	$697
DENTON COUNTY FWSD #1A	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	124	107	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
DENTON COUNTY FWSD #7	C	CONSERVATION - DENTON COUNTY FWSD #7	DEMAND REDUCTION	45	74	102	113	125	136	$35667	$35667
DENTON COUNTY FWSD #7	C	CONSERVATION, IRRIGATION RESTRICTIONS – DENTON COUNTY FWSD #7	DEMAND REDUCTION	4	8	8	8	8	8	$5564	$4951
DENTON COUNTY FWSD #7	C	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #7	DEMAND REDUCTION	17	17	0	0	0	0	$56565	N/A
DENTON COUNTY FWSD #7	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	19	50	226	233	193	N/A	$221
DENTON COUNTY FWSD #7	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	61	157	207	183	137	N/A	$515
DENTON COUNTY FWSD #7	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	13	18	20	16	14	N/A	$0
DENTON COUNTY FWSD #7	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	415	N/A	$837
DENTON COUNTY FWSD #7	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	80	141	N/A	$837
DENTON COUNTY FWSD #7	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	53	61	51	88	N/A	$3
DENTON COUNTY FWSD #7	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	27	32	27	49	N/A	$0
DENTON COUNTY FWSD #7	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	440	635	749	845	540	N/A	$80
DENTON COUNTY FWSD #7	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	126	280	337	282	255	N/A	$80
DENTON COUNTY FWSD #7	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	73	N/A	[illegible]
DENTON COUNTY FWSD #7	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	81	61	N/A	$697
DESOTO	C	CONSERVATION - DESOTO	DEMAND REDUCTION	126	219	326	392	465	545	$104617	$132718
DESOTO	C	CONSERVATION, IRRIGATION RESTRICTIONS – DESOTO	DEMAND REDUCTION	6	15	17	19	21	24	$21233	$30333
DESOTO	C	CONSERVATION, WATER LOSS CONTROL - DESOTO	DEMAND REDUCTION	94	199	163	176	190	204	$204739	$264534
DESOTO	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	211	218	469	1,452	1,662	1,740	$153	$221
DESOTO	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	693	1,479	1,326	1,304	1,241	N/A	$515
DESOTO	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	655	N/A	$483
DESOTO	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	574	552	N/A	$697
DOUBLE OAK	C	CONSERVATION - DOUBLE OAK	DEMAND REDUCTION	8	12	16	18	20	22	$8444	$8444
DOUBLE OAK	C	CONSERVATION, WATER LOSS CONTROL - DOUBLE OAK	DEMAND REDUCTION	3	3	0	0	0	0	$1450	N/A
DOUBLE OAK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	1	4	20	23	18	N/A	$221
DOUBLE OAK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	4	12	18	18	13	N/A	$515
DOUBLE OAK	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	1	1	2	2	1	N/A	$0
DOUBLE OAK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	40	N/A	$837
DOUBLE OAK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	5	11	N/A	$837
DOUBLE OAK	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	4	5	5	8	N/A	[illegible]
DOUBLE OAK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	29	49	63	78	53	N/A	$80

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
DOUBLE OAK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	8	22	29	27	25	N/A	$80
DOUBLE OAK	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	7	N/A	$483
DOUBLE OAK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	8	6	N/A	$697
DUNCANVILLE	C	CONSERVATION - DUNCANVILLE	DEMAND REDUCTION	20	43	63	83	103	124	$0	$0
DUNCANVILLE	C	CONSERVATION, WATER LOSS CONTROL - DUNCANVILLE	DEMAND REDUCTION	30	30	0	0	0	0	$68704	N/A
DUNCANVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	231	187	327	887	919	886	$153	$221
DUNCANVILLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	596	1,031	809	721	633	N/A	$515
DUNCANVILLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	333	N/A	$483
DUNCANVILLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	318	281	N/A	$697
EAST CEDAR CREEK FWSD	C	CONSERVATION - EAST CEDAR CREEK FWSD	DEMAND REDUCTION	2	5	10	14	19	24	$0	$0
EAST CEDAR CREEK FWSD	C	CONSERVATION, WATER LOSS CONTROL - EAST CEDAR CREEK FWSD	DEMAND REDUCTION	4	4	0	0	0	0	$2409	N/A
EAST CEDAR CREEK FWSD	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	141	0	N/A	N/A
EAST CEDAR CREEK FWSD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	233	N/A	$1061
EAST CEDAR CREEK FWSD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	34	63	79	N/A	$1061
EAST CEDAR CREEK FWSD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	254	255	286	263	327	384	$442	$157
EAST CEDAR CREEK FWSD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	9	7	12	29	N/A	$157
EAST CEDAR CREEK FWSD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	43	95	146	115	98	N/A	$114
EAST CEDAR CREEK FWSD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	45	81	37	46	N/A	$149
EAST FORK SUD	C	CONSERVATION - EAST FORK SUD	DEMAND REDUCTION	2	5	9	14	22	30	$0	$0
EAST FORK SUD	C	CONSERVATION, WATER LOSS CONTROL - EAST FORK SUD	DEMAND REDUCTION	3	3	0	0	0	0	$37656	N/A
EAST FORK SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	9	19	24	34	28	23	$225	$84
EAST FORK SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	7	106	146	213	184	159	$506	$71
EAST FORK SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	22	33	31	23	1	0	$153	N/A
EAST FORK SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	70	N/A	$509
EAST FORK SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	48	71	107	94	N/A	$1315
EAST FORK SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	104	140	N/A	$955
EAST FORK SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	3	4	6	5	4	$19	$0
EAST FORK SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	91	N/A	$640
EAST FORK SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	35	31	N/A	$640
ECTOR	C	CONSERVATION - ECTOR	DEMAND REDUCTION	0	1	1	1	2	2	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ECTOR	C	CONSERVATION, WATER LOSS CONTROL - ECTOR	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
ECTOR	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	46	50	55	62	71	N/A	$71
EDGECLIFF VILLAGE	C	CONSERVATION - EDGECLIFF VILLAGE	DEMAND REDUCTION	7	10	15	16	17	18	$8238	$8238
EDGECLIFF VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - EDGECLIFF VILLAGE	DEMAND REDUCTION	3	3	0	0	0	0	$5774	N/A
EDGECLIFF VILLAGE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	51	58	46	34	23	N/A	$0
EDGECLIFF VILLAGE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	55	0	N/A	N/A
EDGECLIFF VILLAGE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	86	N/A	$1061
EDGECLIFF VILLAGE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	14	25	29	N/A	$1061
EDGECLIFF VILLAGE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	8	15	11	12	8	N/A	$157
EDGECLIFF VILLAGE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	3	2	4	11	N/A	$157
EDGECLIFF VILLAGE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	21	42	60	45	36	N/A	$114
EDGECLIFF VILLAGE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	20	34	15	18	N/A	$149
ENNIS	C	CONSERVATION - ENNIS	DEMAND REDUCTION	55	104	163	247	436	790	$55500	$160000
ENNIS	C	CONSERVATION – WASTE PROHIBITION, ENNIS	DEMAND REDUCTION	5	13	17	28	52	94	$8681	$[illegible]
ENNIS	C	CONSERVATION, IRRIGATION RESTRICTIONS – ENNIS	DEMAND REDUCTION	1	4	5	8	15	28	$8681	$40338
ENNIS	C	CONSERVATION, WATER LOSS CONTROL - ENNIS	DEMAND REDUCTION	99	292	308	418	672	1,117	$97224	$338159
ENNIS	C	ENNIS INDIRECT REUSE	C | TRINITY INDIRECT REUSE	0	0	518	1,392	3,696	3,696	N/A	$481
ENNIS	C	ENNIS UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	144	1,536	1,558	N/A	$0
ENNIS	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	5	8	9	11	12	14	$0	$0
ENNIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,004	N/A	$1061
ENNIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	0	993	N/A	$1061
ENNIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	20	0	0	0	0	N/A	N/A
ENNIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	63	49	153	304	2,245	N/A	$114
ENNIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	0	0	1,061	N/A	$149
EULESS	C	CONSERVATION - EULESS	DEMAND REDUCTION	178	274	300	119	149	178	$104214	$0
EULESS	C	CONSERVATION – WASTE PROHIBITION, EULESS	DEMAND REDUCTION	14	30	29	0	0	0	$21108	N/A
EULESS	C	CONSERVATION, WATER LOSS CONTROL - EULESS	DEMAND REDUCTION	45	45	0	0	0	0	$107502	N/A
EULESS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	899	0	N/A	N/A
EULESS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,384	N/A	$[illegible]
EULESS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,384	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies							
				2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
EULESS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	922	403	469	N/A	$1061
EULESS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	922	403	469	N/A	$1061
EULESS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	109	212	177	191	127	N/A	$157
EULESS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	26	54	55	74	169	N/A	$157
EULESS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	277	605	580	731	583	N/A	$114
EULESS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	286	274	237	275	N/A	$149
EUSTACE	C	CONSERVATION - EUSTACE	DEMAND REDUCTION	0	1	1	3	4	6	N/A	$0
EUSTACE	C	CONSERVATION, WATER LOSS CONTROL - EUSTACE	DEMAND REDUCTION	1	1	0	0	0	0	$422	N/A
EUSTACE	C	EUSTACE NEW WELL IN CARRIZO-WILCOX	C | CARRIZO-WILCOX AQUIFER | HENDERSON COUNTY	103	103	103	103	103	103	$992	$254
EVERMAN	C	CONSERVATION - EVERMAN	DEMAND REDUCTION	2	4	5	7	8	10	$0	$0
EVERMAN	C	CONSERVATION, WATER LOSS CONTROL - EVERMAN	DEMAND REDUCTION	3	3	0	0	0	0	$5216	N/A
FAIRFIELD	C	CONSERVATION - FAIRFIELD	DEMAND REDUCTION	2	5	7	32	50	78	$0	$27500
FAIRFIELD	C	CONSERVATION, WATER LOSS CONTROL - FAIRFIELD	DEMAND REDUCTION	3	3	0	0	0	0	$4089	N/A
FAIRFIELD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	413	N/A	$1061
FAIRFIELD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	22	68	140	N/A	$1061
FAIRFIELD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	17	32	38	N/A	$157
FAIRFIELD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	5	13	50	N/A	$157
FAIRFIELD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	95	123	174	N/A	$114
FAIRFIELD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	52	40	83	N/A	$149
FAIRFIELD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	151	0	N/A	N/A
FAIRVIEW	C	CONSERVATION - FAIRVIEW	DEMAND REDUCTION	68	122	219	243	266	290	$36650	$53342
FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - FAIRVIEW	DEMAND REDUCTION	23	23	0	0	0	0	$18562	N/A
FAIRVIEW	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	64	128	179	208	145	102	$225	$84
FAIRVIEW	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	48	723	1,075	1,303	950	701	$506	$71
FAIRVIEW	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	152	228	226	144	6	0	$153	N/A
FAIRVIEW	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	309	N/A	$509
FAIRVIEW	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	354	434	555	414	N/A	$1315
FAIRVIEW	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	535	617	N/A	$955
FAIRVIEW	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	10	21	31	37	26	19	$19	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

				Water Management Strategy Supplies							
WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
FAIRVIEW	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	403	N/A	$640
FAIRVIEW	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	181	137	N/A	$640
FARMERS BRANCH	C	CONSERVATION - FARMERS BRANCH	DEMAND REDUCTION	120	205	297	348	405	464	$70920	$86034
FARMERS BRANCH	C	CONSERVATION – WASTE PROHIBITION, FARMERS BRANCH	DEMAND REDUCTION	8	19	23	27	31	35	$11929	$14921
FARMERS BRANCH	C	CONSERVATION, IRRIGATION RESTRICTIONS – FARMERS BRANCH	DEMAND REDUCTION	2	6	7	8	9	10	$11929	$14921
FARMERS BRANCH	C	CONSERVATION, WATER LOSS CONTROL - FARMERS BRANCH	DEMAND REDUCTION	84	168	129	136	144	151	$140304	$145521
FARMERS BRANCH	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	205	205	429	1,293	1,444	1,483	$153	$221
FARMERS BRANCH	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	653	1,351	1,181	1,133	1,057	N/A	$515
FARMERS BRANCH	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	558	N/A	$483
FARMERS BRANCH	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	499	470	N/A	$697
FARMERSVILLE	C	CONSERVATION - FARMERSVILLE	DEMAND REDUCTION	3	15	23	31	38	46	$0	$0
FARMERSVILLE	C	CONSERVATION, WATER LOSS CONTROL - FARMERSVILLE	DEMAND REDUCTION	5	5	0	0	0	0	$2122	N/A
FARMERSVILLE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	16	60	63	72	50	34	$225	$84
FARMERSVILLE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	12	342	376	451	326	239	$506	[illegible]
FARMERSVILLE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	37	108	79	50	2	0	$153	N/A
FARMERSVILLE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	105	N/A	$509
FARMERSVILLE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	124	150	191	141	N/A	$1315
FARMERSVILLE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	184	211	N/A	$955
FARMERSVILLE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	10	10	13	9	8	$19	$0
FARMERSVILLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	138	N/A	$640
FARMERSVILLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	62	47	N/A	$640
FATE	C	CONSERVATION - FATE	DEMAND REDUCTION	23	53	99	138	187	312	$27024	$92500
FATE	C	CONSERVATION, WATER LOSS CONTROL - FATE	DEMAND REDUCTION	9	9	0	0	0	0	$9724	N/A
FATE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	25	60	84	122	105	113	$225	$84
FATE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	18	337	500	763	683	774	$506	$71
FATE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	58	106	105	84	4	0	$153	N/A
FATE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	341	N/A	[illegible]
FATE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	165	254	400	457	N/A	$1315

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
FATE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	385	681	N/A	$955
FATE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	9	14	21	17	20	$19	$0
FATE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	445	N/A	$640
FATE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	130	151	N/A	$640
FERRIS	C	CONSERVATION - FERRIS	DEMAND REDUCTION	2	4	6	10	20	44	$0	$0
FERRIS	C	CONSERVATION, WATER LOSS CONTROL - FERRIS	DEMAND REDUCTION	2	2	0	0	0	0	$3573	N/A
FERRIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	28	0	0	0	0	0	$1085	N/A
FERRIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	76	142	214	555	1,395	N/A	$114
FLOWER MOUND	C	CONSERVATION - FLOWER MOUND	DEMAND REDUCTION	253	501	690	765	840	916	$125555	$143000
FLOWER MOUND	C	CONSERVATION, WATER LOSS CONTROL - FLOWER MOUND	DEMAND REDUCTION	95	95	0	0	0	0	$88928	N/A
FLOWER MOUND	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	243	225	412	1,152	1,208	1,172	$153	$221
FLOWER MOUND	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	82	210	952	980	810	N/A	$221
FLOWER MOUND	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	231	165	94	9	0	0	$0	N/A
FLOWER MOUND	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	558	346	0	0	0	0	$0	N/A
FLOWER MOUND	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	152	130	78	10	0	0	$0	N/A
FLOWER MOUND	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	235	190	117	12	0	0	$0	N/A
FLOWER MOUND	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	831	631	319	29	0	0	$0	N/A
FLOWER MOUND	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	716	1,299	1,051	949	836	N/A	$515
FLOWER MOUND	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	262	662	869	769	577	N/A	$515
FLOWER MOUND	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	54	75	85	67	58	N/A	$0
FLOWER MOUND	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,743	N/A	$837
FLOWER MOUND	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	334	591	N/A	$837
FLOWER MOUND	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	222	258	210	370	N/A	$3
FLOWER MOUND	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	113	135	113	205	N/A	$0
FLOWER MOUND	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	1,887	2,688	3,145	3,555	2,268	N/A	$80
FLOWER MOUND	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	540	1,183	1,416	1,185	1,073	N/A	$80
FLOWER MOUND	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	441	N/A	$483
FLOWER MOUND	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	305	N/A	$483
FLOWER MOUND	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	418	372	N/A	$697
FLOWER MOUND	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	338	257	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
FOREST HILL	C	CONSERVATION - FOREST HILL	DEMAND REDUCTION	5	9	14	23	36	56	$0	$0
FOREST HILL	C	CONSERVATION, WATER LOSS CONTROL - FOREST HILL	DEMAND REDUCTION	7	7	0	0	0	0	$13346	N/A
FOREST HILL	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	143	175	162	153	135	N/A	$0
FOREST HILL	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	269	0	N/A	N/A
FOREST HILL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	537	N/A	$1061
FOREST HILL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	55	120	182	N/A	$1061
FOREST HILL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	29	49	41	57	49	N/A	$157
FOREST HILL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	6	13	13	22	66	N/A	$157
FOREST HILL	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	73	141	234	217	226	N/A	$114
FOREST HILL	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	66	129	71	107	N/A	$149
FORNEY	C	CONSERVATION - FORNEY	DEMAND REDUCTION	11	25	48	78	140	225	$0	$0
FORNEY	C	CONSERVATION, WATER LOSS CONTROL - FORNEY	DEMAND REDUCTION	16	16	0	0	0	0	$25802	N/A
FORNEY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	53	96	131	183	184	181	$225	$84
FORNEY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	39	543	785	1,144	1,200	1,249	$506	[illegible]
FORNEY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	124	171	166	126	7	0	$153	N/A
FORNEY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	550	N/A	$509
FORNEY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	259	381	702	716	N/A	$1315
FORNEY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	676	1,068	N/A	$955
FORNEY	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	198	N/A	$0
FORNEY	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	167	N/A	$0
FORNEY	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	0	0	0	413	N/A	$0
FORNEY	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	95	N/A	$0
FORNEY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	8	16	22	32	32	36	$19	$0
FORNEY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	698	N/A	$640
FORNEY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	229	236	N/A	[illegible]
FORNEY LAKE WSC	C	CONSERVATION - FORNEY LAKE WSC	DEMAND REDUCTION	12	24	41	55	99	152	$15307	[illegible]
FORNEY LAKE WSC	C	CONSERVATION, WATER LOSS CONTROL - FORNEY LAKE WSC	DEMAND REDUCTION	4	4	0	0	0	0	$3741	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
FORNEY LAKE WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	13	27	35	48	55	55	$225	$84
FORNEY LAKE WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	152	206	302	362	382	$506	$71
FORNEY LAKE WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	30	48	43	33	2	0	$153	N/A
FORNEY LAKE WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	167	N/A	$509
FORNEY LAKE WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	68	101	212	224	N/A	$1315
FORNEY LAKE WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	204	334	N/A	$955
FORNEY LAKE WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	4	5	9	10	11	$19	$0
FORNEY LAKE WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	218	N/A	$640
FORNEY LAKE WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	69	74	N/A	$640
FORT WORTH	C	CONSERVATION - FORT WORTH	DEMAND REDUCTION	5,456	8,785	12,454	14,455	16,830	19,409	$1859151	$2564931
FORT WORTH	C	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	DEMAND REDUCTION	18,776	20,583	8,540	6,310	3,430	0	$6709080	N/A
FORT WORTH	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	3,971	0	N/A	N/A
FORT WORTH	C	FORT WORTH ALLIANCE DIRECT REUSE	C | DIRECT REUSE	0	2,800	7,841	7,841	7,841	7,841	N/A	$20
FORT WORTH	C	FORT WORTH DIRECT REUSE	C | DIRECT REUSE	897	897	897	897	897	897	$1362	$267
FORT WORTH	C	FORT WORTH FUTURE DIRECT REUSE	C | DIRECT REUSE	0	6,934	8,166	8,166	8,166	8,166	N/A	$268
FORT WORTH	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	8,468	16,683	13,629	8,501	2,885	N/A	$0
FORT WORTH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	64,513	N/A	$1061
FORT WORTH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	30,793	40,328	23,696	N/A	$1061
FORT WORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	1,271	552	7,623	6,482	3,551	1,777	$442	$157
FORT WORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	809	127	1,957	1,966	3,076	5,730	$442	$157
FORT WORTH	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,401	15,258	19,369	29,431	28,771	N/A	$114
FORT WORTH	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	16,794	9,152	19,048	12,918	N/A	$149
FORT WORTH	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	902	0	N/A	N/A
FRISCO	C	CONSERVATION - FRISCO	DEMAND REDUCTION	1,522	2,438	3,572	3,793	4,016	4,238	$426691	$647858
FRISCO	C	CONSERVATION, WATER LOSS CONTROL - FRISCO	DEMAND REDUCTION	208	208	0	0	0	0	$153100	N/A
FRISCO	C	FRISCO DIRECT REUSE	C | DIRECT REUSE	2,240	3,360	5,650	5,650	5,650	5,650	$740	$222
FRISCO	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	319	1,078	1,397	1,646	1,157	821	$225	$84
FRISCO	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	239	6,100	8,375	10,290	7,571	5,649	$506	$71
FRISCO	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	757	1,923	1,765	1,134	44	0	$153	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
FRISCO	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	2,485	N/A	$509
FRISCO	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	2,757	3,430	4,429	3,330	N/A	$1315
FRISCO	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	4,268	4,970	N/A	$955
FRISCO	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	52	179	239	290	212	156	$19	$0
FRISCO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,245	N/A	$640
FRISCO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1,446	1,099	N/A	$640
FROST	C	CONSERVATION - FROST	DEMAND REDUCTION	0	0	1	1	2	2	N/A	$0
FROST	C	CONSERVATION, WATER LOSS CONTROL - FROST	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
FROST	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	14	29	38	N/A	$596
FROST	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	24	29	23	17	18	N/A	$0
GAINESVILLE	C	CONSERVATION - GAINESVILLE	DEMAND REDUCTION	8	17	27	37	56	93	$0	$0
GAINESVILLE	C	CONSERVATION, WATER LOSS CONTROL - GAINESVILLE	DEMAND REDUCTION	12	12	0	0	0	0	$18905	N/A
GAINESVILLE	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	0	0	0	0	1,384	N/A	[illegible]
GARLAND	C	CONSERVATION - GARLAND	DEMAND REDUCTION	505	823	375	495	617	741	$278875	$0
GARLAND	C	CONSERVATION, WATER LOSS CONTROL - GARLAND	DEMAND REDUCTION	189	189	0	0	0	0	$196856	N/A
GARLAND	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	534	914	1,024	1,168	805	563	$225	$84
GARLAND	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	401	5,174	6,134	7,298	5,271	3,872	$506	$71
GARLAND	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	1,266	1,631	1,293	804	31	0	$153	N/A
GARLAND	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	1,704	N/A	$509
GARLAND	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	2,019	2,432	3,083	2,284	N/A	$1315
GARLAND	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	2,971	3,408	N/A	$955
GARLAND	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	86	152	174	206	147	106	$19	$0
GARLAND	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,225	N/A	$640
GARLAND	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1,006	754	N/A	$640
GARRETT	C	CONSERVATION - GARRETT	DEMAND REDUCTION	4	10	16	24	30	78	$3087	$16611
GARRETT	C	CONSERVATION, WATER LOSS CONTROL - GARRETT	DEMAND REDUCTION	2	2	0	0	0	0	$778	N/A
GARRETT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	233	0	N/A	[illegible]
GARRETT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,377	N/A	$837
GARRETT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	64	205	0	N/A	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
GARRETT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	132	0	0	N/A	N/A
GASTONIA-SCURRY SUD	C	CONSERVATION - GASTONIA-SCURRY SUD	DEMAND REDUCTION	2	5	10	16	34	61	$0	$0
GASTONIA-SCURRY SUD	C	CONSERVATION, WATER LOSS CONTROL - GASTONIA-SCURRY SUD	DEMAND REDUCTION	3	3	0	0	0	0	$1021	N/A
GASTONIA-SCURRY SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	3	1	2	5	84	257	$153	$221
GASTONIA-SCURRY SUD	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	4	4	3	3	40	116	$0	$0
GASTONIA-SCURRY SUD	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	11	9	9	8	82	225	$0	$0
GASTONIA-SCURRY SUD	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	3	3	3	3	64	226	$0	$0
GASTONIA-SCURRY SUD	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	4	4	4	4	61	193	$0	$0
GASTONIA-SCURRY SUD	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	15	14	12	11	134	385	$0	$0
GASTONIA-SCURRY SUD	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	4	7	5	66	183	N/A	$515
GASTONIA-SCURRY SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	10	19	26	37	32	18	$225	$84
GASTONIA-SCURRY SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	7	111	155	228	206	128	$506	$71
GASTONIA-SCURRY SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	23	35	33	25	1	0	$153	N/A
GASTONIA-SCURRY SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	56	N/A	$509
GASTONIA-SCURRY SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	51	76	121	76	N/A	$1315
GASTONIA-SCURRY SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	116	113	N/A	$955
GASTONIA-SCURRY SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	4	3	7	5	4	$19	$0
GASTONIA-SCURRY SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	74	N/A	$640
GASTONIA-SCURRY SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	39	25	N/A	$640
GASTONIA-SCURRY SUD	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	97	N/A	$483
GASTONIA-SCURRY SUD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	29	81	N/A	$697
GLENN HEIGHTS	C	CONSERVATION - GLENN HEIGHTS	DEMAND REDUCTION	6	17	31	51	76	123	$0	$0
GLENN HEIGHTS	C	CONSERVATION, WATER LOSS CONTROL - GLENN HEIGHTS	DEMAND REDUCTION	9	9	0	0	0	0	$6056	N/A
GLENN HEIGHTS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	64	67	152	517	645	851	$153	$221
GLENN HEIGHTS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	213	481	472	506	606	N/A	$515
GLENN HEIGHTS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	320	N/A	$483
GLENN HEIGHTS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	223	270	N/A	$697
GRAND PRAIRIE	C	ARLINGTON UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	925	878	1,206	1,068	1,272	1,134	$0	$0
GRAND PRAIRIE	C	CONSERVATION - GRAND PRARIE	DEMAND REDUCTION	469	884	442	585	731	877	$265135	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies							
				2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
GRAND PRAIRIE	C	CONSERVATION, WATER LOSS CONTROL - GRAND PRAIRIE	DEMAND REDUCTION	176	176	0	0	0	0	$172392	N/A
GRAND PRAIRIE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	827	937	1,801	4,293	4,429	4,209	$153	$221
GRAND PRAIRIE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	737	0	N/A	N/A
GRAND PRAIRIE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	251	301	239	177	121	N/A	$0
GRAND PRAIRIE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	243	0	N/A	N/A
GRAND PRAIRIE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	2,147	4,909	3,882	3,410	2,989	N/A	$515
GRAND PRAIRIE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	306	0	N/A	N/A
GRAND PRAIRIE	C	MANSFIELD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	3,018	2,373	1,850	1,614	1,410	1,229	$0	$0
GRAND PRAIRIE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	428	N/A	$1061
GRAND PRAIRIE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,995	N/A	$1061
GRAND PRAIRIE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	214	125	145	N/A	$1061
GRAND PRAIRIE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	459	579	675	N/A	$1061
GRAND PRAIRIE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	210	356	239	276	181	N/A	$157
GRAND PRAIRIE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	49	93	73	108	244	N/A	[illegible]
GRAND PRAIRIE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	528	1,014	1,261	1,050	840	N/A	$114
GRAND PRAIRIE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	481	688	340	395	N/A	$149
GRAND PRAIRIE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	1,577	N/A	$483
GRAND PRAIRIE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1,501	1,329	N/A	$697
GRAPEVINE	C	CONSERVATION - GRAPEVINE	DEMAND REDUCTION	247	445	622	688	756	824	$102414	$110000
GRAPEVINE	C	CONSERVATION, WATER LOSS CONTROL - GRAPEVINE	DEMAND REDUCTION	92	92	0	0	0	0	$270935	N/A
GRAPEVINE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	166	229	343	676	710	707	$153	$221
GRAPEVINE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,297	0	N/A	N/A
GRAPEVINE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	293	572	456	408	356	N/A	$515
GRAPEVINE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,021	N/A	$1061
GRAPEVINE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,297	581	685	N/A	$1061
GRAPEVINE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	570	789	762	276	185	N/A	$157
GRAPEVINE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	39	84	76	109	247	N/A	$157
GRAPEVINE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	428	939	816	1,053	851	N/A	$114
GRAPEVINE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	444	385	906	1,019	N/A	[illegible]
GRAPEVINE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	188	N/A	$483
GRAPEVINE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	180	158	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
GUN BARREL CITY	C	CONSERVATION - GUN BARREL CITY	DEMAND REDUCTION	3	7	11	16	31	59	$0	$0
GUN BARREL CITY	C	CONSERVATION, WATER LOSS CONTROL - GUN BARREL CITY	DEMAND REDUCTION	5	5	0	0	0	0	$1761	N/A
GUN BARREL CITY	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	229	0	N/A	N/A
GUN BARREL CITY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	564	N/A	$1061
GUN BARREL CITY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	39	103	191	N/A	$1061
GUN BARREL CITY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	324	316	308	305	531	931	$442	$157
GUN BARREL CITY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	5	9	9	20	69	N/A	$157
GUN BARREL CITY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	53	102	167	187	237	N/A	$114
GUN BARREL CITY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	48	93	60	112	N/A	$149
GUNTER	C	CONSERVATION - GUNTER	DEMAND REDUCTION	1	3	6	10	16	22	$0	$0
GUNTER	C	CONSERVATION, WATER LOSS CONTROL - GUNTER	DEMAND REDUCTION	2	17	0	0	0	0	$1693	N/A
GUNTER	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	97	263	411	559	708	N/A	$535
GUNTER	C	GUNTER NEW WELLS	C | TRINITY AQUIFER | GRAYSON COUNTY	50	100	100	100	100	100	$4660	$1180
HACKBERRY	C	CONSERVATION - HACKBERRY	DEMAND REDUCTION	4	9	15	20	28	36	$3746	$10685
HACKBERRY	C	CONSERVATION, WATER LOSS CONTROL - HACKBERRY	DEMAND REDUCTION	2	2	0	0	0	0	$913	N/A
HACKBERRY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	9	13	18	16	13	$225	$84
HACKBERRY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	3	54	76	114	101	90	$506	$71
HACKBERRY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	10	17	16	12	1	0	$153	N/A
HACKBERRY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	40	N/A	$509
HACKBERRY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	25	38	59	53	N/A	$1315
HACKBERRY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	57	79	N/A	$955
HACKBERRY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	2	1	4	2	4	N/A	$0
HACKBERRY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	52	N/A	$640
HACKBERRY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	19	18	N/A	$640
HALTOM CITY	C	CONSERVATION - HALTOM CITY	DEMAND REDUCTION	18	35	53	76	102	133	$0	$0
HALTOM CITY	C	CONSERVATION, WATER LOSS CONTROL - HALTOM CITY	DEMAND REDUCTION	26	26	0	0	0	0	$55168	N/A
HALTOM CITY	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	541	642	540	431	318	N/A	$0
HALTOM CITY	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	755	0	N/A	N/A
HALTOM CITY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,266	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
HALTOM CITY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	182	338	429	N/A	$1061
HALTOM CITY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	109	180	138	160	116	N/A	$157
HALTOM CITY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	25	47	43	63	155	N/A	$157
HALTOM CITY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	275	515	778	613	533	N/A	$114
HALTOM CITY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	243	429	199	252	N/A	$149
HASLET	C	CONSERVATION - HASLET	DEMAND REDUCTION	2	10	18	53	81	102	$0	$22056
HASLET	C	CONSERVATION – WASTE PROHIBITION, HASLET	DEMAND REDUCTION	0	3	8	19	27	31	N/A	$2934
HASLET	C	CONSERVATION, WATER LOSS CONTROL - HASLET	DEMAND REDUCTION	3	3	0	0	0	0	$1649	N/A
HASLET	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	60	81	146	153	119	N/A	$0
HASLET	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	242	0	N/A	N/A
HASLET	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	434	N/A	$1061
HASLET	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	43	108	147	N/A	$1061
HASLET	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	9	19	33	51	40	N/A	$157
HASLET	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	6	9	19	53	N/A	[illegible]
HASLET	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	25	55	184	197	183	N/A	$114
HASLET	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	26	101	65	86	N/A	$149
HEATH	C	CONSERVATION - HEATH	DEMAND REDUCTION	52	170	235	260	286	312	$32416	$60867
HEATH	C	CONSERVATION, IRRIGATION RESTRICTIONS – HEATH	DEMAND REDUCTION	6	28	28	28	28	28	$5053	$8911
HEATH	C	CONSERVATION, WATER LOSS CONTROL - HEATH	DEMAND REDUCTION	20	20	0	0	0	0	$56916	N/A
HEATH	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	54	187	196	228	158	112	$225	$84
HEATH	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	41	1,062	1,174	1,425	1,039	769	$506	$71
HEATH	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	128	335	247	157	6	0	$153	N/A
HEATH	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	338	N/A	$509
HEATH	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	386	475	607	453	N/A	$1315
HEATH	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	586	677	N/A	$955
HEATH	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	9	31	34	40	32	22	$19	$0
HEATH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	442	N/A	[illegible]
HEATH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	198	150	N/A	$640
HICKORY CREEK	C	CONSERVATION - HICKORY CREEK	DEMAND REDUCTION	5	8	9	14	18	22	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
HICKORY CREEK	C	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK	DEMAND REDUCTION	3	3	0	0	0	0	$1501	N/A
HICKORY CREEK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	4	12	72	74	60	N/A	$221
HICKORY CREEK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	13	39	66	58	43	N/A	$515
HICKORY CREEK	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	3	4	6	5	4	N/A	$0
HICKORY CREEK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	131	N/A	$837
HICKORY CREEK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	25	44	N/A	$837
HICKORY CREEK	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	13	20	16	28	N/A	$3
HICKORY CREEK	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	7	10	9	15	N/A	$0
HICKORY CREEK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	89	161	239	266	172	N/A	$80
HICKORY CREEK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	26	70	107	89	80	N/A	$80
HICKORY CREEK	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	23	N/A	$483
HICKORY CREEK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	26	19	N/A	$697
HIGH POINT WSC	C	CONSERVATION - HIGH POINT WSC	DEMAND REDUCTION	2	4	7	11	22	34	$0	$0
HIGH POINT WSC	C	CONSERVATION, WATER LOSS CONTROL - HIGH POINT WSC	DEMAND REDUCTION	2	2	0	0	0	0	$808	N/A
HIGH POINT WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	8	14	19	26	28	26	$225	$84
HIGH POINT WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	6	83	111	161	185	180	$506	$71
HIGH POINT WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	19	26	23	18	1	0	$153	N/A
HIGH POINT WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	79	N/A	$509
HIGH POINT WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	37	54	108	106	N/A	$1315
HIGH POINT WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	104	158	N/A	$955
HIGH POINT WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	7	16	34	48	N/A	$0
HIGH POINT WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	6	14	28	41	N/A	$0
HIGH POINT WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	11	31	68	102	N/A	$0
HIGH POINT WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	3	8	16	24	N/A	$0
HIGH POINT WSC	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	0	1	2	4	7	N/A	$0
HIGH POINT WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	4	3	3	5	5	$19	$0
HIGH POINT WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	103	N/A	$837

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
HIGH POINT WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	35	35	N/A	$837
HIGHLAND PARK	C	CONSERVATION - HIGHLAND PARK	DEMAND REDUCTION	14	28	41	55	68	82	$0	$0
HIGHLAND PARK	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND PARK	DEMAND REDUCTION	20	20	0	0	0	0	$7348	N/A
HIGHLAND VILLAGE	C	CONSERVATION - HIGHLAND VILLAGE	DEMAND REDUCTION	51	86	117	130	143	156	$44067	$46167
HIGHLAND VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - HIGHLAND VILLAGE	DEMAND REDUCTION	19	19	0	0	0	0	$45550	N/A
HIGHLAND VILLAGE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	15	40	194	209	172	N/A	$221
HIGHLAND VILLAGE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	47	128	177	164	123	N/A	$515
HIGHLAND VILLAGE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	10	14	17	14	12	N/A	$0
HIGHLAND VILLAGE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	371	N/A	$837
HIGHLAND VILLAGE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	71	126	N/A	$837
HIGHLAND VILLAGE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	43	53	45	79	N/A	$3
HIGHLAND VILLAGE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	22	28	24	44	N/A	$0
HIGHLAND VILLAGE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	339	518	639	756	484	N/A	$80
HIGHLAND VILLAGE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	97	228	288	252	228	N/A	[illegible]
HIGHLAND VILLAGE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	65	N/A	$483
HIGHLAND VILLAGE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	72	55	N/A	$697
HONEY GROVE	C	CONSERVATION - HONEY GROVE	DEMAND REDUCTION	1	2	3	4	5	5	$0	$0
HONEY GROVE	C	CONSERVATION, WATER LOSS CONTROL - HONEY GROVE	DEMAND REDUCTION	19	19	0	0	0	0	$320	N/A
HONEY GROVE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	185	241	237	236	236	N/A	$71
HOWE	C	CONSERVATION - HOWE	DEMAND REDUCTION	1	2	4	5	7	9	$0	$0
HOWE	C	CONSERVATION, WATER LOSS CONTROL - HOWE	DEMAND REDUCTION	1	1	0	0	0	0	$120	N/A
HOWE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	2	3	3	3	N/A	$84
HOWE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	6	10	19	20	19	$506	$71
HOWE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	0	1	2	2	0	0	N/A	N/A
HOWE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	8	N/A	$509
HOWE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	3	6	12	11	N/A	$1315
HOWE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	11	16	N/A	$955
HOWE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	1	0	1	N/A	[illegible]
HOWE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$640

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
HOWE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	4	4	N/A	$640
HUDSON OAKS	C	CONSERVATION - HUDSON OAKS	DEMAND REDUCTION	7	13	24	27	29	32	$7554	$13366
HUDSON OAKS	C	CONSERVATION – WASTE PROHIBITION, HUDSON OAKS	DEMAND REDUCTION	1	3	4	4	4	4	$1594	$1763
HUDSON OAKS	C	CONSERVATION, WATER LOSS CONTROL - HUDSON OAKS	DEMAND REDUCTION	2	2	0	0	0	0	$968	N/A
HUDSON OAKS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	40	0	N/A	N/A
HUDSON OAKS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	63	N/A	$1061
HUDSON OAKS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	10	18	21	N/A	$1061
HUDSON OAKS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	2	9	8	60	60	N/A	$157
HUDSON OAKS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	2	1	3	8	N/A	$157
HUDSON OAKS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	6	26	43	32	26	N/A	$114
HUDSON OAKS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	12	24	10	13	N/A	$149
HURST	C	CONSERVATION - HURST	DEMAND REDUCTION	185	240	293	311	332	354	$89889	$91512
HURST	C	CONSERVATION, WATER LOSS CONTROL - HURST	DEMAND REDUCTION	34	34	0	0	0	0	$78386	N/A
HURST	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	623	709	551	408	277	N/A	$0
HURST	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	632	0	N/A	N/A
HURST	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	991	N/A	$1061
HURST	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	158	283	336	N/A	$1061
HURST	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	70	157	120	134	91	N/A	$157
HURST	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	16	40	37	52	121	N/A	$157
HURST	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	179	447	678	513	417	N/A	$114
HURST	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	211	375	167	197	N/A	$149
HUTCHINS	C	CONSERVATION - HUTCHINS	DEMAND REDUCTION	3	9	18	29	43	59	$0	$0
HUTCHINS	C	CONSERVATION, WATER LOSS CONTROL - HUTCHINS	DEMAND REDUCTION	5	5	0	0	0	0	$10838	N/A
HUTCHINS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	39	41	93	310	379	421	$153	$221
HUTCHINS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	130	292	282	298	301	N/A	$515
HUTCHINS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	159	N/A	$483
HUTCHINS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	131	134	N/A	$697
IRRIGATION, COLLIN	C	CONSERVATION, IRRIGATION - COLLIN COUNTY	DEMAND REDUCTION	5	83	159	199	237	275	$310	$310
IRRIGATION, COOKE	C	GAINESVILLE ADDITIONAL DIRECT REUSE	C | DIRECT REUSE	70	70	70	70	70	70	$2337	$342
IRRIGATION, DALLAS	C	CONSERVATION, IRRIGATION - DALLAS COUNTY	DEMAND REDUCTION	18	294	565	708	841	975	$310	$310
IRRIGATION, DALLAS	C	TRINITY RIVER AUTHORITY ADDITIONAL LOS COLINAS REUSE	C | DIRECT REUSE	7,000	7,000	7,000	7,000	7,000	7,000	$392	$212

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies							
				2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
IRRIGATION, DENTON	C	CONSERVATION, IRRIGATION - DENTON COUNTY	DEMAND REDUCTION	2	37	72	90	107	124	$310	$310
IRRIGATION, DENTON	C	UTRWD - ADDITIONAL DIRECT REUSE	C | DIRECT REUSE	0	560	1,121	2,240	2,240	2,240	N/A	$94
IRRIGATION, FREESTONE	C	CONSERVATION, IRRIGATION - FREESTONE COUNTY	DEMAND REDUCTION	0	0	0	0	1	1	N/A	$310
IRRIGATION, GRAYSON	C	CONSERVATION, IRRIGATION - GRAYSON COUNTY	DEMAND REDUCTION	0	4	9	12	16	19	N/A	$310
IRRIGATION, JACK	C	CONSERVATION, IRRIGATION - JACK COUNTY	DEMAND REDUCTION	0	3	6	8	10	11	N/A	$310
IRRIGATION, KAUFMAN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	55	0	N/A	N/A
IRRIGATION, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	85	N/A	$1061
IRRIGATION, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	14	25	29	N/A	$1061
IRRIGATION, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	10	15	11	12	8	N/A	$157
IRRIGATION, KAUFMAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	4	3	4	10	N/A	$157
IRRIGATION, KAUFMAN	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	26	43	62	45	36	N/A	$114
IRRIGATION, KAUFMAN	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	21	34	15	17	N/A	$149
IRRIGATION, NAVARRO	C	CONSERVATION, IRRIGATION - NAVARRO COUNTY	DEMAND REDUCTION	0	2	4	5	5	6	N/A	$310
IRRIGATION, ROCKWALL	C	CONSERVATION, IRRIGATION - ROCKWALL COUNTY	DEMAND REDUCTION	1	12	24	30	35	41	$310	$310
IRRIGATION, ROCKWALL	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	12	7	11	30	31	30	$153	[illegible]
IRRIGATION, ROCKWALL	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	21	33	27	26	21	N/A	$515
IRRIGATION, ROCKWALL	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$483
IRRIGATION, ROCKWALL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	11	9	N/A	$697
IRRIGATION, TARRANT	C	CONSERVATION, IRRIGATION - TARRANT COUNTY	DEMAND REDUCTION	8	138	266	334	396	459	$310	$310
IRRIGATION, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	103	0	N/A	N/A
IRRIGATION, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	489	N/A	$1061
IRRIGATION, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	82	142	166	N/A	$1061
IRRIGATION, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	14	24	19	22	15	N/A	$157
IRRIGATION, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	6	6	8	20	N/A	$157
IRRIGATION, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	35	67	110	85	68	N/A	$114
IRRIGATION, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	32	60	27	32	N/A	$149
IRRIGATION, WISE	C	CONSERVATION, IRRIGATION - WISE COUNTY	DEMAND REDUCTION	0	0	1	1	1	1	N/A	$310
IRRIGATION, WISE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	143	0	N/A	N/A
IRRIGATION, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	187	N/A	[illegible]
IRRIGATION, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	47	65	63	N/A	[illegible]
IRRIGATION, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	248	108	74	36	31	17	$442	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
IRRIGATION, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	158	25	20	11	12	23	$442	$157
IRRIGATION, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	273	212	201	117	79	N/A	$114
IRRIGATION, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	100	111	38	37	N/A	$149
IRVING	C	CONSERVATION - IRVING	DEMAND REDUCTION	748	1,303	1,784	1,970	2,163	2,360	$300627	$320417
IRVING	C	CONSERVATION, WATER LOSS CONTROL - IRVING	DEMAND REDUCTION	281	281	0	0	0	0	$660247	N/A
IRVING	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	233	159	272	748	780	757	$153	$221
IRVING	C	IRVING TRA CENTRAL REUSE PROJECT	C | DIRECT REUSE	28,025	28,025	28,025	28,025	28,025	28,025	$497	$377
IRVING	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	506	857	682	612	540	N/A	$515
IRVING	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	285	N/A	$483
IRVING	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	269	240	N/A	$697
ITALY	C	CONSERVATION - ITALY	DEMAND REDUCTION	1	3	5	8	12	20	$0	$0
ITALY	C	CONSERVATION, WATER LOSS CONTROL - ITALY	DEMAND REDUCTION	2	2	0	0	0	0	$536	N/A
ITALY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	296	N/A	$1061
ITALY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	296	N/A	$1061
ITALY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	30	65	100	N/A	$1061
ITALY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	30	65	100	N/A	$1061
ITALY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	18	28	23	31	27	N/A	$157
ITALY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	7	6	12	36	N/A	$157
ITALY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	46	81	129	117	124	N/A	$114
ITALY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	38	70	38	59	N/A	$149
ITALY	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	144	0	N/A	N/A
JACKSBORO	C	CONSERVATION - JACKSBORO	DEMAND REDUCTION	2	5	7	10	12	15	$0	$0
JACKSBORO	C	CONSERVATION, WATER LOSS CONTROL - JACKSBORO	DEMAND REDUCTION	3	3	0	0	0	0	$1387	N/A
JOSEPHINE	C	CONSERVATION - JOSEPHINE	DEMAND REDUCTION	1	3	5	9	11	13	$0	$0
JOSEPHINE	C	CONSERVATION, WATER LOSS CONTROL - JOSEPHINE	DEMAND REDUCTION	1	1	0	0	0	0	$550	N/A
JOSEPHINE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	11	16	23	16	11	$225	$84
JOSEPHINE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	4	63	94	142	103	76	$506	$71
JOSEPHINE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	11	20	20	16	1	0	$153	N/A
JOSEPHINE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	33	N/A	$509
JOSEPHINE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	31	47	60	44	N/A	$1315
JOSEPHINE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	58	67	N/A	$955

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
JOSEPHINE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	1	2	4	3	3	$19	$0
JOSEPHINE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	44	N/A	$640
JOSEPHINE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	20	15	N/A	$640
JUSTIN	C	CONSERVATION - JUSTIN	DEMAND REDUCTION	2	8	17	23	29	35	$0	$0
JUSTIN	C	CONSERVATION, WATER LOSS CONTROL - JUSTIN	DEMAND REDUCTION	3	3	0	0	0	0	$1428	N/A
JUSTIN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	5	21	96	102	84	N/A	$221
JUSTIN	C	JUSTIN NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | DENTON COUNTY	244	244	244	244	244	244	$1027	$302
JUSTIN	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	15	65	88	80	60	N/A	$515
JUSTIN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	3	7	9	7	6	N/A	$0
JUSTIN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	181	N/A	$837
JUSTIN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	35	61	N/A	$837
JUSTIN	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	22	26	22	38	N/A	$3
JUSTIN	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	11	14	12	21	N/A	$0
JUSTIN	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	106	266	318	370	236	N/A	[illegible]
JUSTIN	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	31	117	143	123	111	N/A	$80
JUSTIN	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	32	N/A	$483
JUSTIN	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	35	27	N/A	$697
KAUFMAN	C	CONSERVATION - KAUFMAN	DEMAND REDUCTION	3	8	14	29	46	68	$0	$0
KAUFMAN	C	CONSERVATION, WATER LOSS CONTROL - KAUFMAN	DEMAND REDUCTION	5	5	0	0	0	0	$1067	N/A
KAUFMAN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	17	30	40	67	60	52	$225	$84
KAUFMAN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	13	174	236	424	396	357	$506	$71
KAUFMAN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	39	55	50	47	2	0	$153	N/A
KAUFMAN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	157	N/A	$509
KAUFMAN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	78	141	231	210	N/A	$1315
KAUFMAN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	223	313	N/A	$955
KAUFMAN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	6	6	12	12	9	$19	$0
KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	205	N/A	[illegible]
KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	75	69	N/A	$640
KELLER	C	CONSERVATION - KELLER	DEMAND REDUCTION	163	282	387	428	471	514	$96495	$101310

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
KELLER	C	CONSERVATION, WATER LOSS CONTROL - KELLER	DEMAND REDUCTION	61	61	0	0	0	0	$151485	N/A
KELLER	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	1,345	1,560	1,225	908	616	N/A	$0
KELLER	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	1,502	0	N/A	N/A
KELLER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,331	N/A	$1061
KELLER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,513	672	790	N/A	$1061
KELLER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	219	391	291	319	213	N/A	$157
KELLER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	51	101	88	124	285	N/A	$157
KELLER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	555	1,117	951	1,219	981	N/A	$114
KELLER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	528	449	395	464	N/A	$149
KEMP	C	CONSERVATION - KEMP	DEMAND REDUCTION	4	9	14	18	31	48	$4998	$19333
KEMP	C	CONSERVATION, WATER LOSS CONTROL - KEMP	DEMAND REDUCTION	7	22	24	29	45	63	$36293	$43344
KEMP	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	82	0	N/A	N/A
KEMP	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	214	N/A	$1061
KEMP	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	13	37	73	N/A	$1061
KEMP	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	28	50	61	71	174	231	$442	$157
KEMP	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	2	3	7	26	N/A	$157
KEMP	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	3	27	55	67	90	N/A	$114
KEMP	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	13	30	22	43	N/A	$149
KENNEDALE	C	ARLINGTON UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	280	255	225	199	177	158	$0	$0
KENNEDALE	C	CONSERVATION - KENNEDALE	DEMAND REDUCTION	5	27	46	63	72	78	$0	$31294
KENNEDALE	C	CONSERVATION, WATER LOSS CONTROL - KENNEDALE	DEMAND REDUCTION	7	7	0	0	0	0	$4196	N/A
KENNEDALE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	56	97	82	65	44	N/A	$0
KENNEDALE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	37	0	N/A	N/A
KENNEDALE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	93	0	N/A	N/A
KENNEDALE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	56	N/A	$1061
KENNEDALE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	147	N/A	$1061
KENNEDALE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	37	16	19	N/A	$1061
KENNEDALE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	22	42	50	N/A	$1061
KENNEDALE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	7	10	7	8	5	N/A	$157
KENNEDALE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	4	20	16	20	13	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
KENNEDALE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	17	29	23	20	24	N/A	$157
KENNEDALE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	5	6	7	19	N/A	$157
KENNEDALE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	17	29	23	30	24	N/A	$114
KENNEDALE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	10	57	93	76	62	N/A	$114
KENNEDALE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	14	11	10	11	N/A	$149
KENNEDALE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	27	50	25	29	N/A	$149
KENTUCKY TOWN WSC	C	CONSERVATION - KENTUCKY TOWN WSC	DEMAND REDUCTION	1	3	5	7	12	17	$0	$0
KENTUCKY TOWN WSC	C	CONSERVATION, WATER LOSS CONTROL - KENTUCKY TOWN WSC	DEMAND REDUCTION	2	2	0	0	0	0	$627	N/A
KENTUCKY TOWN WSC	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	95	93	88	83	N/A	$535
KERENS	C	CONSERVATION - KERENS	DEMAND REDUCTION	1	1	2	3	5	6	$0	$0
KERENS	C	CONSERVATION, WATER LOSS CONTROL - KERENS	DEMAND REDUCTION	1	1	0	0	0	0	$320	N/A
KERENS	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	42	90	118	N/A	$596
KERENS	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	75	90	71	50	54	N/A	[illegible]
KRUGERVILLE	C	CONSERVATION - KRUGERVILLE	DEMAND REDUCTION	1	2	4	6	7	9	$0	$0
KRUGERVILLE	C	CONSERVATION, WATER LOSS CONTROL - KRUGERVILLE	DEMAND REDUCTION	1	1	0	0	0	0	$621	N/A
KRUGERVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	2	6	30	31	26	N/A	$221
KRUGERVILLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	6	18	27	24	18	N/A	$515
KRUGERVILLE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	1	2	3	2	2	N/A	$0
KRUGERVILLE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	55	N/A	$837
KRUGERVILLE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	11	19	N/A	$837
KRUGERVILLE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	6	8	7	12	N/A	$3
KRUGERVILLE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	3	4	4	6	N/A	$0
KRUGERVILLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	44	74	100	112	71	N/A	$80
KRUGERVILLE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	13	32	45	37	34	N/A	$80
KRUGERVILLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	10	N/A	$483
KRUGERVILLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	11	8	N/A	$697
KRUM	C	CONSERVATION - KRUM	DEMAND REDUCTION	16	30	52	70	92	120	$14420	$36479
KRUM	C	CONSERVATION, WATER LOSS CONTROL - KRUM	DEMAND REDUCTION	6	6	0	0	0	0	$2563	[illegible]
KRUM	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	5	20	117	153	155	N/A	$221
KRUM	C	KRUM NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | DENTON COUNTY	577	707	866	1,025	1,025	1,025	$299	$175

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
KRUM	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	17	62	107	120	110	N/A	$515
KRUM	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	4	7	10	11	11	N/A	$0
KRUM	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	333	N/A	$837
KRUM	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	52	113	N/A	$837
KRUM	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	21	32	33	71	N/A	$3
KRUM	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	11	17	18	39	N/A	$0
KRUM	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	119	249	385	556	432	N/A	$80
KRUM	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	34	110	173	185	204	N/A	$80
KRUM	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	58	N/A	$483
KRUM	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	53	49	N/A	$697
LADONIA	C	CONSERVATION - LADONIA	DEMAND REDUCTION	0	1	2	2	4	4	N/A	$0
LADONIA	C	CONSERVATION, WATER LOSS CONTROL - LADONIA	DEMAND REDUCTION	1	1	0	0	0	0	$510	N/A
LADONIA	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	1	6	9	8	N/A	$221
LADONIA	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	1	3	6	8	6	N/A	$515
LADONIA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	1	1	1	N/A	$0
LADONIA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	17	N/A	$837
LADONIA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	3	6	N/A	$837
LADONIA	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	1	2	2	4	N/A	$3
LADONIA	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	0	1	1	2	N/A	$0
LADONIA	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	4	11	20	35	20	N/A	$80
LADONIA	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	1	5	9	12	11	N/A	$80
LADONIA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	19	24	29	39	33	N/A	$0
LADONIA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	6	8	10	14	12	N/A	$0
LADONIA	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | SULPHUR INDIRECT REUSE	0	3	4	5	7	7	N/A	$0
LADONIA	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	3	N/A	$483
LADONIA	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	3	3	N/A	$697
LAKE DALLAS	C	CONSERVATION - LAKE DALLAS	DEMAND REDUCTION	4	8	13	18	22	27	$0	$0
LAKE DALLAS	C	CONSERVATION, WATER LOSS CONTROL - LAKE DALLAS	DEMAND REDUCTION	5	5	0	0	0	0	$2847	N/A
LAKE DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	6	18	82	86	71	N/A	$221

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
LAKE DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	19	58	75	68	51	N/A	$515
LAKE DALLAS	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	4	7	7	6	5	N/A	$0
LAKE DALLAS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	153	N/A	$837
LAKE DALLAS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	29	52	N/A	$837
LAKE DALLAS	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	19	22	18	32	N/A	$3
LAKE DALLAS	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	10	12	10	18	N/A	$0
LAKE DALLAS	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	138	234	274	310	198	N/A	$80
LAKE DALLAS	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	40	103	123	104	94	N/A	$80
LAKE DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	27	N/A	$483
LAKE DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	30	23	N/A	$697
LAKE KIOWA SUD	C	CONSERVATION - LAKE KIOWA SUD	DEMAND REDUCTION	3	5	8	11	14	17	$0	$0
LAKE KIOWA SUD	C	CONSERVATION, WATER LOSS CONTROL - LAKE KIOWA SUD	DEMAND REDUCTION	4	4	0	0	0	0	$9034	N/A
LAKE KIOWA SUD	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	91	92	89	86	83	N/A	$0
LAKE WORTH	C	CONSERVATION - LAKE WORTH	DEMAND REDUCTION	15	27	41	52	68	100	$14395	[illegible]
LAKE WORTH	C	CONSERVATION, WATER LOSS CONTROL - LAKE WORTH	DEMAND REDUCTION	6	6	0	0	0	0	$170642	N/A
LAKE WORTH	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	94	123	117	105	103	N/A	$0
LAKE WORTH	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	170	0	N/A	N/A
LAKE WORTH	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	385	N/A	$1061
LAKE WORTH	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	35	76	130	N/A	$1061
LAKE WORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	13	29	27	36	35	N/A	$157
LAKE WORTH	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	7	8	13	47	N/A	$157
LAKE WORTH	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	32	83	150	139	162	N/A	$114
LAKE WORTH	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	39	83	45	77	N/A	$149
LAKESIDE	C	CONSERVATION - LAKESIDE	DEMAND REDUCTION	1	2	2	3	4	5	$0	$0
LAKESIDE	C	CONSERVATION, WATER LOSS CONTROL - LAKESIDE	DEMAND REDUCTION	1	1	0	0	0	0	$1888	N/A
LAKEWOOD VILLAGE	C	CONSERVATION - LAKEWOOD VILLAGE	DEMAND REDUCTION	0	1	1	2	3	4	N/A	$0
LAKEWOOD VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - LAKEWOOD VILLAGE	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
LAKEWOOD VILLAGE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	4	5	N/A	$221
LAKEWOOD VILLAGE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	3	4	N/A	[illegible]
LAKEWOOD VILLAGE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$837

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
LAKEWOOD VILLAGE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1	4	N/A	$837
LAKEWOOD VILLAGE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	0	1	2	N/A	$3
LAKEWOOD VILLAGE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	0	0	0	1	N/A	$0
LAKEWOOD VILLAGE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	0	0	0	12	14	N/A	$80
LAKEWOOD VILLAGE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	0	0	0	4	7	N/A	$80
LAKEWOOD VILLAGE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	2	N/A	$483
LAKEWOOD VILLAGE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1	2	N/A	$697
LANCASTER	C	CONSERVATION - LANCASTER	DEMAND REDUCTION	103	212	343	422	511	608	$92776	$143514
LANCASTER	C	CONSERVATION, IRRIGATION RESTRICTIONS – LANCASTER	DEMAND REDUCTION	4	12	15	17	20	22	$17462	$34292
LANCASTER	C	CONSERVATION, WATER LOSS CONTROL - LANCASTER	DEMAND REDUCTION	38	38	0	0	0	0	$86975	N/A
LANCASTER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	208	245	530	1,650	1,909	2,027	$153	$221
LANCASTER	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	779	1,672	1,506	1,499	1,444	N/A	$515
LANCASTER	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	28	41	50	56	63	70	$0	$0
LANCASTER	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	762	N/A	$483
LANCASTER	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	660	642	N/A	$697
LAVON	C	CONSERVATION - LAVON	DEMAND REDUCTION	8	16	33	19	52	141	$9806	$0
LAVON	C	CONSERVATION, WATER LOSS CONTROL - LAVON	DEMAND REDUCTION	3	3	0	0	0	0	$1156	N/A
LAVON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	8	17	27	43	68	106	$225	$84
LAVON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	6	97	165	274	445	734	$506	$71
LAVON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	19	31	35	30	3	0	$153	N/A
LAVON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	323	N/A	$509
LAVON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	54	91	260	433	N/A	$1315
LAVON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	251	646	N/A	$955
LAVON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	3	5	8	11	20	$19	$0
LAVON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	422	N/A	$640
LAVON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	85	143	N/A	$640
LAVON SUD	C	CONSERVATION - LAVON SUD	DEMAND REDUCTION	2	5	9	15	33	78	$0	$0
LAVON SUD	C	CONSERVATION, WATER LOSS CONTROL - LAVON SUD	DEMAND REDUCTION	3	3	0	0	0	0	$1201	N/A
LAVON SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	10	19	24	37	44	59	$225	$84

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
LAVON SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	7	104	144	227	286	407	$506	$71
LAVON SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	23	33	30	25	2	0	$153	N/A
LAVON SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	179	N/A	$509
LAVON SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	47	76	167	240	N/A	$1315
LAVON SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	161	358	N/A	$955
LAVON SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	2	5	5	7	12	$19	$0
LAVON SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	234	N/A	$640
LAVON SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	55	79	N/A	$640
LEONARD	C	CONSERVATION - LEONARD	DEMAND REDUCTION	1	2	4	5	7	9	$0	$0
LEONARD	C	CONSERVATION, WATER LOSS CONTROL - LEONARD	DEMAND REDUCTION	2	2	0	0	0	0	$1380	N/A
LEONARD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	148	194	211	240	273	N/A	$71
LEWISVILLE	C	CONSERVATION - LEWISVILLE	DEMAND REDUCTION	268	487	760	957	1,172	1,278	$157327	$227356
LEWISVILLE	C	CONSERVATION, IRRIGATION RESTRICTIONS – LEWISVILLE	DEMAND REDUCTION	13	32	39	47	55	55	$40585	$65038
LEWISVILLE	C	CONSERVATION, WATER LOSS CONTROL - LEWISVILLE	DEMAND REDUCTION	101	101	0	0	0	0	$97103	[illegible]
LEWISVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	554	564	1,184	4,063	4,941	4,441	$153	$221
LEWISVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	19	276	363	501	237	N/A	$0
LEWISVILLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	1,797	3,731	3,708	3,880	3,165	N/A	$515
LEWISVILLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	1,669	N/A	$483
LEWISVILLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1,707	1,407	N/A	$697
LINDSAY	C	CONSERVATION - LINDSAY	DEMAND REDUCTION	0	1	2	2	5	12	N/A	$0
LINDSAY	C	CONSERVATION, WATER LOSS CONTROL - LINDSAY	DEMAND REDUCTION	1	1	0	0	0	0	$894	N/A
LINDSAY	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	0	0	0	141	435	N/A	$0
LITTLE ELM	C	CONSERVATION - LITTLE ELM	DEMAND REDUCTION	14	31	46	61	76	91	$0	$0
LITTLE ELM	C	CONSERVATION, WATER LOSS CONTROL - LITTLE ELM	DEMAND REDUCTION	21	21	0	0	0	0	$26048	N/A
LITTLE ELM	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	68	119	125	144	100	70	$225	$84
LITTLE ELM	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	51	673	750	900	649	478	$506	$71
LITTLE ELM	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	160	212	158	99	4	0	$153	N/A
LITTLE ELM	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	210	N/A	[illegible]
LITTLE ELM	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	247	300	379	281	N/A	$1315

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
LITTLE ELM	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	366	420	N/A	$955
LITTLE ELM	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	10	20	21	25	19	12	$19	$0
LITTLE ELM	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	274	N/A	$640
LITTLE ELM	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	124	93	N/A	$640
LOG CABIN	C	CONSERVATION - LOG CABIN	DEMAND REDUCTION	0	1	1	1	2	2	N/A	$0
LOG CABIN	C	CONSERVATION, WATER LOSS CONTROL - LOG CABIN	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
LOWRY CROSSING	C	CONSERVATION - LOWRY CROSSING	DEMAND REDUCTION	1	2	3	4	5	6	$0	$0
LOWRY CROSSING	C	CONSERVATION, WATER LOSS CONTROL - LOWRY CROSSING	DEMAND REDUCTION	1	1	0	0	0	0	$345	N/A
LOWRY CROSSING	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	6	8	10	7	5	$225	$84
LOWRY CROSSING	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	3	38	50	60	44	33	$506	$71
LOWRY CROSSING	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	9	12	11	7	0	0	$153	N/A
LOWRY CROSSING	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	14	N/A	$509
LOWRY CROSSING	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	17	20	25	19	N/A	$1315
LOWRY CROSSING	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	24	28	N/A	$955
LOWRY CROSSING	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	1	1	1	2	0	$19	N/A
LOWRY CROSSING	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	18	N/A	$640
LOWRY CROSSING	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	8	6	N/A	$640
LUCAS	C	CONSERVATION - LUCAS	DEMAND REDUCTION	28	52	95	118	143	156	$19878	$35447
LUCAS	C	CONSERVATION, IRRIGATION RESTRICTIONS – LUCAS	DEMAND REDUCTION	3	7	10	11	13	13	$3254	$4916
LUCAS	C	CONSERVATION, WATER LOSS CONTROL - LUCAS	DEMAND REDUCTION	50	145	176	196	217	217	$48288	$59588
LUCAS	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	20	41	62	83	66	47	$225	$84
LUCAS	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	16	236	374	524	432	327	$506	$71
LUCAS	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	47	74	79	58	3	0	$153	N/A
LUCAS	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	144	N/A	$509
LUCAS	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	123	175	253	193	N/A	$1315
LUCAS	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	244	288	N/A	$955
LUCAS	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	4	7	11	14	12	9	$19	$0
LUCAS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	188	N/A	$640

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
LUCAS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	83	64	N/A	$640
LUELLA SUD	C	CONSERVATION - LUELLA SUD	DEMAND REDUCTION	1	3	5	7	10	14	$0	$0
LUELLA SUD	C	CONSERVATION, WATER LOSS CONTROL - LUELLA SUD	DEMAND REDUCTION	2	2	0	0	0	0	$1808	N/A
LUELLA SUD	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	195	193	290	286	N/A	$535
MABANK	C	CONSERVATION - MABANK	DEMAND REDUCTION	11	19	30	47	77	122	$11031	$41500
MABANK	C	CONSERVATION, WATER LOSS CONTROL - MABANK	DEMAND REDUCTION	4	4	0	0	0	0	$2846	N/A
MABANK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	262	0	N/A	N/A
MABANK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	757	N/A	$1061
MABANK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	42	117	257	N/A	$1061
MABANK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	25	40	175	436	412	N/A	$157
MABANK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	8	9	21	92	N/A	$157
MABANK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	39	88	181	213	319	N/A	$114
MABANK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	41	101	69	151	N/A	$149
MALAKOFF	C	CONSERVATION - MALAKOFF	DEMAND REDUCTION	1	2	3	4	5	6	$0	$0
MALAKOFF	C	CONSERVATION, WATER LOSS CONTROL - MALAKOFF	DEMAND REDUCTION	1	1	0	0	0	0	$1575	[illegible]
MALAKOFF	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	4	0	N/A	N/A
MALAKOFF	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	10	N/A	$1061
MALAKOFF	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	2	3	N/A	$1061
MALAKOFF	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	0	1	1	N/A	$157
MALAKOFF	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	0	0	1	N/A	$157
MALAKOFF	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	1	2	3	4	N/A	$114
MALAKOFF	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	2	1	3	N/A	$149
MANSFIELD	C	CONSERVATION - MANSFIELD	DEMAND REDUCTION	253	478	795	1,161	1,474	1,838	$119370	$220872
MANSFIELD	C	CONSERVATION, WATER LOSS CONTROL - MANSFIELD	DEMAND REDUCTION	95	95	0	0	0	0	$194193	N/A
MANSFIELD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	5,007	0	N/A	N/A
MANSFIELD	C	MANSFIELD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	4,881	5,794	6,464	8,728	8,805	8,759	$0	$0
MANSFIELD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	8,881	N/A	$1061
MANSFIELD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,109	2,243	3,009	N/A	$1061
MANSFIELD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	384	848	843	1,064	812	N/A	[illegible]
MANSFIELD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	88	218	255	418	1,086	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANSFIELD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	974	2,421	4,745	4,066	3,739	N/A	$114
MANSFIELD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1,143	2,624	1,317	1,766	N/A	$149
MANUFACTURING, COLLIN	C	COLLIN COUNTY MANUFACTURING ADDITIONAL GROUNDWATER (NEW WELLS)	C | WOODBINE AQUIFER | COLLIN COUNTY	0	78	78	78	78	78	N/A	$199
MANUFACTURING, COLLIN	C	CONSERVATION, MANUFACTURING - COLLIN COUNTY	DEMAND REDUCTION	0	8	90	133	145	157	N/A	$310
MANUFACTURING, COLLIN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	60	99	108	134	102	78	$225	$84
MANUFACTURING, COLLIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	45	564	645	839	668	539	$506	$71
MANUFACTURING, COLLIN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	143	178	136	92	4	0	$153	N/A
MANUFACTURING, COLLIN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	237	N/A	$509
MANUFACTURING, COLLIN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	212	280	391	318	N/A	$1315
MANUFACTURING, COLLIN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	377	475	N/A	$955
MANUFACTURING, COLLIN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	10	17	18	24	19	16	$19	$0
MANUFACTURING, COLLIN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	310	N/A	$640
MANUFACTURING, COLLIN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	128	105	N/A	$640
MANUFACTURING, COOKE	C	CONSERVATION, MANUFACTURING - COOKE COUNTY	DEMAND REDUCTION	0	0	5	8	8	9	N/A	$310
MANUFACTURING, COOKE	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	0	0	0	0	169	N/A	$0
MANUFACTURING, DALLAS	C	ARLINGTON UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	95	57	51	41	46	40	$0	$0
MANUFACTURING, DALLAS	C	CONSERVATION, MANUFACTURING - DALLAS COUNTY	DEMAND REDUCTION	0	80	917	1,316	1,367	1,379	N/A	$310
MANUFACTURING, DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	1,326	975	2,174	5,556	5,907	5,859	$153	$653
MANUFACTURING, DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	429	308	281	376	391	385	$153	$221
MANUFACTURING, DALLAS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	16	13	9	6	4	N/A	$0
MANUFACTURING, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	3,104	5,109	4,236	3,862	3,451	N/A	$515
MANUFACTURING, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	138	206	150	124	106	N/A	$515
MANUFACTURING, DALLAS	C	MANSFIELD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	286	141	72	57	47	40	$0	$0
MANUFACTURING, DALLAS	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	70	110	116	140	98	70	$225	$84
MANUFACTURING, DALLAS	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	52	627	695	876	645	482	$506	$71
MANUFACTURING, DALLAS	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	164	198	147	97	4	0	$153	N/A
MANUFACTURING, DALLAS	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	212	N/A	$509

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, DALLAS	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	229	292	377	285	N/A	$1315
MANUFACTURING, DALLAS	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	364	425	N/A	$955
MANUFACTURING, DALLAS	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	11	19	20	24	19	14	$19	$0
MANUFACTURING, DALLAS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	277	N/A	$640
MANUFACTURING, DALLAS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	123	94	N/A	$640
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	1	2	1	2	1	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	3	3	2	2	2	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	9	9	6	6	4	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	0	1	2	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	1	1	1	2	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	2	2	2	5	N/A	$157
MANUFACTURING, DALLAS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	3	6	5	7	6	N/A	$114
MANUFACTURING, DALLAS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	8	10	13	9	7	N/A	$114
MANUFACTURING, DALLAS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	24	27	31	22	17	N/A	$114
MANUFACTURING, DALLAS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	3	2	2	3	N/A	$149
MANUFACTURING, DALLAS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	5	7	3	3	N/A	$149
MANUFACTURING, DALLAS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	13	17	7	8	N/A	$149
MANUFACTURING, DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	1,821	N/A	$483
MANUFACTURING, DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	56	N/A	$483
MANUFACTURING, DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	1,700	1,535	N/A	$697
MANUFACTURING, DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	55	47	N/A	$697
MANUFACTURING, DENTON	C	CONSERVATION, MANUFACTURING - DENTON COUNTY	DEMAND REDUCTION	0	3	38	57	62	68	N/A	$310
MANUFACTURING, DENTON	C	DENTON COUNTY MANUFACTURING ADDITIONAL GROUNDWATER	C | WOODBINE AQUIFER | DENTON COUNTY	184	184	184	184	184	184	$604	$251
MANUFACTURING, DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	0	10	29	44	65	76	N/A	$0
MANUFACTURING, DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	0	22	61	92	131	146	N/A	$0
MANUFACTURING, DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	315	323	353	383	360	369	$0	$0
MANUFACTURING, DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	0	12	36	61	99	126	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, DENTON	C	DENTON UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	35	98	150	219	252	N/A	$0
MANUFACTURING, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	6	4	6	20	22	23	$153	$221
MANUFACTURING, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	4	18	86	145	178	N/A	$221
MANUFACTURING, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	3	0	N/A	N/A
MANUFACTURING, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	1	1	3	14	15	14	$153	$221
MANUFACTURING, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	11	20	18	17	16	N/A	$515
MANUFACTURING, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	10	55	76	113	127	N/A	$515
MANUFACTURING, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	4	8	12	12	10	N/A	$515
MANUFACTURING, DENTON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	3	3	2	2	$225	$84
MANUFACTURING, DENTON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	13	14	19	15	12	$506	$71
MANUFACTURING, DENTON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	3	4	3	2	0	0	$153	N/A
MANUFACTURING, DENTON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	5	N/A	$509
MANUFACTURING, DENTON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	5	6	9	7	N/A	$1315
MANUFACTURING, DENTON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	9	11	N/A	$955
MANUFACTURING, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	1	1	1	1	1	N/A	$0
MANUFACTURING, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	0	0	1	0	1	$19	$0
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	7	N/A	$640
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4	N/A	$1061
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	30	N/A	$837
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	3	2	N/A	$640
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	1	1	N/A	$1061
MANUFACTURING, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	5	10	N/A	$837
MANUFACTURING, DENTON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	1	0	0	0	N/A	N/A
MANUFACTURING, DENTON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	1	1	0	N/A	N/A
MANUFACTURING, DENTON	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	2	2	1	2	N/A	$114
MANUFACTURING, DENTON	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1	2	1	1	N/A	$149
MANUFACTURING, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	3	4	3	6	N/A	$3
MANUFACTURING, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	1	2	2	3	N/A	$0
MANUFACTURING, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	25	35	45	56	40	N/A	$80

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	7	15	20	19	18	N/A	$80
MANUFACTURING, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	9	N/A	$483
MANUFACTURING, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	67	N/A	$483
MANUFACTURING, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	5	N/A	$483
MANUFACTURING, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	8	7	N/A	$697
MANUFACTURING, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	50	56	N/A	$697
MANUFACTURING, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	5	4	N/A	$483
MANUFACTURING, ELLIS	C	CONSERVATION, MANUFACTURING - ELLIS COUNTY	DEMAND REDUCTION	0	6	63	88	90	90	N/A	$310
MANUFACTURING, ELLIS	C	DREDGE LAKE WAXAHACHIE	C | WAXAHACHIE LAKE/RESERVOIR	0	0	0	0	171	563	N/A	$0
MANUFACTURING, ELLIS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	25	0	N/A	N/A
MANUFACTURING, ELLIS	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	4	43	51	56	57	56	$0	$0
MANUFACTURING, ELLIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	40	N/A	$1061
MANUFACTURING, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	6	11	13	N/A	$1061
MANUFACTURING, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	22	0	0	0	N/A	[illegible]
MANUFACTURING, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	4	6	4	5	4	N/A	$157
MANUFACTURING, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	116	1	2	5	N/A	$157
MANUFACTURING, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	73	119	144	0	N/A	N/A
MANUFACTURING, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	10	16	25	20	17	N/A	$114
MANUFACTURING, ELLIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	8	59	165	408	N/A	$149
MANUFACTURING, ELLIS	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | WAXAHACHIE LAKE/RESERVOIR	0	0	74	76	218	183	N/A	$0
MANUFACTURING, FANNIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	1	24	48	64	80	N/A	$71
MANUFACTURING, GRAYSON	C	CONSERVATION, MANUFACTURING - GRAYSON COUNTY	DEMAND REDUCTION	0	11	122	175	187	203	N/A	$310
MANUFACTURING, GRAYSON	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	60	271	609	1,118	2,007	3,107	$840	$535
MANUFACTURING, GRAYSON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	2	2	2	1	$225	$84
MANUFACTURING, GRAYSON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	8	9	11	9	7	$506	$71
MANUFACTURING, GRAYSON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	2	3	2	1	0	0	$153	N/A
MANUFACTURING, GRAYSON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	3	N/A	[illegible]
MANUFACTURING, GRAYSON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	3	4	5	4	N/A	$1315
MANUFACTURING, GRAYSON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	5	6	N/A	$955

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, GRAYSON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	1	N/A	$0
MANUFACTURING, GRAYSON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4	N/A	$1061
MANUFACTURING, GRAYSON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	2	2	1	N/A	$1061
MANUFACTURING, HENDERSON	C	UNALLOCATED SUPPLY - LAKE ATHENS	I | ATHENS LAKE/RESERVOIR	4	21	35	54	59	27	$0	$0
MANUFACTURING, KAUFMAN	C	CONSERVATION, MANUFACTURING - KAUFMAN COUNTY	DEMAND REDUCTION	0	2	20	28	30	32	N/A	$310
MANUFACTURING, KAUFMAN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	15	24	24	30	22	17	$225	$84
MANUFACTURING, KAUFMAN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	11	132	146	186	146	116	$506	$71
MANUFACTURING, KAUFMAN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	35	42	31	21	1	0	$153	N/A
MANUFACTURING, KAUFMAN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	51	N/A	$509
MANUFACTURING, KAUFMAN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	48	62	86	69	N/A	$1315
MANUFACTURING, KAUFMAN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	82	102	N/A	$955
MANUFACTURING, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	6	12	16	19	N/A	$0
MANUFACTURING, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	5	10	14	17	N/A	$0
MANUFACTURING, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	9	22	33	41	N/A	$0
MANUFACTURING, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	3	6	8	9	N/A	$0
MANUFACTURING, KAUFMAN	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	0	1	2	2	3	N/A	$0
MANUFACTURING, KAUFMAN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	3	4	5	4	3	$19	$0
MANUFACTURING, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	67	N/A	$640
MANUFACTURING, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	28	23	N/A	$640
MANUFACTURING, NAVARRO	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	264	558	725	N/A	$596
MANUFACTURING, NAVARRO	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	438	552	437	314	332	N/A	$0
MANUFACTURING, NAVARRO	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1	0	N/A	N/A
MANUFACTURING, NAVARRO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1	N/A	$1061
MANUFACTURING, NAVARRO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	1	1	N/A	$157
MANUFACTURING, NAVARRO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	1	0	0	0	N/A	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, PARKER	C	CONSERVATION, MANUFACTURING - PARKER COUNTY	DEMAND REDUCTION	0	1	17	25	28	31	N/A	$310
MANUFACTURING, PARKER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	108	0	N/A	N/A
MANUFACTURING, PARKER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	21	0	N/A	N/A
MANUFACTURING, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	41	N/A	$1061
MANUFACTURING, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	186	N/A	$1061
MANUFACTURING, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	4	10	14	N/A	$1061
MANUFACTURING, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	25	50	63	N/A	$1061
MANUFACTURING, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	3	4	3	5	4	N/A	$157
MANUFACTURING, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	15	23	19	23	17	N/A	$157
MANUFACTURING, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	1	1	2	5	N/A	$157
MANUFACTURING, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	6	6	9	23	N/A	$157
MANUFACTURING, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	6	11	18	18	17	N/A	$114
MANUFACTURING, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	37	65	105	88	78	N/A	[illegible]
MANUFACTURING, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	5	10	6	8	N/A	$149
MANUFACTURING, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	31	58	29	37	N/A	$149
MANUFACTURING, ROCKWALL	C	CONSERVATION, MANUFACTURING - ROCKWALL COUNTY	DEMAND REDUCTION	0	0	1	1	2	2	N/A	$310
MANUFACTURING, ROCKWALL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	1	2	1	1	N/A	$84
MANUFACTURING, ROCKWALL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	6	7	10	8	6	$506	$71
MANUFACTURING, ROCKWALL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	2	2	1	1	0	0	$153	N/A
MANUFACTURING, ROCKWALL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	3	N/A	$509
MANUFACTURING, ROCKWALL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	2	3	4	4	N/A	$1315
MANUFACTURING, ROCKWALL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	4	5	N/A	$955
MANUFACTURING, ROCKWALL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	1	0	1	0	N/A	N/A
MANUFACTURING, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4	N/A	$640
MANUFACTURING, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4	N/A	$1061
MANUFACTURING, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1	1	N/A	[illegible]
MANUFACTURING, ROCKWALL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1	1	N/A	$1061
MANUFACTURING, TARRANT	C	ARLINGTON UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	24	22	24	22	26	25	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, TARRANT	C	CONSERVATION, MANUFACTURING - TARRANT COUNTY	DEMAND REDUCTION	0	47	556	834	919	999	N/A	$310
MANUFACTURING, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	16	17	32	88	90	92	$153	$221
MANUFACTURING, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	78	0	N/A	N/A
MANUFACTURING, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,184	0	N/A	N/A
MANUFACTURING, TARRANT	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	1,928	2,561	2,242	1,804	1,330	N/A	$0
MANUFACTURING, TARRANT	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	6	6	5	4	3	N/A	$0
MANUFACTURING, TARRANT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	444	0	N/A	N/A
MANUFACTURING, TARRANT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	54	99	79	213	362	N/A	$515
MANUFACTURING, TARRANT	C	MANSFIELD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	73	55	34	30	27	24	$0	$0
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	754	N/A	$1061
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	5,089	N/A	$1061
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	131	N/A	$1061
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	408	199	255	N/A	$1061
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	698	1,344	1,724	N/A	$1061
MANUFACTURING, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	18	35	44	N/A	$1061
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	62	98	79	94	70	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	432	663	532	637	467	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	13	22	17	16	14	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	14	25	24	37	93	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	99	170	161	252	622	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	5	5	8	19	N/A	$157
MANUFACTURING, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	159	281	257	360	321	N/A	$114
MANUFACTURING, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,096	1,892	2,986	2,436	2,147	N/A	$114
MANUFACTURING, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	24	49	78	63	55	N/A	$114
MANUFACTURING, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	132	121	118	152	N/A	$149
MANUFACTURING, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	893	1,652	2,606	1,014	N/A	$149
MANUFACTURING, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	29	43	24	31	N/A	$149
MANUFACTURING, TARRANT	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	34	N/A	$483
MANUFACTURING, TARRANT	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	31	29	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MANUFACTURING, WISE	C	CONSERVATION, MANUFACTURING - WISE COUNTY	DEMAND REDUCTION	0	0	1	1	1	1	N/A	$310
MANUFACTURING, WISE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	436	0	N/A	N/A
MANUFACTURING, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	740	N/A	$1061
MANUFACTURING, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	740	N/A	$1061
MANUFACTURING, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	102	195	251	N/A	$1061
MANUFACTURING, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	102	195	251	N/A	$1061
MANUFACTURING, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	59	99	78	92	68	N/A	$157
MANUFACTURING, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	14	26	23	36	90	N/A	$157
MANUFACTURING, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	150	283	437	354	312	N/A	$114
MANUFACTURING, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	134	242	115	147	N/A	$149
MANUFACTURING, WISE	C	WISE COUNTY MANUFACTURING NEW WELLS	C | TRINITY AQUIFER | WISE COUNTY	250	250	250	250	250	250	$757	$209
MANUFACTURING, WISE	C	WISE COUNTY WSD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	128	143	147	169	175	176	$0	$0
MARILEE SUD	C	CONSERVATION - MARILEE SUD	DEMAND REDUCTION	3	6	9	12	15	18	$0	$0
MARILEE SUD	C	CONSERVATION, WATER LOSS CONTROL - MARILEE SUD	DEMAND REDUCTION	5	5	0	0	0	0	$83679	[illegible]
MARILEE SUD	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	6	32	57	94	134	N/A	$535
MAYPEARL	C	CONSERVATION - MAYPEARL	DEMAND REDUCTION	0	1	1	2	2	3	N/A	$0
MAYPEARL	C	CONSERVATION, WATER LOSS CONTROL - MAYPEARL	DEMAND REDUCTION	1	1	0	0	0	0	$170	N/A
MAYPEARL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	64	N/A	$1061
MAYPEARL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	16	22	22	N/A	$1061
MAYPEARL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	71	36	26	12	10	6	$442	$157
MAYPEARL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	45	8	7	4	4	8	$442	$157
MAYPEARL	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	90	75	71	41	27	N/A	$114
MAYPEARL	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	36	38	13	13	N/A	$149
MAYPEARL	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	50	0	N/A	N/A
MCKINNEY	C	CONSERVATION - MCKINNEY	DEMAND REDUCTION	472	899	1,786	2,575	2,829	3,085	$212724	$387467
MCKINNEY	C	CONSERVATION, WATER LOSS CONTROL - MCKINNEY	DEMAND REDUCTION	284	572	578	752	751	751	$636748	$930482
MCKINNEY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	456	939	1,443	2,193	1,531	1,080	$225	$84
MCKINNEY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	341	5,315	8,644	13,708	10,021	7,430	$506	[illegible]
MCKINNEY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	1,079	1,676	1,822	1,511	58	0	$153	N/A
MCKINNEY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	3,269	N/A	$509

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MCKINNEY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	2,846	4,569	5,861	4,381	N/A	$1315
MCKINNEY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	5,648	6,538	N/A	$955
MCKINNEY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	73	156	245	387	279	205	$19	$0
MCKINNEY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4,269	N/A	$640
MCKINNEY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1,913	1,446	N/A	$640
MCLENDON-CHISHOLM	C	CONSERVATION - MCLENDON-CHISOLM	DEMAND REDUCTION	4	9	15	20	26	32	$5012	$12264
MCLENDON-CHISHOLM	C	CONSERVATION, WATER LOSS CONTROL - MCLENDON-CHISHOLM	DEMAND REDUCTION	2	2	0	0	0	0	$922	N/A
MCLENDON-CHISHOLM	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	10	13	17	14	11	$225	$84
MCLENDON-CHISHOLM	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	78	132	162	206	199	193	$506	$71
MCLENDON-CHISHOLM	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	11	18	16	12	1	0	$153	N/A
MCLENDON-CHISHOLM	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	35	N/A	$509
MCLENDON-CHISHOLM	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	25	36	54	47	N/A	$1315
MCLENDON-CHISHOLM	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	52	70	N/A	$955
MCLENDON-CHISHOLM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	2	5	9	12	N/A	$0
MCLENDON-CHISHOLM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	0	2	5	7	10	$0	$0
MCLENDON-CHISHOLM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	4	11	18	24	N/A	$0
MCLENDON-CHISHOLM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1	3	4	5	N/A	$0
MCLENDON-CHISHOLM	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	0	0	0	1	1	2	N/A	$0
MCLENDON-CHISHOLM	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	1	3	3	3	N/A	$0
MCLENDON-CHISHOLM	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	46	N/A	$837
MCLENDON-CHISHOLM	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	18	16	N/A	$837
MELISSA	C	CONSERVATION - MELISSA	DEMAND REDUCTION	39	73	122	299	532	852	$20126	$134168
MELISSA	C	CONSERVATION, WATER LOSS CONTROL - MELISSA	DEMAND REDUCTION	8	8	0	0	0	0	$4697	N/A
MELISSA	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	14	43	63	177	210	223	$225	$84
MELISSA	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	244	381	1,106	1,369	1,535	$506	$71
MELISSA	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	32	77	81	123	8	0	$153	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MELISSA	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	676	N/A	$509
MELISSA	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	126	369	801	906	N/A	$1315
MELISSA	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	772	1,351	N/A	$955
MELISSA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	7	12	31	38	42	$19	$0
MELISSA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	882	N/A	$837
MELISSA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	262	299	N/A	$837
M-E-N WSC	C	CONSERVATION - M-E-N WSC	DEMAND REDUCTION	2	3	5	8	11	14	$0	$0
M-E-N WSC	C	CONSERVATION, WATER LOSS CONTROL - M-E-N WSC	DEMAND REDUCTION	2	2	0	0	0	0	$806	N/A
M-E-N WSC	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	101	214	280	N/A	$596
M-E-N WSC	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	174	214	167	120	128	N/A	$0
MESQUITE	C	CONSERVATION - MESQUITE	DEMAND REDUCTION	74	159	264	379	511	659	$0	$0
MESQUITE	C	CONSERVATION, WATER LOSS CONTROL - MESQUITE	DEMAND REDUCTION	112	112	0	0	0	0	$265597	N/A
MESQUITE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	367	616	719	895	667	501	$225	[illegible]
MESQUITE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	275	3,489	4,310	5,594	4,365	3,442	$506	$71
MESQUITE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	869	1,099	908	616	25	0	$153	N/A
MESQUITE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	1,515	N/A	$509
MESQUITE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1,419	1,865	2,552	2,030	N/A	$1315
MESQUITE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	2,460	3,030	N/A	$955
MESQUITE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	60	103	123	158	123	95	$19	$0
MESQUITE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,978	N/A	$640
MESQUITE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	833	670	N/A	$640
MIDLOTHIAN	C	CONSERVATION - MIDLOTHIAN	DEMAND REDUCTION	56	117	212	287	365	440	$46225	$97690
MIDLOTHIAN	C	CONSERVATION – WASTE PROHIBITION, MIDLOTHIAN	DEMAND REDUCTION	15	41	57	71	84	93	$7224	$17771
MIDLOTHIAN	C	CONSERVATION, IRRIGATION RESTRICTIONS – MIDLOTHIAN	DEMAND REDUCTION	4	12	17	21	24	27	$7224	$17771
MIDLOTHIAN	C	CONSERVATION, WATER LOSS CONTROL - MIDLOTHIAN	DEMAND REDUCTION	21	21	0	0	0	0	$43265	N/A
MIDLOTHIAN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	914	0	N/A	N/A
MIDLOTHIAN	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	523	1,273	1,804	2,163	2,276	N/A	[illegible]
MIDLOTHIAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,630	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MIDLOTHIAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	189	410	552	N/A	$1061
MIDLOTHIAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	44	152	144	195	148	N/A	$157
MIDLOTHIAN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	10	36	45	77	199	N/A	$157
MIDLOTHIAN	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	114	406	809	744	686	N/A	$114
MIDLOTHIAN	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	192	448	243	325	N/A	$149
MILFORD	C	CONSERVATION - MILFORD	DEMAND REDUCTION	0	0	1	1	1	2	N/A	$0
MILFORD	C	CONSERVATION, WATER LOSS CONTROL - MILFORD	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
MINING, COOKE	C	COOKE COUNTY MINING DIRECT REUSE	C | DIRECT REUSE	99	67	71	74	77	80	$2330	$342
MINING, COOKE	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	684	83	7	72	134	206	$0	$0
MINING, DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	49	21	16	28	31	29	$153	$221
MINING, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	69	53	26	24	21	N/A	$515
MINING, DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$483
MINING, DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	11	9	N/A	$697
MINING, DENTON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	5	22	168	239	263	N/A	$221
MINING, DENTON	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	16	70	153	187	188	N/A	$515
MINING, DENTON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	3	8	15	16	19	N/A	$0
MINING, DENTON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	567	N/A	$837
MINING, DENTON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	81	192	N/A	$837
MINING, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	23	46	51	120	N/A	$3
MINING, DENTON	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	12	24	28	67	N/A	$0
MINING, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	114	282	553	866	739	N/A	$80
MINING, DENTON	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	32	124	249	290	349	N/A	$80
MINING, DENTON	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	99	N/A	$483
MINING, DENTON	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	83	84	N/A	$697
MINING, FANNIN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	13	6	5	5	3	2	$225	$84
MINING, FANNIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	37	32	34	23	15	$506	$71
MINING, FANNIN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	31	12	7	4	0	0	$153	N/A
MINING, FANNIN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	6	N/A	$509
MINING, FANNIN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	11	11	13	9	N/A	$1315
MINING, FANNIN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	12	13	N/A	$955

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MINING, FANNIN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	1	1	2	1	0	$19	N/A
MINING, FANNIN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	8	N/A	$640
MINING, FANNIN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	4	3	N/A	$640
MINING, GRAYSON	C	GRAYSON COUNTY MINING NEW WELL IN TRINITY AQUIFER	C | TRINITY AQUIFER | GRAYSON COUNTY	0	0	0	41	41	41	N/A	$122
MINING, HENDERSON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	24	0	N/A	N/A
MINING, HENDERSON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	36	N/A	$1061
MINING, HENDERSON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	6	11	12	N/A	$1061
MINING, HENDERSON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	4	7	5	4	3	N/A	$157
MINING, HENDERSON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	1	2	3	5	N/A	$157
MINING, HENDERSON	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	11	19	26	19	16	N/A	$114
MINING, HENDERSON	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	9	14	6	7	N/A	$149
MINING, JACK	C	JACK COUNTY MINING INDIRECT REUSE (JACKSBORO)	C | TRINITY INDIRECT REUSE	330	342	348	351	356	359	$3	$3
MINING, JACK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	136	N/A	[illegible]
MINING, JACK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	19	34	46	N/A	[illegible]
MINING, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	401	14	19	14	16	12	$442	$157
MINING, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	5	5	6	17	N/A	$157
MINING, JACK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	562	477	474	436	441	N/A	$114
MINING, JACK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	25	44	20	27	N/A	$149
MINING, JACK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	76	0	N/A	N/A
MINING, KAUFMAN	C	KAUFMAN COUNTY MINING - NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | KAUFMAN COUNTY	0	0	344	344	344	344	N/A	$35
MINING, KAUFMAN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	6	N/A	$84
MINING, KAUFMAN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	0	0	0	1	44	N/A	$71
MINING, KAUFMAN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	20	N/A	$509
MINING, KAUFMAN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	26	N/A	$1315
MINING, KAUFMAN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1	39	N/A	$955
MINING, KAUFMAN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	1	2	N/A	[illegible]
MINING, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	26	N/A	$640

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MINING, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	0	9	N/A	$640
MINING, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	91	0	N/A	N/A
MINING, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	133	N/A	$1061
MINING, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	25	41	45	N/A	$1061
MINING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	88	28	19	19	12	N/A	$157
MINING, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	20	7	5	8	16	N/A	$157
MINING, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	223	81	107	73	56	N/A	$114
MINING, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	38	58	24	26	N/A	$149
MINING, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,110	N/A	$1061
MINING, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	151	273	377	N/A	$1061
MINING, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	122	120	147	115	130	102	$442	$157
MINING, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	78	28	38	34	51	134	$442	$157
MINING, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	304	421	645	494	468	N/A	$114
MINING, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	199	356	160	221	N/A	$149
MINING, WISE	C	WISE COUNTY MINING REUSE	C | DIRECT REUSE	0	0	87	1,234	2,401	4,022	N/A	$316
MINING, WISE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	610	0	N/A	N/A
MOUNT ZION WSC	C	CONSERVATION - MOUNT ZION WSC	DEMAND REDUCTION	5	10	18	23	30	38	$5681	$13957
MOUNT ZION WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNT ZION WSC	DEMAND REDUCTION	2	2	0	0	0	0	$2622	N/A
MOUNT ZION WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	11	14	21	16	13	$225	$84
MOUNT ZION WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	4	67	89	129	111	96	$506	$71
MOUNT ZION WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	13	21	19	14	1	0	$153	N/A
MOUNT ZION WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	42	N/A	$509
MOUNT ZION WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	29	43	65	56	N/A	$1315
MOUNT ZION WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	62	83	N/A	$955
MOUNT ZION WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	4	3	3	3	$19	$0
MOUNT ZION WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	54	N/A	$640
MOUNT ZION WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	21	18	N/A	$640
MOUNTAIN PEAK SUD	C	CONSERVATION - MOUNTAIN PEAK SUD	DEMAND REDUCTION	6	14	26	75	126	192	$0	$40882
MOUNTAIN PEAK SUD	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN PEAK SUD	DEMAND REDUCTION	8	8	0	116	425	516	$3026	$67402

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MOUNTAIN PEAK SUD	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	154	325	516	717	970	1,033	$0	$0
MOUNTAIN PEAK SUD	C	MOUNTAIN PEAK SUD ADDITIONAL WELLS (WOODBINE)	C | WOODBINE AQUIFER | ELLIS COUNTY	7	7	7	7	7	7	$727	$145
MOUNTAIN PEAK SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	491	N/A	$1061
MOUNTAIN PEAK SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	44	70	131	N/A	$1061
MOUNTAIN PEAK SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	14	44	34	34	35	N/A	$157
MOUNTAIN PEAK SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	11	10	13	48	N/A	$157
MOUNTAIN PEAK SUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	37	127	191	127	162	N/A	$114
MOUNTAIN PEAK SUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	60	105	41	77	N/A	$149
MOUNTAIN PEAK SUD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	156	0	N/A	N/A
MOUNTAIN SPRING WSC	C	CONSERVATION - MOUNTAIN SPRING WSC	DEMAND REDUCTION	2	3	5	7	14	26	$0	$0
MOUNTAIN SPRING WSC	C	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN SPRING WSC	DEMAND REDUCTION	2	2	0	0	0	0	$936	N/A
MOUNTAIN SPRING WSC	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	0	0	0	282	750	N/A	$0
MUENSTER	C	CONSERVATION - MUENSTER	DEMAND REDUCTION	1	2	6	7	9	10	$0	[illegible]
MUENSTER	C	CONSERVATION, WATER LOSS CONTROL - MUENSTER	DEMAND REDUCTION	1	1	0	0	0	0	$1772	[illegible]
MUENSTER	C	DEVELOP LAKE MUENSTER SUPPLY	C | MUENSTER LAKE/RESERVOIR	280	280	280	280	280	280	$4393	$1852
MURPHY	C	CONSERVATION - MURPHY	DEMAND REDUCTION	71	114	157	175	191	208	$57833	$57833
MURPHY	C	CONSERVATION – WASTE PROHIBITION, MURPHY	DEMAND REDUCTION	27	53	53	53	53	53	$9048	$8434
MURPHY	C	CONSERVATION, WATER LOSS CONTROL - MURPHY	DEMAND REDUCTION	26	26	0	0	0	0	$17527	N/A
MURPHY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	68	120	128	149	104	73	$225	$84
MURPHY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	51	680	766	932	681	505	$506	$71
MURPHY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	161	214	161	103	4	0	$153	N/A
MURPHY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	222	N/A	$509
MURPHY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	252	311	398	297	N/A	$1315
MURPHY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	384	444	N/A	$955
MURPHY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	11	21	22	26	19	15	$19	$0
MURPHY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	290	N/A	$640
MURPHY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	130	98	N/A	[illegible]
MUSTANG SUD	C	CONSERVATION - MUSTANG SUD	DEMAND REDUCTION	6	24	52	91	142	204	$0	$0
MUSTANG SUD	C	CONSERVATION, WATER LOSS CONTROL - MUSTANG SUD	DEMAND REDUCTION	9	9	0	0	0	0	$15598	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MUSTANG SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	15	66	420	558	674	N/A	$221
MUSTANG SUD	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	48	207	383	438	480	N/A	$515
MUSTANG SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	10	23	37	38	48	N/A	$0
MUSTANG SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,450	N/A	$837
MUSTANG SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	190	491	N/A	$837
MUSTANG SUD	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	69	114	120	308	N/A	$3
MUSTANG SUD	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	35	60	64	170	N/A	$0
MUSTANG SUD	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	345	840	1,383	2,018	1,887	N/A	$80
MUSTANG SUD	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	99	369	623	675	891	N/A	$80
MUSTANG SUD	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	253	N/A	$483
MUSTANG SUD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	193	214	N/A	$697
NAVARRO MILLS WSC	C	CONSERVATION - NAVARRO MILLS WSC	DEMAND REDUCTION	1	2	4	6	8	10	$0	$0
NAVARRO MILLS WSC	C	CONSERVATION, WATER LOSS CONTROL - NAVARRO MILLS WSC	DEMAND REDUCTION	2	2	0	0	0	0	$896	N/A
NAVARRO MILLS WSC	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	72	153	202	N/A	$596
NAVARRO MILLS WSC	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	127	155	121	87	92	N/A	$0
NAVARRO MILLS WSC	C	NAVARRO MILLS WSC NEW WELLS (WOODBINE)	C | WOODBINE AQUIFER | NAVARRO COUNTY	0	0	0	79	79	79	N/A	$370
NEVADA	C	CONSERVATION - NEVADA	DEMAND REDUCTION	0	1	1	7	22	47	N/A	$0
NEVADA	C	CONSERVATION, WATER LOSS CONTROL - NEVADA	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
NEVADA	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	3	3	16	29	36	$225	$84
NEVADA	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	2	17	22	104	187	247	$506	$71
NEVADA	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	4	5	5	11	1	0	$153	N/A
NEVADA	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	109	N/A	$509
NEVADA	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	7	35	109	145	N/A	$1315
NEVADA	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	106	218	N/A	$955
NEVADA	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1	3	6	8	N/A	$0
NEVADA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	142	N/A	$640
NEVADA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	36	48	N/A	$640
NEW FAIRVIEW	C	CONSERVATION - NEW FAIRVIEW	DEMAND REDUCTION	1	1	2	4	6	8	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
NEW FAIRVIEW	C	CONSERVATION, WATER LOSS CONTROL - NEW FAIRVIEW	DEMAND REDUCTION	1	1	0	0	0	0	$248	N/A
NEW FAIRVIEW	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	25	0	N/A	N/A
NEW FAIRVIEW	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	56	N/A	$1061
NEW FAIRVIEW	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	4	11	19	N/A	$1061
NEW FAIRVIEW	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	33	61	90	101	104	N/A	$157
NEW FAIRVIEW	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	1	2	7	N/A	$157
NEW FAIRVIEW	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	6	16	20	24	N/A	$114
NEW FAIRVIEW	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	3	9	6	11	N/A	$149
NEW HOPE	C	CONSERVATION - NEW HOPE	DEMAND REDUCTION	0	1	2	3	4	6	N/A	$0
NEW HOPE	C	CONSERVATION, WATER LOSS CONTROL - NEW HOPE	DEMAND REDUCTION	1	1	0	0	0	0	$279	N/A
NEW HOPE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	3	5	6	5	5	$225	$84
NEW HOPE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	21	28	41	36	31	$506	$71
NEW HOPE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	5	7	6	5	0	0	$153	N/A
NEW HOPE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	14	N/A	[illegible]
NEW HOPE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	9	14	21	18	N/A	$1315
NEW HOPE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	20	27	N/A	$955
NEW HOPE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1	1	1	1	N/A	$0
NEW HOPE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	18	N/A	$640
NEW HOPE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	7	6	N/A	$640
NEWARK	C	CONSERVATION - NEWARK	DEMAND REDUCTION	1	2	3	6	11	17	$0	$0
NEWARK	C	CONSERVATION, WATER LOSS CONTROL - NEWARK	DEMAND REDUCTION	1	1	0	0	0	0	$333	N/A
NEWARK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	67	0	N/A	N/A
NEWARK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	166	N/A	$1061
NEWARK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	8	29	56	N/A	$1061
NEWARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	50	126	196	266	301	N/A	$157
NEWARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	2	5	20	N/A	$157
NEWARK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	14	35	53	70	N/A	[illegible]
NEWARK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	6	20	17	33	N/A	$149
NORTH COLLIN WSC	C	CONSERVATION - NORTH COLLIN WSC	DEMAND REDUCTION	3	6	10	15	21	29	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
NORTH COLLIN WSC	C	CONSERVATION, WATER LOSS CONTROL - NORTH COLLIN WSC	DEMAND REDUCTION	4	4	0	0	0	0	$1446	N/A
NORTH COLLIN WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	13	22	27	35	28	23	$225	$84
NORTH COLLIN WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	127	161	220	182	153	$506	$71
NORTH COLLIN WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	31	40	34	24	1	0	$153	N/A
NORTH COLLIN WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	67	N/A	$509
NORTH COLLIN WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	53	73	107	90	N/A	$1315
NORTH COLLIN WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	103	135	N/A	$955
NORTH COLLIN WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	5	5	6	5	4	$19	$0
NORTH COLLIN WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	88	N/A	$640
NORTH COLLIN WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	35	30	N/A	$640
NORTH RICHLAND HILLS	C	CONSERVATION - NORTH RICHLAND HILLS	DEMAND REDUCTION	169	290	395	435	478	522	$121655	$127000
NORTH RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - NORTH RICHLAND HILLS	DEMAND REDUCTION	64	64	0	0	0	0	$149061	N/A
NORTH RICHLAND HILLS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	507	0	N/A	N/A
NORTH RICHLAND HILLS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	1,817	1,642	1,426	1,416	871	417	$0	$0
NORTH RICHLAND HILLS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	1,015	0	N/A	N/A
NORTH RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,577	N/A	$1061
NORTH RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,160	N/A	$1061
NORTH RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	275	455	534	N/A	$1061
NORTH RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	129	227	267	N/A	$1061
NORTH RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	1,473	699	451	209	216	144	$442	$157
NORTH RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	2,681	2,327	472	767	216	72	$442	$157
NORTH RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	886	160	116	64	85	192	$442	$157
NORTH RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	18	34	30	41	96	N/A	$157
NORTH RICHLAND HILLS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,770	1,289	1,176	824	664	N/A	$114
NORTH RICHLAND HILLS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	190	380	1,176	824	332	N/A	$114
NORTH RICHLAND HILLS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	609	649	267	314	N/A	$149
NORTH RICHLAND HILLS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1,691	649	1,109	157	N/A	$149

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3,505	4,172	4,169	4,197	4,231	4,219	$0	$0
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2,876	3,430	3,451	3,499	3,553	3,568	$0	$0
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	3,862	5,796	6,807	7,887	8,529	8,831	$0	$0
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1,672	1,990	1,993	2,012	2,033	2,032	$0	$0
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	996	0	0	0	0	0	$0	N/A
NORTH TEXAS MWD - WATER LOSS	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	1,531	541	547	557	566	567	$0	$0
NORTHLAKE	C	CONSERVATION - NORTHLAKE	DEMAND REDUCTION	12	74	186	287	403	440	$12528	$105000
NORTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - NORTHLAKE	DEMAND REDUCTION	5	5	0	0	0	0	$14369	N/A
NORTHLAKE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	15	69	439	581	480	N/A	$221
NORTHLAKE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	76	163	178	170	115	N/A	$0
NORTHLAKE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	278	0	N/A	N/A
NORTHLAKE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	46	218	401	456	342	N/A	$515
NORTHLAKE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	10	25	39	40	34	N/A	[illegible]
NORTHLAKE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	435	N/A	$1061
NORTHLAKE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,034	N/A	$837
NORTHLAKE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	56	125	147	N/A	$1061
NORTHLAKE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	198	350	N/A	$837
NORTHLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	12	40	42	58	39	N/A	$157
NORTHLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	10	12	24	53	N/A	$157
NORTHLAKE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	32	114	236	225	181	N/A	$114
NORTHLAKE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	54	131	73	86	N/A	$149
NORTHLAKE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	73	119	125	219	N/A	$3
NORTHLAKE	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	37	62	67	121	N/A	$0
NORTHLAKE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	334	882	1,450	2,101	1,348	N/A	$80
NORTHLAKE	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	95	388	653	711	636	N/A	$80
NORTHLAKE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	181	N/A	[illegible]
NORTHLAKE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	201	152	N/A	[illegible]
OAK GROVE	C	CONSERVATION - OAK GROVE	DEMAND REDUCTION	0	1	1	2	4	8	N/A	$0
OAK GROVE	C	CONSERVATION, WATER LOSS CONTROL - OAK GROVE	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
OAK GROVE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	3	5	5	6	$225	$84
OAK GROVE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	2	13	17	31	30	44	$506	$71
OAK GROVE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	3	4	4	3	0	0	$153	N/A
OAK GROVE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	19	N/A	$509
OAK GROVE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	6	10	18	26	N/A	$1315
OAK GROVE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	17	39	N/A	$955
OAK GROVE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	0	1	0	2	N/A	$0
OAK GROVE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	25	N/A	$640
OAK GROVE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	6	9	N/A	$640
OAK LEAF	C	CONSERVATION - OAK LEAF	DEMAND REDUCTION	1	1	2	3	6	9	$0	$0
OAK LEAF	C	CONSERVATION, WATER LOSS CONTROL - OAK LEAF	DEMAND REDUCTION	1	1	0	0	0	0	$323	N/A
OAK LEAF	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	4	3	7	29	48	59	$153	$221
OAK LEAF	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	10	20	27	38	42	N/A	$515
OAK LEAF	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	16	25	31	34	40	42	$0	$0
OAK LEAF	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	22	N/A	$483
OAK LEAF	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	17	19	N/A	$697
OAK POINT	C	CONSERVATION - OAK POINT	DEMAND REDUCTION	4	10	21	35	53	63	$0	$0
OAK POINT	C	CONSERVATION, WATER LOSS CONTROL - OAK POINT	DEMAND REDUCTION	5	5	0	0	0	0	$3441	N/A
OAK POINT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	8	29	170	213	176	N/A	$221
OAK POINT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	26	92	155	168	126	N/A	$515
OAK POINT	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	5	10	15	15	13	N/A	$0
OAK POINT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	379	N/A	$837
OAK POINT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	73	129	N/A	$837
OAK POINT	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	31	46	46	80	N/A	$3
OAK POINT	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	16	24	25	45	N/A	$0
OAK POINT	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	189	374	561	774	494	N/A	$80
OAK POINT	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	54	164	252	258	233	N/A	$80
OAK POINT	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	66	N/A	$483
OAK POINT	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	74	56	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
OVILLA	C	CONSERVATION - OVILLA	DEMAND REDUCTION	15	29	51	69	92	184	$12596	$50833
OVILLA	C	CONSERVATION, WATER LOSS CONTROL - OVILLA	DEMAND REDUCTION	5	5	0	0	0	0	$3383	N/A
OVILLA	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	30	34	79	274	350	621	$153	$221
OVILLA	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	112	250	250	274	443	N/A	$515
OVILLA	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	234	N/A	$483
OVILLA	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	121	197	N/A	$697
PALMER	C	CONSERVATION - PALMER	DEMAND REDUCTION	1	2	4	7	11	25	$0	$0
PALMER	C	CONSERVATION, WATER LOSS CONTROL - PALMER	DEMAND REDUCTION	1	1	0	0	0	0	$2590	N/A
PALMER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	86	0	0	0	0	0	$1085	N/A
PALMER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	151	234	321	459	940	N/A	$114
PALOMA CREEK	C	CONSERVATION - PALOMA CREEK	DEMAND REDUCTION	35	75	104	115	127	138	$32979	$43458
PALOMA CREEK	C	CONSERVATION, WATER LOSS CONTROL - PALOMA CREEK	DEMAND REDUCTION	13	13	0	0	0	0	$9206	N/A
PALOMA CREEK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	20	51	232	239	210	N/A	$221
PALOMA CREEK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	63	161	212	187	150	N/A	$515
PALOMA CREEK	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	13	18	21	16	15	N/A	[illegible]
PALOMA CREEK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	452	N/A	$837
PALOMA CREEK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	81	153	N/A	$837
PALOMA CREEK	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	54	63	51	96	N/A	$3
PALOMA CREEK	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	27	33	28	53	N/A	$0
PALOMA CREEK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	458	655	766	866	589	N/A	$80
PALOMA CREEK	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	131	287	346	290	280	N/A	$80
PALOMA CREEK	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	79	N/A	$483
PALOMA CREEK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	82	67	N/A	$697
PANTEGO	C	CONSERVATION - PANTEGO	DEMAND REDUCTION	2	4	6	8	10	12	$0	$0
PANTEGO	C	CONSERVATION, WATER LOSS CONTROL - PANTEGO	DEMAND REDUCTION	3	3	0	0	0	0	$1834	N/A
PANTEGO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$1061
PANTEGO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$1061
PANTEGO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	3	4	4	N/A	$1061
PANTEGO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	3	4	4	N/A	$1061
PANTEGO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	7	5	3	2	1	N/A	[illegible]
PANTEGO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	14	10	5	4	2	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
PANTEGO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	2	1	1	2	N/A	$157
PANTEGO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	3	1	1	3	N/A	$157
PANTEGO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	18	14	13	8	5	N/A	$114
PANTEGO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	36	28	26	15	9	N/A	$114
PANTEGO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	7	7	3	2	N/A	$149
PANTEGO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	13	14	5	4	N/A	$149
PANTEGO	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	17	0	N/A	N/A
PARKER	C	CONSERVATION - PARKER	DEMAND REDUCTION	35	147	254	282	310	338	$16611	$50833
PARKER	C	CONSERVATION, WATER LOSS CONTROL - PARKER	DEMAND REDUCTION	13	13	0	0	0	0	$9981	N/A
PARKER	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	36	356	342	342	216	145	$225	$84
PARKER	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	27	2,013	2,046	2,138	1,415	993	$506	$71
PARKER	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	86	635	431	236	8	0	$153	N/A
PARKER	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	437	N/A	$509
PARKER	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	552	563	727	543	N/A	$1315
PARKER	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	700	811	N/A	$955
PARKER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	276	630	626	508	397	N/A	$0
PARKER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	222	523	518	425	337	N/A	$0
PARKER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	373	1,032	1,167	1,021	832	N/A	$0
PARKER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	129	300	298	244	192	N/A	$0
PARKER	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	6	58	58	59	41	28	$19	$0
PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	530	N/A	$640
PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	237	179	N/A	$640
PARKER COUNTY SUD	C	CONSERVATION - PARKER COUNTY SUD	DEMAND REDUCTION	2	6	11	18	27	40	$0	$0
PARKER COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY SUD	DEMAND REDUCTION	3	3	0	0	0	0	$2982	N/A
PARKER COUNTY SUD	C	PARKER COUNTY SUD - BRA SURPLUS (NEW WTP)	G | BRAZOS RIVER AUTHORITY MAIN STEM LAKE/RESERVOIR SYSTEM	539	539	539	539	539	539	$1499	$1499

Recommended Water User Group (WUG) Water Management Strategies (WMS)

Water Management Strategy Supplies

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
PARKER COUNTY SUD	C	PARKER COUNTY SUD ADDITIONAL GROUNDWATER (NEW WELLS IN TRINITY AQUIFER)	C | TRINITY AQUIFER | PARKER COUNTY	0	0	0	0	513	513	N/A	$881
PAYNE SPRINGS	C	CONSERVATION - PAYNE SPRINGS	DEMAND REDUCTION	0	1	2	2	3	5	N/A	$0
PAYNE SPRINGS	C	CONSERVATION, WATER LOSS CONTROL - PAYNE SPRINGS	DEMAND REDUCTION	1	1	0	0	0	0	$184	N/A
PAYNE SPRINGS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	12	0	N/A	N/A
PAYNE SPRINGS	C	PAYNE SPRINGS ADDITIONAL WELLS (CARRIZO-WILCOX)	C | CARRIZO-WILCOX AQUIFER | HENDERSON COUNTY	145	145	145	145	145	145	$749	$232
PAYNE SPRINGS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	12	N/A	$1061
PAYNE SPRINGS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	3	5	8	N/A	$1061
PAYNE SPRINGS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	25	24	25	23	29	39	$442	$157
PAYNE SPRINGS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	0	1	1	3	N/A	$157
PAYNE SPRINGS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	3	7	12	10	9	N/A	$114
PAYNE SPRINGS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	4	6	3	4	N/A	$149
PECAN HILL	C	CONSERVATION - PECAN HILL	DEMAND REDUCTION	0	1	2	3	4	8	N/A	$0
PECAN HILL	C	CONSERVATION, WATER LOSS CONTROL - PECAN HILL	DEMAND REDUCTION	1	1	0	0	0	0	$181	N/A
PECAN HILL	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	33	59	90	124	174	290	$0	$0
PELICAN BAY	C	CONSERVATION - PELICAN BAY	DEMAND REDUCTION	0	1	1	1	2	2	N/A	$0
PELICAN BAY	C	CONSERVATION, WATER LOSS CONTROL - PELICAN BAY	DEMAND REDUCTION	1	1	0	0	0	0	$846	N/A
PELICAN BAY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	5	N/A	$1061
PELICAN BAY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	1	2	N/A	$1061
PELICAN BAY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	3	2	1	0	0	N/A	N/A
PELICAN BAY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	0	0	1	N/A	$157
PELICAN BAY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	7	5	5	3	2	N/A	$114
PELICAN BAY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2	2	1	1	N/A	$149
PELICAN BAY	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	3	0	N/A	N/A
PILOT POINT	C	CONSERVATION - PILOT POINT	DEMAND REDUCTION	3	4	14	26	44	71	$0	$0
PILOT POINT	C	CONSERVATION, WATER LOSS CONTROL - PILOT POINT	DEMAND REDUCTION	4	4	0	0	0	0	$3163	N/A
PILOT POINT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	14	137	227	258	N/A	$221
PILOT POINT	C	PILOT POINT ADDITIONAL GROUNDWATER	C | TRINITY AQUIFER | DENTON COUNTY	269	269	269	269	269	269	$497	$229
PILOT POINT	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	5	12	16	18	N/A	[illegible]
PILOT POINT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	556	N/A	$837
PILOT POINT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	77	188	N/A	$837

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
PILOT POINT	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	15	37	49	118	N/A	$3
PILOT POINT	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	7	19	26	65	N/A	$0
PILOT POINT	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	0	176	451	827	726	N/A	$80
PILOT POINT	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	0	77	203	275	342	N/A	$80
PILOT POINT	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	78	82	N/A	$697
PLANO	C	CONSERVATION - PLANO	DEMAND REDUCTION	1,115	1,790	2,640	2,457	2,698	2,941	$496667	$337213
PLANO	C	CONSERVATION, WATER LOSS CONTROL - PLANO	DEMAND REDUCTION	345	345	0	0	0	0	$141375	N/A
PLANO	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	927	1,669	1,809	2,157	1,500	1,054	$225	$84
PLANO	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	696	9,446	10,844	13,484	9,809	7,250	$506	$71
PLANO	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	2,198	2,977	2,286	1,485	57	0	$153	N/A
PLANO	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	3,190	N/A	$509
PLANO	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	3,570	4,493	5,738	4,275	N/A	$1315
PLANO	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	5,530	6,380	N/A	$955
PLANO	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	150	277	310	380	273	200	$19	$0
PLANO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	4,165	N/A	$640
PLANO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	1,873	1,411	N/A	$640
PONDER	C	CONSERVATION - PONDER	DEMAND REDUCTION	1	2	5	8	12	18	$0	$0
PONDER	C	CONSERVATION, WATER LOSS CONTROL - PONDER	DEMAND REDUCTION	1	1	0	0	0	0	$1760	N/A
PONDER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	1	16	31	35	N/A	$221
PONDER	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	3	15	24	25	N/A	$515
PONDER	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	1	2	2	N/A	$0
PONDER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	75	N/A	$837
PONDER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	10	25	N/A	$837
PONDER	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	1	4	6	16	N/A	$3
PONDER	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	1	2	3	9	N/A	$0
PONDER	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	0	12	55	110	97	N/A	$80
PONDER	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	0	48	142	225	273	N/A	$80
PONDER	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	13	N/A	$483
PONDER	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	10	11	N/A	$697

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
POST OAK BEND CITY	C	CONSERVATION - POST OAK BEND CITY	DEMAND REDUCTION	0	1	1	3	5	11	N/A	$0
POST OAK BEND CITY	C	CONSERVATION, WATER LOSS CONTROL - POST OAK BEND CITY	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
POST OAK BEND CITY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	3	3	6	6	8	$225	$84
POST OAK BEND CITY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	17	22	40	40	57	$506	$71
POST OAK BEND CITY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	4	5	5	4	0	0	$153	N/A
POST OAK BEND CITY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	25	N/A	$509
POST OAK BEND CITY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	7	13	23	34	N/A	$1315
POST OAK BEND CITY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	22	51	N/A	$955
POST OAK BEND CITY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1	3	1	2	N/A	$0
POST OAK BEND CITY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	33	N/A	$640
POST OAK BEND CITY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	7	11	N/A	$640
POTTSBORO	C	CONSERVATION - POTTSBORO	DEMAND REDUCTION	2	4	16	28	59	116	$0	$46167
POTTSBORO	C	CONSERVATION, WATER LOSS CONTROL - POTTSBORO	DEMAND REDUCTION	2	2	0	0	0	0	$3589	N/A
POTTSBORO	C	DENISON UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	51	102	141	203	272	N/A	$0
POTTSBORO	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	47	260	876	2,116	N/A	$535
PRINCETON	C	CONSERVATION - PRINCETON	DEMAND REDUCTION	3	8	16	49	97	158	$0	$0
PRINCETON	C	CONSERVATION, WATER LOSS CONTROL - PRINCETON	DEMAND REDUCTION	5	5	0	0	0	0	$1772	N/A
PRINCETON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	16	32	43	115	126	121	$225	$84
PRINCETON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	12	181	256	724	825	828	$506	$71
PRINCETON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	38	57	54	80	5	0	$153	N/A
PRINCETON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	364	N/A	$509
PRINCETON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	84	241	483	488	N/A	$1315
PRINCETON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	465	728	N/A	$955
PRINCETON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	6	7	21	22	23	$19	$0
PRINCETON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	475	N/A	$640
PRINCETON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	158	161	N/A	$640
PROSPER	C	CONSERVATION - PROSPER	DEMAND REDUCTION	171	338	557	754	972	1,030	$55130	$127434
PROSPER	C	CONSERVATION, WATER LOSS CONTROL - PROSPER	DEMAND REDUCTION	27	27	0	0	0	0	$20510	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
PROSPER	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	51	248	367	532	432	289	$225	$84
PROSPER	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	39	1,404	2,198	3,324	2,828	1,988	$506	$71
PROSPER	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	122	442	463	366	16	0	$153	N/A
PROSPER	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	875	N/A	$509
PROSPER	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	630	895	1,437	1,081	N/A	$1315
PROSPER	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1,385	1,613	N/A	$955
PROSPER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	93	490	891	1,090	860	N/A	$0
PROSPER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	74	404	738	915	731	N/A	$0
PROSPER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	125	798	1,662	2,199	902	N/A	$0
PROSPER	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	43	232	424	525	416	N/A	$0
PROSPER	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	9	41	62	95	80	54	$19	$0
PROSPER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,958	N/A	$640
PROSPER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	469	357	N/A	$640
PROVIDENCE VILLAGE WCID	C	CONSERVATION - PROVIDNECE VILLAGE WCID	DEMAND REDUCTION	3	6	9	12	15	19	$0	$0
PROVIDENCE VILLAGE WCID	C	CONSERVATION, WATER LOSS CONTROL - PROVIDENCE VILLAGE WCID	DEMAND REDUCTION	5	5	0	0	0	0	$2660	N/A
PROVIDENCE VILLAGE WCID	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	6	14	65	66	55	N/A	$221
PROVIDENCE VILLAGE WCID	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	18	46	59	52	39	N/A	$515
PROVIDENCE VILLAGE WCID	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	4	5	6	5	4	N/A	$0
PROVIDENCE VILLAGE WCID	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	117	N/A	$837
PROVIDENCE VILLAGE WCID	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	25	40	N/A	$837
PROVIDENCE VILLAGE WCID	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	15	18	14	25	N/A	$3
PROVIDENCE VILLAGE WCID	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	8	9	8	14	N/A	$0
PROVIDENCE VILLAGE WCID	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	131	185	214	238	151	N/A	$80
PROVIDENCE VILLAGE WCID	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	38	81	96	80	72	N/A	$80
PROVIDENCE VILLAGE WCID	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	20	N/A	$483
PROVIDENCE VILLAGE WCID	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	23	17	N/A	$697
RED OAK	C	CONSERVATION - RED OAK	DEMAND REDUCTION	6	14	28	50	77	143	$0	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
RED OAK	C	CONSERVATION, WATER LOSS CONTROL - RED OAK	DEMAND REDUCTION	9	9	0	0	0	0	$5317	N/A
RED OAK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	6	50	283	426	794	N/A	$221
RED OAK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	21	159	259	335	566	N/A	$515
RED OAK	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	23	238	348	348	290	127	$0	$0
RED OAK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	341	289	311	381	515	229	$1085	$238
RED OAK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	0	504	N/A	$157
RED OAK	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	299	N/A	$483
RED OAK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	147	252	N/A	$697
RENO	C	CONSERVATION - RENO	DEMAND REDUCTION	1	1	2	2	3	4	$0	$0
RENO	C	CONSERVATION, WATER LOSS CONTROL - RENO	DEMAND REDUCTION	1	1	0	0	0	0	$117	N/A
RENO	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	8	0	N/A	N/A
RENO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	11	N/A	$1061
RENO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	3	4	N/A	$1061
RENO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	1	1	1	1	1	N/A	[illegible]
RENO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	0	0	1	N/A	$157
RENO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	4	6	5	5	N/A	$114
RENO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	2	4	2	2	N/A	$149
RHOME	C	CONSERVATION - RHOME	DEMAND REDUCTION	5	13	22	40	58	80	$6768	$32167
RHOME	C	CONSERVATION, WATER LOSS CONTROL - RHOME	DEMAND REDUCTION	2	2	0	0	0	0	$328	N/A
RHOME	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	180	0	N/A	N/A
RHOME	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	417	N/A	$1061
RHOME	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	26	81	141	N/A	$1061
RHOME	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	3	12	19	38	38	N/A	$157
RHOME	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	3	6	15	51	N/A	$157
RHOME	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	8	36	109	146	176	N/A	$114
RHOME	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	17	60	48	83	N/A	$149
RICE	C	CONSERVATION - RICE	DEMAND REDUCTION	1	1	2	3	4	5	$0	$0
RICE	C	CONSERVATION, WATER LOSS CONTROL - RICE	DEMAND REDUCTION	1	1	0	0	0	0	$212	N/A
RICE	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	35	74	97	N/A	[illegible]
RICE	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	60	74	58	41	44	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
RICE WSC	C	CONSERVATION - RICE WSC	DEMAND REDUCTION	3	6	12	19	28	40	$0	$0
RICE WSC	C	CONSERVATION, WATER LOSS CONTROL - RICE WSC	DEMAND REDUCTION	4	4	0	0	0	0	$2407	N/A
RICE WSC	C	CORSICANA - HALBERT/RICHLAND CHAMBERS NEW WTP	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	225	531	769	N/A	$596
RICE WSC	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	310	428	374	300	352	N/A	$0
RICE WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	16	28	37	N/A	$87
RICE WSC	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	9	0	0	0	N/A	N/A
RICHARDSON	C	CONSERVATION - RICHARDSON	DEMAND REDUCTION	472	698	941	1,054	1,146	1,240	$167835	$180179
RICHARDSON	C	CONSERVATION, WATER LOSS CONTROL - RICHARDSON	DEMAND REDUCTION	132	132	0	0	0	0	$66346	N/A
RICHARDSON	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	343	628	683	815	568	399	$225	$84
RICHARDSON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	257	3,553	4,089	5,093	3,712	2,747	$506	$71
RICHARDSON	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	813	1,120	862	561	22	0	$153	N/A
RICHARDSON	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	1,209	N/A	$509
RICHARDSON	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	1,346	1,698	2,171	1,620	N/A	$1315
RICHARDSON	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	2,093	2,418	N/A	$955
RICHARDSON	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	56	104	117	144	102	75	$19	$0
RICHARDSON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,578	N/A	$640
RICHARDSON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	709	535	N/A	$640
RICHLAND HILLS	C	CONSERVATION - RICHLAND HILLS	DEMAND REDUCTION	4	8	12	18	25	34	$0	$0
RICHLAND HILLS	C	CONSERVATION, WATER LOSS CONTROL - RICHLAND HILLS	DEMAND REDUCTION	6	6	0	0	0	0	$12033	N/A
RICHLAND HILLS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	97	119	107	90	70	N/A	$0
RICHLAND HILLS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	155	0	N/A	N/A
RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	435	N/A	$1061
RICHLAND HILLS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	36	70	93	N/A	$1061
RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	19	33	27	34	25	N/A	$157
RICHLAND HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	4	8	9	13	34	N/A	$157
RICHLAND HILLS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	48	95	153	127	116	N/A	$114
RICHLAND HILLS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	45	85	41	55	N/A	$149
RIVER OAKS	C	CONSERVATION - RIVER OAKS	DEMAND REDUCTION	3	5	8	10	13	15	$0	$0
RIVER OAKS	C	CONSERVATION, WATER LOSS CONTROL - RIVER OAKS	DEMAND REDUCTION	4	4	0	0	0	0	$8396	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
RIVER OAKS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	96	0	N/A	N/A
RIVER OAKS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	147	N/A	$1061
RIVER OAKS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	25	43	50	N/A	$1061
RIVER OAKS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	17	27	19	20	13	N/A	$157
RIVER OAKS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	3	7	6	9	19	N/A	$157
RIVER OAKS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	44	77	107	77	62	N/A	$114
RIVER OAKS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	36	58	25	29	N/A	$149
ROANOKE	C	CONSERVATION - ROANOKE	DEMAND REDUCTION	31	61	101	112	123	134	$21988	$32167
ROANOKE	C	CONSERVATION, IRRIGATION RESTRICTIONS – ROANOKE	DEMAND REDUCTION	2	6	7	7	7	7	$3538	$4400
ROANOKE	C	CONSERVATION, WATER LOSS CONTROL - ROANOKE	DEMAND REDUCTION	11	11	0	0	0	0	$7752	N/A
ROANOKE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	291	406	319	237	161	N/A	$0
ROANOKE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	389	0	N/A	N/A
ROANOKE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	604	N/A	$1061
ROANOKE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	99	174	205	N/A	$[illegible]
ROANOKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	46	100	75	83	55	N/A	$157
ROANOKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	11	26	23	32	74	N/A	$157
ROANOKE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	117	287	423	315	254	N/A	$114
ROANOKE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	135	234	102	120	N/A	$149
ROCKETT SUD	C	CONSERVATION - ROCKETT SUD	DEMAND REDUCTION	13	32	60	99	160	236	$0	$0
ROCKETT SUD	C	CONSERVATION, WATER LOSS CONTROL - ROCKETT SUD	DEMAND REDUCTION	19	19	0	0	0	0	$41840	N/A
ROCKETT SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	244	0	N/A	N/A
ROCKETT SUD	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	735	0	N/A	N/A
ROCKETT SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	389	N/A	$1061
ROCKETT SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	8,120	N/A	$1061
ROCKETT SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	60	110	132	N/A	$1061
ROCKETT SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	2,159	1,915	2,579	N/A	$1061
ROCKETT SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	32	59	46	283	36	N/A	$157
ROCKETT SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	873	616	615	71	283	0	$442	[illegible]
ROCKETT SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	7	15	14	20	47	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ROCKETT SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	705	251	324	252	388	488	$442	$157
ROCKETT SUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	80	168	257	198	164	N/A	$114
ROCKETT SUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,416	1,358	902	1,084	0	N/A	N/A
ROCKETT SUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	79	142	64	77	N/A	$149
ROCKETT SUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1,704	426	29	19	N/A	$149
ROCKETT SUD	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	282	0	N/A	N/A
ROCKWALL	C	CONSERVATION - ROCKWALL	DEMAND REDUCTION	285	446	658	834	1,045	1,286	$102014	$184895
ROCKWALL	C	CONSERVATION, WATER LOSS CONTROL - ROCKWALL	DEMAND REDUCTION	45	45	0	0	0	0	$34265	N/A
ROCKWALL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	87	244	319	444	368	302	$225	$84
ROCKWALL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	65	1,378	1,913	2,781	2,405	2,074	$506	$71
ROCKWALL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	207	434	403	306	14	0	$153	N/A
ROCKWALL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	912	N/A	$509
ROCKWALL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	629	926	1,405	1,223	N/A	$1315
ROCKWALL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	1,354	1,825	N/A	$955
ROCKWALL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	14	39	54	80	65	56	$19	$0
ROCKWALL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,191	N/A	$640
ROCKWALL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	459	404	N/A	$640
ROSE HILL SUD	C	CONSERVATION - ROSE HILL SUD	DEMAND REDUCTION	2	4	7	11	17	32	$0	$0
ROSE HILL SUD	C	CONSERVATION, WATER LOSS CONTROL - ROSE HILL SUD	DEMAND REDUCTION	2	2	0	0	0	0	$1853	N/A
ROSE HILL SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	8	14	18	25	23	24	$225	$84
ROSE HILL SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	6	80	107	155	147	166	$506	$71
ROSE HILL SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	18	25	23	17	1	0	$153	N/A
ROSE HILL SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	73	N/A	$509
ROSE HILL SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	35	52	86	97	N/A	$1315
ROSE HILL SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	83	146	N/A	$955
ROSE HILL SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	3	3	4	4	5	N/A	$0
ROSE HILL SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	95	N/A	$640
ROSE HILL SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	28	32	N/A	$640

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
ROWLETT	C	CONSERVATION - ROWLETT	DEMAND REDUCTION	33	70	103	137	171	205	$0	$0
ROWLETT	C	CONSERVATION, WATER LOSS CONTROL - ROWLETT	DEMAND REDUCTION	49	49	0	0	0	0	$123128	N/A
ROWLETT	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	163	271	282	323	223	155	$225	$84
ROWLETT	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	122	1,532	1,692	2,020	1,460	1,073	$506	$71
ROWLETT	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	384	483	357	223	8	0	$153	N/A
ROWLETT	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	471	N/A	$509
ROWLETT	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	557	673	853	632	N/A	$1315
ROWLETT	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	822	942	N/A	$955
ROWLETT	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	26	45	49	57	41	30	$19	$0
ROWLETT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	615	N/A	$640
ROWLETT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	278	208	N/A	$640
ROYSE CITY	C	CONSERVATION - ROYSE CITY	DEMAND REDUCTION	4	11	26	66	147	199	$0	$0
ROYSE CITY	C	CONSERVATION, WATER LOSS CONTROL - ROYSE CITY	DEMAND REDUCTION	6	6	0	0	0	0	$2216	[illegible]
ROYSE CITY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	20	46	71	160	195	153	$225	$84
ROYSE CITY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	16	257	430	997	1,275	1,055	$506	$71
ROYSE CITY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	49	81	91	110	7	0	$153	N/A
ROYSE CITY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	464	N/A	$509
ROYSE CITY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	142	332	746	622	N/A	$1315
ROYSE CITY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	718	928	N/A	$955
ROYSE CITY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	4	7	12	28	34	30	$19	$0
ROYSE CITY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	606	N/A	$640
ROYSE CITY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	243	205	N/A	$640
RUNAWAY BAY	C	CONSERVATION - RUNAWAY BAY	DEMAND REDUCTION	5	9	13	17	22	28	$4220	$8444
RUNAWAY BAY	C	CONSERVATION, WATER LOSS CONTROL - RUNAWAY BAY	DEMAND REDUCTION	2	2	0	0	0	0	$547	N/A
RUNAWAY BAY	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	68	0	N/A	N/A
RUNAWAY BAY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	127	N/A	$1061
RUNAWAY BAY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	15	31	43	N/A	[illegible]
RUNAWAY BAY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	7	13	12	15	12	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
RUNAWAY BAY	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	4	4	6	16	N/A	$157
RUNAWAY BAY	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	17	37	65	55	53	N/A	$114
RUNAWAY BAY	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	17	36	18	25	N/A	$149
SACHSE	C	CONSERVATION - SACHSE	DEMAND REDUCTION	69	111	153	169	185	202	$67749	$67749
SACHSE	C	CONSERVATION, WATER LOSS CONTROL - SACHSE	DEMAND REDUCTION	26	26	0	0	0	0	$43252	N/A
SACHSE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	73	123	129	150	104	73	$225	$84
SACHSE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	55	698	774	935	680	503	$506	$71
SACHSE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	174	220	163	103	4	0	$153	N/A
SACHSE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	221	N/A	$509
SACHSE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	255	312	398	297	N/A	$1315
SACHSE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	384	443	N/A	$955
SACHSE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	12	21	21	26	20	13	$19	$0
SACHSE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	289	N/A	$640
SACHSE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	130	98	N/A	$640
SAGINAW	C	CONSERVATION - SAGINAW	DEMAND REDUCTION	10	23	39	54	68	81	$0	$0
SAGINAW	C	CONSERVATION, WATER LOSS CONTROL - SAGINAW	DEMAND REDUCTION	16	16	0	0	0	0	$83679	N/A
SAGINAW	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	363	469	387	286	194	N/A	$0
SAGINAW	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	503	0	N/A	N/A
SAGINAW	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	772	N/A	$1061
SAGINAW	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	130	225	262	N/A	$1061
SAGINAW	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	73	132	99	106	71	N/A	$157
SAGINAW	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	17	33	30	42	94	N/A	$157
SAGINAW	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	186	376	558	407	325	N/A	$114
SAGINAW	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	178	308	132	154	N/A	$149
SANGER	C	CONSERVATION - SANGER	DEMAND REDUCTION	4	10	18	28	42	61	$0	$0
SANGER	C	CONSERVATION, WATER LOSS CONTROL - SANGER	DEMAND REDUCTION	6	6	0	0	0	0	$2422	N/A
SANGER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	2	13	92	133	138	N/A	$221
SANGER	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	8	40	84	104	98	N/A	$515
SANGER	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	2	5	8	9	10	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
SANGER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	296	N/A	$837
SANGER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	45	100	N/A	$837
SANGER	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	14	25	28	63	N/A	$3
SANGER	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	7	13	15	35	N/A	$0
SANGER	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	55	167	302	481	385	N/A	$80
SANGER	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	16	73	136	160	182	N/A	$80
SANGER	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	52	N/A	$483
SANGER	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	46	44	N/A	$697
SANSOM PARK	C	CONSERVATION - SANSOM PARK	DEMAND REDUCTION	2	4	6	8	11	14	$0	$0
SANSOM PARK	C	CONSERVATION, WATER LOSS CONTROL - SANSOM PARK	DEMAND REDUCTION	3	3	0	0	0	0	$1216	N/A
SANSOM PARK	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	1	4	5	5	N/A	$0
SANSOM PARK	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	6	0	N/A	N/A
SANSOM PARK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	15	N/A	$1061
SANSOM PARK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	2	5	N/A	[illegible]
SANSOM PARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	0	1	1	N/A	$157
SANSOM PARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	0	3	N/A	$157
SANSOM PARK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	0	2	4	6	N/A	$114
SANSOM PARK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	0	2	3	N/A	$149
SARDIS-LONE ELM WSC	C	CONSERVATION - SARDIS-LONE ELM WSC	DEMAND REDUCTION	52	104	174	212	245	268	$38000	$63010
SARDIS-LONE ELM WSC	C	CONSERVATION, WATER LOSS CONTROL - SARDIS-LONE ELM WSC	DEMAND REDUCTION	20	20	0	0	0	0	$9335	N/A
SARDIS-LONE ELM WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	516	N/A	$1061
SARDIS-LONE ELM WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	516	N/A	$1061
SARDIS-LONE ELM WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	130	178	175	N/A	$1061
SARDIS-LONE ELM WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	130	178	175	N/A	$1061
SARDIS-LONE ELM WSC	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	685	298	205	99	85	47	$442	$157
SARDIS-LONE ELM WSC	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	436	68	53	30	33	63	$442	$157
SARDIS-LONE ELM WSC	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	755	586	558	322	217	N/A	$114
SARDIS-LONE ELM WSC	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1,348	2,250	2,480	2,005	2,247	N/A	[illegible]
SARDIS-LONE ELM WSC	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	277	308	105	103	N/A	$149
SARDIS-LONE ELM WSC	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	0	157	1,191	1,596	N/A	$149

Recommended Water User Group (WUG) Water Management Strategies (WMS)

Water Management Strategy Supplies

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
SARDIS-LONE ELM WSC	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	398	0	N/A	N/A
SAVOY	C	CONSERVATION - SAVOY	DEMAND REDUCTION	0	1	1	1	2	2	N/A	$0
SAVOY	C	CONSERVATION, WATER LOSS CONTROL - SAVOY	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
SAVOY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	31	43	47	54	63	N/A	$71
SCURRY	C	CONSERVATION - SCURRY	DEMAND REDUCTION	0	0	1	2	3	8	N/A	$0
SCURRY	C	CONSERVATION, WATER LOSS CONTROL - SCURRY	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
SCURRY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	2	2	5	4	6	$225	$84
SCURRY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	1	11	14	25	26	42	$506	$71
SCURRY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	3	3	3	3	0	0	$153	N/A
SCURRY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	19	N/A	$509
SCURRY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	5	8	16	25	N/A	$1315
SCURRY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	15	37	N/A	$955
SCURRY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	1	0	0	0	2	N/A	$0
SCURRY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	24	N/A	$640
SCURRY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	5	8	N/A	$640
SEAGOVILLE	C	CONSERVATION - SEAGOVILLE	DEMAND REDUCTION	7	16	28	42	60	71	$0	$0
SEAGOVILLE	C	CONSERVATION, WATER LOSS CONTROL - SEAGOVILLE	DEMAND REDUCTION	10	10	0	0	0	0	$6393	N/A
SEAGOVILLE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	149	131	203	498	650	743	$153	$221
SEAGOVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY HUBBARD LAKE/RESERVOIR	81	100	110	125	138	116	$0	$0
SEAGOVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	195	216	131	87	87	80	$0	$0
SEAGOVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	54	78	94	148	220	231	$0	$0
SEAGOVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | FORK LAKE/RESERVOIR	100	131	156	190	249	275	$0	$0
SEAGOVILLE	C	DWU UNALLOCATED SUPPLY UTILIZATION	D | TAWAKONI LAKE/RESERVOIR	236	255	365	463	549	547	$0	$0
SEAGOVILLE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	223	456	411	416	364	N/A	$515
SEAGOVILLE	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	192	N/A	$483
SEAGOVILLE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	183	162	N/A	$697
SEIS LAGOS UD	C	CONSERVATION - SEIS LAGOS UD	DEMAND REDUCTION	31	36	41	43	45	47	$6076	$6076
SEIS LAGOS UD	C	CONSERVATION, WATER LOSS CONTROL - SEIS LAGOS UD	DEMAND REDUCTION	3	3	0	0	0	0	$12601	N/A
SEIS LAGOS UD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	11	13	16	11	8	$225	$84

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
SEIS LAGOS UD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	2	66	77	96	71	53	$506	$71
SEIS LAGOS UD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	7	21	16	11	0	0	$153	N/A
SEIS LAGOS UD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	23	N/A	$509
SEIS LAGOS UD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	25	32	42	32	N/A	$1315
SEIS LAGOS UD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	40	47	N/A	$955
SEIS LAGOS UD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	3	3	2	1	1	$19	$0
SEIS LAGOS UD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	31	N/A	$640
SEIS LAGOS UD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	14	10	N/A	$640
SEVEN POINTS	C	CONSERVATION - SEVEN POINTS	DEMAND REDUCTION	5	9	14	20	26	32	$4647	$10579
SEVEN POINTS	C	CONSERVATION, WATER LOSS CONTROL - SEVEN POINTS	DEMAND REDUCTION	2	2	0	0	0	0	$715	N/A
SEVEN POINTS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	80	0	N/A	N/A
SEVEN POINTS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	147	N/A	$1061
SEVEN POINTS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	17	36	50	N/A	$1061
SEVEN POINTS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	38	61	66	78	145	199	$442	[illegible]
SEVEN POINTS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	4	4	7	19	N/A	$157
SEVEN POINTS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	17	40	74	66	62	N/A	$114
SEVEN POINTS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	19	40	21	29	N/A	$149
SHADY SHORES	C	CONSERVATION - SHADY SHORES	DEMAND REDUCTION	2	3	5	7	8	10	$0	$0
SHADY SHORES	C	CONSERVATION, WATER LOSS CONTROL - SHADY SHORES	DEMAND REDUCTION	2	2	0	0	0	0	$1168	N/A
SHADY SHORES	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	3	7	31	32	27	N/A	$221
SHADY SHORES	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	8	21	28	25	19	N/A	$515
SHADY SHORES	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	2	2	3	2	2	N/A	$0
SHADY SHORES	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	58	N/A	$837
SHADY SHORES	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	11	20	N/A	$837
SHADY SHORES	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	7	8	7	12	N/A	$3
SHADY SHORES	C	UTRWD - CONTRACT RENEWAL WITH COMMERCE FOR LAKE CHAPMAN WATER	D | SULPHUR INDIRECT REUSE	0	0	4	4	4	7	N/A	$0
SHADY SHORES	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | RALPH HALL LAKE/RESERVOIR	0	60	87	103	119	76	N/A	[illegible]
SHADY SHORES	C	UTRWD - RALPH HALL RESERVOIR AND REUSE	C | SULPHUR INDIRECT REUSE	0	18	38	46	39	35	N/A	[illegible]
SHADY SHORES	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	10	N/A	$483

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
SHADY SHORES	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	11	8	N/A	$697
SHERMAN	C	CONSERVATION - SHERMAN	DEMAND REDUCTION	140	236	358	458	651	992	$89320	$155000
SHERMAN	C	CONSERVATION, WATER LOSS CONTROL - SHERMAN	DEMAND REDUCTION	53	53	0	0	0	0	$86480	N/A
SHERMAN	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	97	713	1,844	4,728	10,826	N/A	$535
SOUTH GRAYSON WSC	C	CONSERVATION - SOUTH GRAYSON WSC	DEMAND REDUCTION	2	4	7	10	14	18	$0	$0
SOUTH GRAYSON WSC	C	CONSERVATION, WATER LOSS CONTROL - SOUTH GRAYSON WSC	DEMAND REDUCTION	3	3	0	0	0	0	$2716	N/A
SOUTH GRAYSON WSC	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	95	93	93	90	86	82	$840	$535
SOUTHLAKE	C	CONSERVATION - SOUTHLAKE	DEMAND REDUCTION	204	336	517	650	797	962	$88257	$144120
SOUTHLAKE	C	CONSERVATION, WATER LOSS CONTROL - SOUTHLAKE	DEMAND REDUCTION	58	58	0	0	0	0	$142090	N/A
SOUTHLAKE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	1,333	1,814	1,636	1,370	1,038	N/A	$0
SOUTHLAKE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	2,235	0	N/A	N/A
SOUTHLAKE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,882	N/A	$1061
SOUTHLAKE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1,984	1,001	1,315	N/A	$1061
SOUTHLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	203	443	382	474	355	N/A	$157
SOUTHLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	46	114	115	188	476	N/A	$157
SOUTHLAKE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	514	1,264	1,248	1,815	1,634	N/A	$114
SOUTHLAKE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	597	590	588	772	N/A	$149
SOUTHMAYD	C	CONSERVATION - SOUTHMAYD	DEMAND REDUCTION	0	1	1	2	3	5	N/A	$0
SOUTHMAYD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHMAYD	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
SOUTHMAYD	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	49	48	72	95	N/A	$535
SOUTHMAYD	C	SOUTHMAYD NEW WELL IN WOODBINE	C | WOODBINE AQUIFER | GRAYSON COUNTY	0	0	0	0	0	77	N/A	$1530
SOUTHWEST FANNIN COUNTY SUD	C	CONSERVATION - SOUTHWEST FANNIN COUNTY SUD	DEMAND REDUCTION	2	4	8	12	19	28	$0	$0
SOUTHWEST FANNIN COUNTY SUD	C	CONSERVATION, WATER LOSS CONTROL - SOUTHWEST FANNIN COUNTY SUD	DEMAND REDUCTION	3	3	0	0	0	0	$12552	N/A
SOUTHWEST FANNIN COUNTY SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	336	434	545	778	1,045	N/A	$71
SOUTHWEST FANNIN COUNTY SUD	C	SOUTHWEST FANNIN CO SUD ADDITIONAL GROUNDWATER (WITH TRANSMISSION FACILITIES)	C | WOODBINE AQUIFER | GRAYSON COUNTY	0	100	100	100	100	100	N/A	$259
SPRINGTOWN	C	CONSERVATION - SPRINGTOWN	DEMAND REDUCTION	2	5	7	10	12	15	$0	$0
SPRINGTOWN	C	CONSERVATION, WATER LOSS CONTROL - SPRINGTOWN	DEMAND REDUCTION	3	3	0	0	0	0	$1018	N/A
SPRINGTOWN	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	79	0	N/A	N/A
SPRINGTOWN	C	SPRINGTOWN NEW WELLS IN TRINITY AQUIFER	C | TRINITY AQUIFER | PARKER COUNTY	70	70	70	70	70	70	$1566	$366

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
SPRINGTOWN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	109	N/A	$1061
SPRINGTOWN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	27	37	37	N/A	$1061
SPRINGTOWN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	41	65	43	20	18	10	$442	$157
SPRINGTOWN	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	26	15	11	7	6	13	$442	$157
SPRINGTOWN	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	164	124	114	66	46	N/A	$114
SPRINGTOWN	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	59	62	21	22	N/A	$149
ST. PAUL	C	CONSERVATION - ST PAUL	DEMAND REDUCTION	1	2	3	4	6	7	$0	$0
ST. PAUL	C	CONSERVATION, WATER LOSS CONTROL - ST. PAUL	DEMAND REDUCTION	1	1	0	0	0	0	$575	N/A
ST. PAUL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	8	9	11	8	5	$225	$84
ST. PAUL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	3	44	53	66	49	36	$506	$71
ST. PAUL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	10	14	11	7	0	0	$153	N/A
ST. PAUL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	16	N/A	$509
ST. PAUL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	17	22	28	21	N/A	$1315
ST. PAUL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	28	32	N/A	$955
ST. PAUL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	1	1	2	2	3	2	$19	$0
ST. PAUL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	21	N/A	$640
ST. PAUL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	9	7	N/A	$640
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	13	16	21	19	18	11	$225	$84
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	10	92	125	133	145	99	$506	$71
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	31	29	26	3	1	0	$153	N/A
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	35	N/A	$509
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	41	41	39	26	N/A	$947
STEAM ELECTRIC POWER, COLLIN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	66	70	N/A	$955
STEAM ELECTRIC POWER, COLLIN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	2	4	4	3	3	4	$19	$0
STEAM ELECTRIC POWER, COLLIN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	46	N/A	$1061
STEAM ELECTRIC POWER, COLLIN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	22	15	N/A	[illegible]
STEAM ELECTRIC POWER, DALLAS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	232	159	272	748	780	757	$153	$221
STEAM ELECTRIC POWER, DALLAS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	505	856	682	612	539	N/A	$515

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
STEAM ELECTRIC POWER, DALLAS	C	TRINITY RIVER AUTHORITY DALLAS COUNTY REUSE (SEP)	C | TRINITY INDIRECT REUSE	0	2,000	2,000	2,000	2,000	2,000	N/A	$228
STEAM ELECTRIC POWER, DALLAS	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	284	N/A	$483
STEAM ELECTRIC POWER, DALLAS	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	269	240	N/A	$697
STEAM ELECTRIC POWER, ELLIS	C	DREDGE LAKE WAXAHACHIE	C | WAXAHACHIE LAKE/RESERVOIR	0	0	96	705	534	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	26	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,000	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	MIDLOTHIAN UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	5	38	54	58	58	54	$0	$0
STEAM ELECTRIC POWER, ELLIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	39	N/A	$1061
STEAM ELECTRIC POWER, ELLIS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,594	N/A	$1061
STEAM ELECTRIC POWER, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	33	67	363	N/A	$1061
STEAM ELECTRIC POWER, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	6	11	13	N/A	$1061
STEAM ELECTRIC POWER, ELLIS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	400	1,000	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	TRINITY RIVER AUTHORITY ELLIS COUNTY REUSE (SEP)	C | DIRECT REUSE	0	0	0	0	2,200	4,700	N/A	$557
STEAM ELECTRIC POWER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	3	6	5	5	4	N/A	$157
STEAM ELECTRIC POWER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	553	633	323	317	N/A	$157
STEAM ELECTRIC POWER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	2	1	2	5	N/A	$157
STEAM ELECTRIC POWER, ELLIS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	61	81	186	425	N/A	$157
STEAM ELECTRIC POWER, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	27	0	0	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	8	17	26	20	16	N/A	$114
STEAM ELECTRIC POWER, ELLIS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	256	1,222	961	1,459	N/A	$114
STEAM ELECTRIC POWER, ELLIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	62	126	211	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	8	14	6	8	N/A	$149
STEAM ELECTRIC POWER, ELLIS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	121	245	385	689	N/A	$149
STEAM ELECTRIC POWER, ELLIS	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | BARDWELL LAKE/RESERVOIR	0	0	393	438	331	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	455	593	471	0	N/A	N/A
STEAM ELECTRIC POWER, ELLIS	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | WAXAHACHIE LAKE/RESERVOIR	0	0	181	211	0	0	N/A	N/A
STEAM ELECTRIC POWER, FANNIN	C	FANNIN COUNTY SEP - CONNECT TO AND PURCHASE WATER FROM LAKE TEXOMA	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	9,000	9,000	9,000	9,000	9,000	N/A	$53
STEAM ELECTRIC POWER, FREESTONE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	874	0	N/A	N/A
STEAM ELECTRIC POWER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,953	N/A	$1061
STEAM ELECTRIC POWER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,344	N/A	$1061
STEAM ELECTRIC POWER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	226	391	1,299	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
STEAM ELECTRIC POWER, FREESTONE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	226	391	455	N/A	$1061
STEAM ELECTRIC POWER, FREESTONE	C	TRINITY RIVER AUTHORITY FREESTONE CO. REUSE (SEP)	C | TRINITY INDIRECT REUSE	0	0	0	6,760	6,760	6,760	N/A	$235
STEAM ELECTRIC POWER, FREESTONE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	161	241	172	185	601	N/A	$157
STEAM ELECTRIC POWER, FREESTONE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	36	61	51	73	802	N/A	$157
STEAM ELECTRIC POWER, FREESTONE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	407	688	967	709	2,762	N/A	$114
STEAM ELECTRIC POWER, FREESTONE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	325	536	230	1,305	N/A	$149
STEAM ELECTRIC POWER, GRAYSON	C	TEXOMA RAW WATER TO GRAYSON CO. SEP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	6,548	6,548	6,548	6,548	6,548	N/A	$78
STEAM ELECTRIC POWER, HENDERSON	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	903	0	N/A	N/A
STEAM ELECTRIC POWER, HENDERSON	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,589	N/A	$1061
STEAM ELECTRIC POWER, HENDERSON	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	200	404	538	N/A	$1061
STEAM ELECTRIC POWER, HENDERSON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	107	3,790	3,243	1,052	1,153	N/A	$157
STEAM ELECTRIC POWER, HENDERSON	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	25	46	47	77	194	N/A	$157
STEAM ELECTRIC POWER, HENDERSON	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	272	506	855	732	669	N/A	[illegible]
STEAM ELECTRIC POWER, HENDERSON	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	239	473	237	316	N/A	$149
STEAM ELECTRIC POWER, HENDERSON	C	TRWD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	4,500	4,096	369	1,143	3,545	3,491	$275	$65
STEAM ELECTRIC POWER, JACK	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	457	0	N/A	N/A
STEAM ELECTRIC POWER, JACK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	748	N/A	$1061
STEAM ELECTRIC POWER, JACK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	111	205	254	N/A	$1061
STEAM ELECTRIC POWER, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	69	111	84	98	68	N/A	$157
STEAM ELECTRIC POWER, JACK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	16	29	27	38	92	N/A	$157
STEAM ELECTRIC POWER, JACK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	174	316	475	370	315	N/A	$114
STEAM ELECTRIC POWER, JACK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	149	262	120	149	N/A	$149
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	20	30	32	37	26	18	$225	$84
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	15	172	190	230	167	123	$506	$71
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	49	54	40	25	1	0	$153	N/A
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	54	N/A	$509
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	62	77	98	73	N/A	[illegible]
STEAM ELECTRIC POWER, KAUFMAN	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	94	108	N/A	$955

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
STEAM ELECTRIC POWER, KAUFMAN	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	4	6	5	6	4	3	$19	$0
STEAM ELECTRIC POWER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	71	N/A	$640
STEAM ELECTRIC POWER, KAUFMAN	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	32	24	N/A	$640
STEAM ELECTRIC POWER, KAUFMAN	C	TRINITY RIVER AUTHORITY KAUFMAN CO. REUSE (SEP)	C | TRINITY INDIRECT REUSE	1,000	1,000	1,000	1,000	1,000	1,000	$935	$283
STEAM ELECTRIC POWER, NAVARRO	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | NAVARRO MILLS LAKE/RESERVOIR	0	4,533	4,533	4,533	4,533	3,115	N/A	$72
STEAM ELECTRIC POWER, NAVARRO	C	CORSICANA UNALLOCATED SUPPLY UTILIZATION	C | RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	0	907	907	907	907	2,325	N/A	$72
STEAM ELECTRIC POWER, NAVARRO	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	3,683	N/A	$1061
STEAM ELECTRIC POWER, NAVARRO	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	3,675	3,535	1,248	N/A	$1061
STEAM ELECTRIC POWER, NAVARRO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	4,889	2,125	1,465	707	1,176	337	$442	$157
STEAM ELECTRIC POWER, NAVARRO	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	3,111	489	376	214	238	451	$442	$157
STEAM ELECTRIC POWER, NAVARRO	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	5,386	4,183	2,312	2,305	1,550	N/A	$114
STEAM ELECTRIC POWER, NAVARRO	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1,976	1,092	746	732	N/A	$149
STEAM ELECTRIC POWER, PARKER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	34	0	N/A	N/A
STEAM ELECTRIC POWER, PARKER	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	52	N/A	$1061
STEAM ELECTRIC POWER, PARKER	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	9	15	18	N/A	$1061
STEAM ELECTRIC POWER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	6	9	7	7	5	N/A	$157
STEAM ELECTRIC POWER, PARKER	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	2	1	2	6	N/A	$157
STEAM ELECTRIC POWER, PARKER	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	16	27	38	28	22	N/A	$114
STEAM ELECTRIC POWER, PARKER	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	13	20	9	10	N/A	$149
STEAM ELECTRIC POWER, TARRANT	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	318	0	N/A	N/A
STEAM ELECTRIC POWER, TARRANT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	489	N/A	$1061
STEAM ELECTRIC POWER, TARRANT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	82	142	166	N/A	$1061
STEAM ELECTRIC POWER, TARRANT	C	TARRANT COUNTY SEP DIRECT REUSE	C | DIRECT REUSE	0	1,528	2,360	2,360	2,360	2,360	N/A	$94
STEAM ELECTRIC POWER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	58	88	63	67	45	N/A	$157
STEAM ELECTRIC POWER, TARRANT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	14	23	18	26	60	N/A	$157
STEAM ELECTRIC POWER, TARRANT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	148	250	353	258	206	N/A	$114
STEAM ELECTRIC POWER, TARRANT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	118	195	84	97	N/A	$149
STEAM ELECTRIC POWER, WISE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	429	0	N/A	N/A
STEAM ELECTRIC POWER, WISE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	734	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies							
				2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
STEAM ELECTRIC POWER, WISE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	82	192	249	N/A	$1061
STEAM ELECTRIC POWER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	35	81	63	90	67	N/A	$157
STEAM ELECTRIC POWER, WISE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	8	21	19	36	90	N/A	$157
STEAM ELECTRIC POWER, WISE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	88	230	353	347	309	N/A	$114
STEAM ELECTRIC POWER, WISE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	109	195	113	146	N/A	$149
SUNNYVALE	C	CONSERVATION - SUNNYVALE	DEMAND REDUCTION	32	72	129	165	218	238	$19333	$46167
SUNNYVALE	C	CONSERVATION, WATER LOSS CONTROL - SUNNYVALE	DEMAND REDUCTION	12	12	0	0	0	0	$699	N/A
SUNNYVALE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	33	80	109	147	123	86	$225	$84
SUNNYVALE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	25	457	656	916	801	591	$506	$71
SUNNYVALE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	79	144	138	101	5	0	$153	N/A
SUNNYVALE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	260	N/A	$509
SUNNYVALE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	216	305	468	349	N/A	$1315
SUNNYVALE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	451	521	N/A	[illegible]
SUNNYVALE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	14	19	26	22	17	$19	$0
SUNNYVALE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	340	N/A	$640
SUNNYVALE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	153	115	N/A	$640
TALTY	C	CONSERVATION - TALTY	DEMAND REDUCTION	1	3	5	7	13	26	$0	$0
TALTY	C	CONSERVATION, WATER LOSS CONTROL - TALTY	DEMAND REDUCTION	2	2	0	0	0	0	$14183	N/A
TALTY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	10	13	18	16	20	$225	$84
TALTY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	4	55	75	110	110	135	$506	$71
TALTY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	12	17	16	12	1	0	$153	N/A
TALTY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	59	N/A	$509
TALTY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	25	37	65	80	N/A	$1315
TALTY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	62	118	N/A	$955
TALTY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	2	2	3	3	3	N/A	$0
TALTY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	78	N/A	[illegible]
TALTY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	21	26	N/A	$837
TALTY WSC	C	CONSERVATION - TALTY WSC	DEMAND REDUCTION	21	39	63	97	136	192	$26583	$70000

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
TALTY WSC	C	CONSERVATION, WATER LOSS CONTROL - TALTY WSC	DEMAND REDUCTION	8	8	0	0	0	0	$258	N/A
TALTY WSC	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	23	44	53	86	76	70	$225	$84
TALTY WSC	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	200	439	533	786	818	976	$506	$71
TALTY WSC	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	55	77	67	59	3	0	$153	N/A
TALTY WSC	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	210	N/A	$509
TALTY WSC	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	104	179	290	282	N/A	$1315
TALTY WSC	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	280	421	N/A	$955
TALTY WSC	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	4	7	9	15	14	11	$19	$0
TALTY WSC	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	275	N/A	$640
TALTY WSC	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	95	93	N/A	$640
TEAGUE	C	CONSERVATION - TEAGUE	DEMAND REDUCTION	1	3	5	8	13	18	$0	$0
TEAGUE	C	CONSERVATION, WATER LOSS CONTROL - TEAGUE	DEMAND REDUCTION	2	2	0	0	0	0	$13233	N/A
TEAGUE	C	TEAGUE NEW WELLS IN CARRIZO-WILCOX AQUIFER	C | CARRIZO-WILCOX AQUIFER | FREESTONE COUNTY	0	0	0	200	200	200	N/A	$765
TERRELL	C	CONSERVATION - TERRELL	DEMAND REDUCTION	53	155	259	355	453	574	$59628	$138473
TERRELL	C	CONSERVATION, WATER LOSS CONTROL - TERRELL	DEMAND REDUCTION	20	20	0	0	0	0	$590	N/A
TERRELL	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	57	173	219	327	271	224	$225	$84
TERRELL	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	64	983	1,337	2,046	1,774	1,541	$506	$71
TERRELL	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	135	310	277	225	10	0	$153	N/A
TERRELL	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	678	N/A	$509
TERRELL	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	432	662	997	877	N/A	$1315
TERRELL	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	961	1,309	N/A	$955
TERRELL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	186	454	681	851	N/A	$0
TERRELL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	153	379	569	722	N/A	$0
TERRELL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	301	856	1,364	1,785	N/A	$0
TERRELL	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	88	218	325	410	N/A	$0
TERRELL	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	8	29	37	58	52	43	$19	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
TERRELL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	855	N/A	$640
TERRELL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	326	289	N/A	$640
THE COLONY	C	CONSERVATION - THE COLONY	DEMAND REDUCTION	26	58	91	131	164	197	$0	$0
THE COLONY	C	CONSERVATION, WATER LOSS CONTROL - THE COLONY	DEMAND REDUCTION	39	39	0	0	0	0	$11059	N/A
THE COLONY	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	190	152	288	867	869	809	$153	$221
THE COLONY	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	485	906	792	683	577	N/A	$515
THE COLONY	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	19	52	60	75	56	42	$225	$84
THE COLONY	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	14	292	357	469	367	290	$506	$71
THE COLONY	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	46	92	75	52	2	0	$153	N/A
THE COLONY	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	128	N/A	$509
THE COLONY	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	118	156	214	171	N/A	$1315
THE COLONY	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	207	255	N/A	$955
THE COLONY	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	3	8	10	13	12	9	$19	$0
THE COLONY	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	167	N/A	$640
THE COLONY	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	70	56	N/A	$640
THE COLONY	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	304	N/A	$483
THE COLONY	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	301	257	N/A	$697
TIOGA	C	CONSERVATION - TIOGA	DEMAND REDUCTION	0	1	1	2	7	12	N/A	$0
TIOGA	C	CONSERVATION, WATER LOSS CONTROL - TIOGA	DEMAND REDUCTION	1	1	0	0	0	0	$26591	N/A
TIOGA	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	4	11	18	318	477	N/A	$535
TOM BEAN	C	CONSERVATION - TOM BEAN	DEMAND REDUCTION	1	4	7	10	13	22	$0	$8444
TOM BEAN	C	CONSERVATION, WATER LOSS CONTROL - TOM BEAN	DEMAND REDUCTION	1	19	57	64	77	115	$705	$0
TOM BEAN	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	14	35	58	109	274	N/A	$535
TOOL	C	CONSERVATION - TOOL	DEMAND REDUCTION	8	13	18	22	36	52	$6915	$16611
TOOL	C	CONSERVATION, WATER LOSS CONTROL - TOOL	DEMAND REDUCTION	3	3	0	0	0	0	$175	N/A
TOOL	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	114	0	N/A	N/A
TOOL	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	236	N/A	$1061
TOOL	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	19	51	80	N/A	$1061
TOOL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	59	87	86	84	205	324	$442	$157
TOOL	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	5	4	9	28	N/A	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
TOOL	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	25	53	83	92	99	N/A	$114
TOOL	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	25	44	30	47	N/A	$149
TRENTON	C	CONSERVATION - TRENTON	DEMAND REDUCTION	0	3	15	35	51	70	N/A	$27500
TRENTON	C	CONSERVATION, WATER LOSS CONTROL - TRENTON	DEMAND REDUCTION	1	1	0	0	0	0	$1144	N/A
TRENTON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	89	508	920	1,250	1,578	N/A	$71
TRENTON	C	TRENTON NEW WELLS IN WOODBINE AQUIFER	C | WOODBINE AQUIFER | FANNIN COUNTY	0	25	25	25	25	25	N/A	$908
TRINIDAD	C	CONSERVATION - TRINIDAD	DEMAND REDUCTION	0	1	1	1	2	2	N/A	$0
TRINIDAD	C	CONSERVATION, WATER LOSS CONTROL - TRINIDAD	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
TROPHY CLUB	C	CONSERVATION - TROPHY CLUB	DEMAND REDUCTION	202	252	303	322	342	362	$38544	$38544
TROPHY CLUB	C	CONSERVATION, WATER LOSS CONTROL - TROPHY CLUB	DEMAND REDUCTION	31	31	0	0	0	0	$352	N/A
TROPHY CLUB	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	631	735	577	429	291	N/A	$0
TROPHY CLUB	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	666	0	N/A	N/A
TROPHY CLUB	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	1,044	N/A	$1061
TROPHY CLUB	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	166	298	354	N/A	$1061
TROPHY CLUB	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	70	162	127	141	96	N/A	$157
TROPHY CLUB	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	17	42	38	55	127	N/A	$157
TROPHY CLUB	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	178	463	713	541	440	N/A	$114
TROPHY CLUB	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	219	393	175	208	N/A	$149
TWO WAY SUD	C	CONSERVATION - TWO WAY SUD	DEMAND REDUCTION	2	6	11	17	28	42	$0	$0
TWO WAY SUD	C	CONSERVATION, WATER LOSS CONTROL - TWO WAY SUD	DEMAND REDUCTION	4	4	0	0	0	0	$28330	N/A
TWO WAY SUD	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	165	339	541	936	1,338	N/A	$535
UNIVERSITY PARK	C	CONSERVATION - UNIVERSITY PARK	DEMAND REDUCTION	25	50	74	98	123	147	$0	$0
UNIVERSITY PARK	C	CONSERVATION, WATER LOSS CONTROL - UNIVERSITY PARK	DEMAND REDUCTION	38	38	0	0	0	0	$2884	N/A
UPPER TRINITY REGIONAL WD - WATER LOSS	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	C | RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	1,453	1,687	1,650	1,608	1,571	1,526	$0	$0
UPPER TRINITY REGIONAL WD - WATER LOSS	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NON-SYSTEM PORTION	491	522	0	0	0	0	$0	N/A
UPPER TRINITY REGIONAL WD - WATER LOSS	C	UTRWD UNALLOCATED SUPPLY UTILIZATION	D | SULPHUR INDIRECT REUSE	216	237	0	0	0	0	$0	N/A
VALLEY VIEW	C	CONSERVATION - VALLEY VIEW	DEMAND REDUCTION	0	0	1	1	1	1	N/A	$0
VALLEY VIEW	C	CONSERVATION, WATER LOSS CONTROL - VALLEY VIEW	DEMAND REDUCTION	0	0	0	0	0	0	N/A	N/A
VALLEY VIEW	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	4	6	9	11	14	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

Water Management Strategy Supplies

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
VAN ALSTYNE	C	CONSERVATION - VAN ALSTYNE	DEMAND REDUCTION	2	4	7	11	39	65	$0	$0
VAN ALSTYNE	C	CONSERVATION, WATER LOSS CONTROL - VAN ALSTYNE	DEMAND REDUCTION	3	3	0	0	0	0	$63	N/A
VAN ALSTYNE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	2	5	8	39	44	N/A	$84
VAN ALSTYNE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	9	27	53	256	303	N/A	$71
VAN ALSTYNE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	0	3	6	6	1	0	N/A	N/A
VAN ALSTYNE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	134	N/A	$509
VAN ALSTYNE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	9	18	149	173	N/A	$1315
VAN ALSTYNE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	144	258	N/A	$955
VAN ALSTYNE	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	53	N/A	$0
VAN ALSTYNE	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	46	N/A	$0
VAN ALSTYNE	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	0	0	0	114	N/A	$0
VAN ALSTYNE	C	NTMWD UNALLOCATED SUPPLY UTILIZATION	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	0	0	26	N/A	[illegible]
VAN ALSTYNE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	0	2	8	9	N/A	$0
VAN ALSTYNE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	169	N/A	$640
VAN ALSTYNE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	49	57	N/A	$640
VIRGINIA HILL WSC	C	CONSERVATION - VIRGINIA HILL WSC	DEMAND REDUCTION	1	2	3	4	6	8	$0	$0
VIRGINIA HILL WSC	C	CONSERVATION, WATER LOSS CONTROL - VIRGINIA HILL WSC	DEMAND REDUCTION	1	1	0	0	0	0	$62	N/A
WALNUT CREEK SUD	C	CONSERVATION - WALNUT CREEK SUD	DEMAND REDUCTION	6	14	24	40	75	117	$0	$0
WALNUT CREEK SUD	C	CONSERVATION, WATER LOSS CONTROL - WALNUT CREEK SUD	DEMAND REDUCTION	9	9	0	0	0	0	$372	N/A
WALNUT CREEK SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	16	19	26	54	181	N/A	$157
WATAUGA	C	CONSERVATION - WATAUGA	DEMAND REDUCTION	10	19	27	35	44	53	$0	$0
WATAUGA	C	CONSERVATION, WATER LOSS CONTROL - WATAUGA	DEMAND REDUCTION	14	14	0	0	0	0	$6343	N/A
WATAUGA	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	941	901	685	469	261	128	$0	$0
WATAUGA	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	328	0	N/A	N/A
WATAUGA	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	505	N/A	[illegible]
WATAUGA	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	85	147	171	N/A	$1061
WATAUGA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	980	959	844	539	70	174	$442	$157

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WATAUGA	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	13	23	20	28	62	N/A	$157
WATAUGA	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	147	263	365	267	213	N/A	$114
WATAUGA	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	191	201	91	100	N/A	$149
WAXAHACHIE	C	CONSERVATION - WAXAHACHIE	DEMAND REDUCTION	92	168	279	377	504	668	$81550	$145500
WAXAHACHIE	C	CONSERVATION, IRRIGATION RESTRICTIONS – WAXAHACHIE	DEMAND REDUCTION	4	9	12	16	20	26	$14552	$35021
WAXAHACHIE	C	CONSERVATION, WATER LOSS CONTROL - WAXAHACHIE	DEMAND REDUCTION	34	34	0	0	0	0	$33191	N/A
WAXAHACHIE	C	DREDGE LAKE WAXAHACHIE	C | WAXAHACHIE LAKE/RESERVOIR	0	0	609	0	0	142	N/A	$0
WAXAHACHIE	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	152	0	N/A	N/A
WAXAHACHIE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	2,329	N/A	$1061
WAXAHACHIE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	352	995	1,660	N/A	$1061
WAXAHACHIE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	0	0	58	N/A	$157
WAXAHACHIE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	0	0	0	148	131	N/A	$157
WAXAHACHIE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	0	175	N/A	$157
WAXAHACHIE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	442	284	842	604	N/A	$114
WAXAHACHIE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	209	584	199	285	N/A	$149
WAXAHACHIE	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | BARDWELL LAKE/RESERVOIR	0	0	0	0	0	288	N/A	$0
WAXAHACHIE	C	WAXAHACHIE UNALLOCATED SUPPLY UTILIZATION	C | TRINITY INDIRECT REUSE	0	0	0	0	0	413	N/A	$0
WAXAHACHIE	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	756	0	N/A	N/A
WEATHERFORD	C	CONSERVATION – WASTE PROHIBITION, WEATHERFORD	DEMAND REDUCTION	19	49	62	114	192	289	$11689	$58937
WEATHERFORD	C	CONSERVATION - WEATHERFORD	DEMAND REDUCTION	71	134	218	392	667	1,078	$70276	$210720
WEATHERFORD	C	CONSERVATION, WATER LOSS CONTROL - WEATHERFORD	DEMAND REDUCTION	52	116	1,005	170	266	389	$124792	$0
WEATHERFORD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	1,594	0	N/A	N/A
WEATHERFORD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	5,710	N/A	$1061
WEATHERFORD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	148	714	1,934	N/A	$1061
WEATHERFORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	328	301	8	246	338	522	$442	$157
WEATHERFORD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	2	34	134	698	N/A	$157
WEATHERFORD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	0	23	633	1,294	2,404	N/A	$114
WEATHERFORD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	11	350	419	1,136	N/A	$149
WEATHERFORD	C	WEATHERFORD INDIRECT REUSE - LAKE WEATHERFORD/SUNSHINE	C | TRINITY INDIRECT REUSE	2,240	2,240	2,240	2,240	2,240	2,240	$580	$91
WEATHERFORD	C	WEATHERFORD UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	804	4,023	3,718	N/A	$0

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WEST CEDAR CREEK MUD	C	CONSERVATION - WEST CEDAR CREEK MUD	DEMAND REDUCTION	4	10	17	25	40	67	$0	$0
WEST CEDAR CREEK MUD	C	CONSERVATION, WATER LOSS CONTROL - WEST CEDAR CREEK MUD	DEMAND REDUCTION	7	7	0	0	0	0	$389133	N/A
WEST CEDAR CREEK MUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	300	0	N/A	N/A
WEST CEDAR CREEK MUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	641	N/A	$1061
WEST CEDAR CREEK MUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	61	134	217	N/A	$1061
WEST CEDAR CREEK MUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	177	251	266	268	529	859	$442	$157
WEST CEDAR CREEK MUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	7	15	14	25	79	N/A	$157
WEST CEDAR CREEK MUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	79	163	260	244	270	N/A	$114
WEST CEDAR CREEK MUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	77	145	79	127	N/A	$149
WEST WISE SUD	C	CONSERVATION - WEST WISE SUD	DEMAND REDUCTION	1	3	4	6	7	9	$0	$0
WEST WISE SUD	C	CONSERVATION, WATER LOSS CONTROL - WEST WISE SUD	DEMAND REDUCTION	2	2	0	0	0	0	$4560	N/A
WEST WISE SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	53	0	N/A	N/A
WEST WISE SUD	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	0	0	0	0	3	0	N/A	N/A
WEST WISE SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	84	N/A	[illegible]
WEST WISE SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	6	N/A	$1061
WEST WISE SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	13	25	28	N/A	$1061
WEST WISE SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	1	2	2	N/A	$1061
WEST WISE SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	8	14	10	12	8	N/A	$157
WEST WISE SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	1	1	1	0	1	N/A	$157
WEST WISE SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	2	3	3	4	10	N/A	$157
WEST WISE SUD	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	0	0	0	1	N/A	$157
WEST WISE SUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	21	39	57	42	35	N/A	$114
WEST WISE SUD	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	1	2	3	3	3	N/A	$114
WEST WISE SUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	19	30	14	17	N/A	$149
WEST WISE SUD	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	1	1	1	1	N/A	$149
WESTLAKE	C	CONSERVATION - WESTLAKE	DEMAND REDUCTION	19	45	90	121	156	194	$3544	$11741
WESTLAKE	C	CONSERVATION, WATER LOSS CONTROL - WESTLAKE	DEMAND REDUCTION	7	7	0	0	0	0	$1935	N/A
WESTLAKE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	215	364	345	299	232	N/A	[illegible]
WESTLAKE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	495	0	N/A	N/A
WESTLAKE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	880	N/A	$1061

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WESTLAKE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	108	223	298	N/A	$1061
WESTLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	36	91	82	105	80	N/A	$157
WESTLAKE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	8	24	24	42	109	N/A	$157
WESTLAKE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	91	260	461	403	370	N/A	$114
WESTLAKE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	123	256	130	175	N/A	$149
WESTON	C	CONSERVATION - WESTON	DEMAND REDUCTION	2	7	48	157	312	374	$0	$0
WESTON	C	CONSERVATION, WATER LOSS CONTROL - WESTON	DEMAND REDUCTION	3	3	0	0	0	0	$3402	N/A
WESTON	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	0	829	4,600	11,501	18,301	18,237	N/A	$71
WESTON	C	WESTON - NEW WELLS IN WOODBINE AQUIFER	C | WOODBINE AQUIFER | COLLIN COUNTY	71	71	71	71	71	71	$1348	$376
WESTOVER HILLS	C	CONSERVATION – WASTE PROHIBITION, WESTOVER HILLS	DEMAND REDUCTION	7	15	15	16	16	16	$870	$287
WESTOVER HILLS	C	CONSERVATION - WESTOVER HILLS	DEMAND REDUCTION	13	21	30	34	38	42	$2094	$2346
WESTOVER HILLS	C	CONSERVATION, WATER LOSS CONTROL - WESTOVER HILLS	DEMAND REDUCTION	19	49	45	46	47	48	$3259	$0
WESTOVER HILLS	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	101	120	96	73	51	N/A	$0
WESTOVER HILLS	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	99	0	N/A	N/A
WESTOVER HILLS	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	162	N/A	$1061
WESTOVER HILLS	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	23	44	55	N/A	$1061
WESTOVER HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	1	19	17	20	15	N/A	$157
WESTOVER HILLS	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	0	5	6	8	20	N/A	$157
WESTOVER HILLS	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	2	54	98	80	68	N/A	$114
WESTOVER HILLS	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	26	54	27	33	N/A	$149
WESTWORTH VILLAGE	C	CONSERVATION - WESTWORTH VILLAGE	DEMAND REDUCTION	1	3	4	6	8	11	$0	$0
WESTWORTH VILLAGE	C	CONSERVATION, WATER LOSS CONTROL - WESTWORTH VILLAGE	DEMAND REDUCTION	2	2	0	0	0	0	$34055	N/A
WESTWORTH VILLAGE	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	44	54	45	35	26	N/A	$0
WESTWORTH VILLAGE	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	62	0	N/A	N/A
WESTWORTH VILLAGE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	101	N/A	$1061
WESTWORTH VILLAGE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	15	28	34	N/A	$1061
WESTWORTH VILLAGE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	9	15	11	13	9	N/A	$157
WESTWORTH VILLAGE	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	1	4	4	6	13	N/A	$157
WESTWORTH VILLAGE	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	22	43	64	50	42	N/A	$114

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WESTWORTH VILLAGE	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	20	36	16	20	N/A	$149
WHITE SETTLEMENT	C	CONSERVATION - WHITE SETTLEMENT	DEMAND REDUCTION	7	14	21	33	52	76	$0	$0
WHITE SETTLEMENT	C	CONSERVATION, WATER LOSS CONTROL - WHITE SETTLEMENT	DEMAND REDUCTION	10	10	0	0	0	0	$939	N/A
WHITE SETTLEMENT	C	FORT WORTH UNALLOCATED SUPPLY UTILIZATION	C | TRWD LAKE/RESERVOIR SYSTEM	0	111	134	137	148	133	N/A	$0
WHITE SETTLEMENT	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	0	0	0	253	0	N/A	N/A
WHITE SETTLEMENT	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	516	N/A	$1061
WHITE SETTLEMENT	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	44	113	175	N/A	$1061
WHITE SETTLEMENT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	19	36	34	54	47	N/A	$157
WHITE SETTLEMENT	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	5	9	10	21	63	N/A	$157
WHITE SETTLEMENT	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	48	102	189	206	217	N/A	$114
WHITE SETTLEMENT	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	48	105	67	103	N/A	$149
WHITESBORO	C	CONSERVATION - WHITESBORO	DEMAND REDUCTION	2	3	5	6	9	15	$0	$0
WHITESBORO	C	CONSERVATION, WATER LOSS CONTROL - WHITESBORO	DEMAND REDUCTION	2	2	0	0	0	0	$5406	N/A
WHITESBORO	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	0	4	164	N/A	[illegible]
WHITEWRIGHT	C	CONSERVATION - WHITEWRIGHT	DEMAND REDUCTION	1	1	2	3	4	5	$0	$0
WHITEWRIGHT	C	CONSERVATION, WATER LOSS CONTROL - WHITEWRIGHT	DEMAND REDUCTION	1	1	0	0	0	0	$1028	N/A
WHITEWRIGHT	C	GTUA - GRAYSON COUNTY WSP	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	48	47	96	95	N/A	$535
WILLOW PARK	C	CONSERVATION - WILLOW PARK	DEMAND REDUCTION	3	6	11	20	32	47	$0	$0
WILLOW PARK	C	CONSERVATION, WATER LOSS CONTROL - WILLOW PARK	DEMAND REDUCTION	4	4	0	0	0	0	$954	N/A
WILLOW PARK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	719	N/A	$1061
WILLOW PARK	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	719	N/A	$1061
WILLOW PARK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	82	180	244	N/A	$1061
WILLOW PARK	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	82	180	244	N/A	$1061
WILLOW PARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRINITY INDIRECT REUSE	0	36	56	62	86	66	N/A	$157
WILLOW PARK	C	TRWD - ADDITIONAL CEDAR CREEK AND RICHLAND-CHAMBERS	C | TRWD LAKE/RESERVOIR SYSTEM	0	9	14	20	33	87	N/A	$157
WILLOW PARK	C	TRWD - CEDAR CREEK WETLANDS	C | TRINITY INDIRECT REUSE	0	92	160	351	327	303	N/A	$114
WILLOW PARK	C	TRWD - TEHUACANA	C | TEHUACANA LAKE/RESERVOIR	0	0	76	193	107	143	N/A	$149
WILLOW PARK	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	402	0	N/A	[illegible]
WILMER	C	CONSERVATION - WILMER	DEMAND REDUCTION	1	3	7	18	35	75	$0	$0
WILMER	C	CONSERVATION, WATER LOSS CONTROL - WILMER	DEMAND REDUCTION	2	2	0	0	0	0	$3357	N/A

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WILMER	C	DWU - MAIN STEM REUSE	C | TRINITY INDIRECT REUSE	17	13	39	186	303	534	$153	$221
WILMER	C	LAKE PALESTINE	I | PALESTINE LAKE/RESERVOIR	0	40	111	167	237	380	N/A	$515
WILMER	I	ANRA-COL - LAKE COLUMBIA	I | COLUMBIA LAKE/RESERVOIR	0	0	0	0	0	201	N/A	$483
WILMER	I	UNM-ROR-NECHES RUN OF RIVER	I | NECHES RUN-OF-RIVER	0	0	0	0	104	169	N/A	$697
WOODBINE WSC	C	CONSERVATION - WOODBINE WSC	DEMAND REDUCTION	2	5	8	11	15	20	$0	$0
WOODBINE WSC	C	CONSERVATION, WATER LOSS CONTROL - WOODBINE WSC	DEMAND REDUCTION	3	3	0	0	0	0	$7352	N/A
WOODBINE WSC	C	GAINESVILLE UNALLOCATED SUPPLY UTILIZATION	C | HUBERT H MOSS LAKE/RESERVOIR	0	42	103	170	243	317	N/A	$0
WORTHAM	C	CONSERVATION - WORTHAM	DEMAND REDUCTION	1	1	2	2	5	7	$0	$0
WORTHAM	C	CONSERVATION, WATER LOSS CONTROL - WORTHAM	DEMAND REDUCTION	0	1	0	0	0	0	N/A	N/A
WORTHAM	G	CARRIZO AQUIFER DEVELOPMENT	G | CARRIZO-WILCOX AQUIFER | LIMESTONE COUNTY	10	16	20	24	141	179	$815	$815
WYLIE	C	CONSERVATION - WYLIE	DEMAND REDUCTION	24	54	86	119	154	190	$0	$0
WYLIE	C	CONSERVATION, WATER LOSS CONTROL - WYLIE	DEMAND REDUCTION	37	37	0	0	0	0	$569	N/A
WYLIE	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	121	208	233	281	200	145	$225	$84
WYLIE	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	90	1,178	1,399	1,761	1,313	995	$506	$71
WYLIE	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	285	371	295	194	8	0	$153	N/A
WYLIE	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	438	N/A	$509
WYLIE	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	460	587	768	587	N/A	$1315
WYLIE	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	740	875	N/A	$955
WYLIE	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	19	35	40	51	37	27	$19	$0
WYLIE	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	572	N/A	$640
WYLIE	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	251	194	N/A	$640
WYLIE NORTHEAST SUD	C	CONSERVATION - WYLIE NORTHEAST SUD	DEMAND REDUCTION	1	2	4	10	22	42	$0	$0
WYLIE NORTHEAST SUD	C	CONSERVATION, WATER LOSS CONTROL - WYLIE NORTHEAST SUD	DEMAND REDUCTION	1	1	0	0	0	0	$94616	N/A
WYLIE NORTHEAST SUD	C	NTMWD - ADDITIONAL LAKE LAVON	C | LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	5	8	11	24	29	31	$225	$84
WYLIE NORTHEAST SUD	C	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR	C | LOWER BOIS D ARC LAKE/RESERVOIR	3	47	65	155	186	219	$506	$71
WYLIE NORTHEAST SUD	C	NTMWD - MAIN STEM PUMP STATION	C | TRINITY INDIRECT REUSE	10	15	14	17	1	0	$153	N/A
WYLIE NORTHEAST SUD	C	NTMWD - OKLAHOMA	OK | OKLAHOMA RUN-OF-RIVER	0	0	0	0	0	96	N/A	$509
WYLIE NORTHEAST SUD	C	NTMWD - TEXOMA BLENDING	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	21	52	109	129	N/A	$1315
WYLIE NORTHEAST SUD	C	NTMWD - TOLEDO BEND PHASE I	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	105	192	N/A	$955

Recommended Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
WYLIE NORTHEAST SUD	C	REMOVAL OF CHAPMAN SILT BARRIER	D | CHAPMAN/COOPER LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	2	1	4	4	5	N/A	$0
WYLIE NORTHEAST SUD	C	SULPHUR BASIN SUPPLY	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	125	N/A	$640
WYLIE NORTHEAST SUD	C	SULPHUR BASIN SUPPLY	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	35	42	N/A	$640
Region C Total RecommendedWMS Supplies				205,934	443,262	685,831	916,798	1,164,140	1,453,024		

Alternative Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Primary Region: C

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
CORSICANA - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - CORSICANA NAVARRO MILLS WTP EXPANSION	C | NAVARRO MILLS LAKE/RESERVOIR	0	0	0	5,605	5,605	5,605	N/A	$166
DALLAS	C	ALTERNATIVE - DWU - TOLEDO BEND TO WEST SYSTEM	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	0	200,659	N/A	$262
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - CARRIZO-WILCOX GROUNDWATER	D | CARRIZO-WILCOX AQUIFER | WOOD COUNTY	0	12,000	12,000	12,000	12,000	12,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - CARRIZO-WILCOX GROUNDWATER	D | QUEEN CITY AQUIFER | SMITH COUNTY	0	6,000	6,000	6,000	6,000	6,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - CARRIZO-WILCOX GROUNDWATER	D | QUEEN CITY AQUIFER | UPSHUR COUNTY	0	6,000	6,000	6,000	6,000	6,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - CARRIZO-WILCOX GROUNDWATER	D | QUEEN CITY AQUIFER | WOOD COUNTY	0	6,000	6,000	6,000	6,000	6,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - DIRECT REUSE PROJECTS	C | DIRECT REUSE	0	0	0	0	2,242	2,242	N/A	$910
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - LAKE TEXOMA DESALINATION	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	0	146,000	146,000	N/A	$622
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - RED RIVER OFF-CHANNEL RESERVOIR	D | RED RUN-OF-RIVER	0	0	0	0	114,342	114,342	N/A	$238
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS	D | CARRIZO-WILCOX AQUIFER | WOOD COUNTY	0	0	0	14,500	14,500	14,500	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS	D | QUEEN CITY AQUIFER | SMITH COUNTY	0	0	0	6,000	6,000	6,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS	D | QUEEN CITY AQUIFER | UPSHUR COUNTY	0	0	0	12,000	12,000	12,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS	D | QUEEN CITY AQUIFER | WOOD COUNTY	0	0	0	12,000	12,000	12,000	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS	D | SABINE RUN-OF-RIVER	0	0	0	59,753	59,753	59,753	N/A	$225
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - DWU - TOLEDO BEND TO WEST SYSTEM	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	0	200,659	N/A	$262
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - SULPHUR BASIN STRATEGY - DALLAS & IRVING	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	34,303	N/A	$117
DALLAS - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - SULPHUR BASIN STRATEGY - DALLAS & IRVING	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	0	80,039	80,039	N/A	$272
GAINESVILLE - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - GAINESVILLE - LAKE TEXOMA	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	0	4,699	4,699	N/A	$1795
IRVING - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - IRVING - OKLAHOMA WATER	OK | OKLAHOMA HUGO LAKE/RESERVOIR	0	0	0	0	0	25,000	N/A	$1023
IRVING - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - SULPHUR BASIN STRATEGY - DALLAS & IRVING	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	7,500	N/A	$148
IRVING - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - SULPHUR BASIN STRATEGY - DALLAS & IRVING	D | WRIGHT PATMAN LAKE/RESERVOIR	0	0	0	17,500	17,500	17,500	N/A	$346
MIDLOTHIAN - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MIDLOTHIAN - DIRECT POTABLE REUSE	C | DIRECT REUSE	1,121	2,242	3,363	4,484	5,605	5,605	$1729	$947
MIDLOTHIAN - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MIDLOTHIAN JOE POOL	C | JOE POOL LAKE/RESERVOIR	1,048	1,026	1,004	983	961	939	$361	$356

Alternative Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
MUENSTER - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MUENSTER - CONNECT TO AND PURCHASE WATER FROM GAINESVILLE	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	280	280	280	280	280	280	$2135	$910
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	172,800	N/A	$644
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - FREESTONE/ANDERSON COUNTY GROUNDWATER (FORESTAR)	C | CARRIZO-WILCOX AQUIFER | FREESTONE COUNTY	0	0	10,500	10,500	10,500	10,500	N/A	$605
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - FREESTONE/ANDERSON COUNTY GROUNDWATER (FORESTAR)	C | QUEEN CITY AQUIFER | FREESTONE COUNTY	0	0	10,500	10,500	10,500	10,500	N/A	$605
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - FREESTONE/ANDERSON COUNTY GROUNDWATER (FORESTAR)	I | CARRIZO-WILCOX AQUIFER | ANDERSON COUNTY	0	0	10,500	10,500	10,500	10,500	N/A	$605
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - FREESTONE/ANDERSON COUNTY GROUNDWATER (FORESTAR)	I | QUEEN CITY AQUIFER | ANDERSON COUNTY	0	0	10,500	10,500	10,500	10,500	N/A	$605
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - GEORGE PARKHOUSE RESERVOIR (NORTH)	D | GEORGE PARKHOUSE NORTH LAKE/RESERVOIR	0	0	0	0	118,960	118,960	N/A	$549
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - GEORGE PARKHOUSE RESERVOIR (SOUTH)	D | GEORGE PARKHOUSE SOUTH LAKE/RESERVOIR	0	0	0	0	0	108,480	N/A	$619
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - LAKE OF THE PINES (FROM LAKE OF THE PINES TO NEW WTP AT FARMERSVILLE)	D | O' THE PINES LAKE/RESERVOIR	0	0	87,900	87,900	87,900	87,900	N/A	$242
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - LAKE TEXOMA ALREADY AUTHORIZED WITH DESAL AT SHERMAN	C | TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	0	0	39,235	39,235	39,235	39,235	N/A	$963
NORTH TEXAS MWD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	0	100,000	N/A	$289
ROCKETT SUD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - ROCKETT SUD - CONNECT TO DWU	C | TRINITY INDIRECT REUSE	5,605	5,605	5,605	5,605	5,605	5,605	$551	$59
TARRANT REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	280,000	N/A	$1057
TARRANT REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	0	200,000	N/A	$346
TARRANT REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - TRWD - OKLAHOMA WATER	OK | OKLAHOMA HUGO LAKE/RESERVOIR	0	50,000	50,000	50,000	50,000	50,000	N/A	$246
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD	D | MARVIN NICHOLS LAKE/RESERVOIR	0	0	0	0	0	35,000	N/A	$815
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - NTMWD - GEORGE PARKHOUSE RESERVOIR (SOUTH)	D | GEORGE PARKHOUSE SOUTH LAKE/RESERVOIR	0	0	0	0	35,000	35,000	N/A	$619
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD	I | TOLEDO BEND LAKE/RESERVOIR	0	0	0	0	0	48,000	N/A	$358
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - UTRWD - ADDITIONAL REUSE	C | DIRECT REUSE	0	15,000	15,000	15,000	15,000	15,000	N/A	[illegible]
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - UTRWD - LAKE TEXOMA BLEND	C | TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	0	0	0	0	0	25,000	N/A	$899

Alternative Water User Group (WUG) Water Management Strategies (WMS)

WUG Entity Name	WMS Sponsor Region	WMS Name	Source Name	Water Management Strategy Supplies 2020	2030	2040	2050	2060	2070	Unit Cost 2020	Unit Cost 2070
UPPER TRINITY REGIONAL WD - UNASSIGNED WATER VOLUMES	C	ALTERNATIVE - UTRWD OKLAHOMA WATER	OK | OKLAHOMA HUGO LAKE/RESERVOIR	0	15,000	15,000	15,000	15,000	15,000	N/A	$324
Region C Total Alternative WMS Supplies				8,054	119,153	289,387	417,845	920,226	2,357,605		

Recommended Projects Associated with Water Management Strategies

Project Sponosr Region: C

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
ABLES SPRINGS WSC	N	CONSERVATION, WATER LOSS CONTROL - ABLES SPRINGS WSC	WATER LOSS CONTROL	$13,856	2020
ADDISON	N	CONSERVATION, WATER LOSS CONTROL - ADDISON	WATER LOSS CONTROL	$1,086,563	2020
ALEDO	N	ALEDO - PARALLEL PIPELINE & PUMP STATION EXPANSION TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-169	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$7,710,500	2040
ALEDO	N	CONSERVATION, WATER LOSS CONTROL - ALEDO	WATER LOSS CONTROL	$21,877	2020
ALLEN	N	CONSERVATION, WATER LOSS CONTROL - ALLEN	WATER LOSS CONTROL	$1,192,200	2020
ALVORD	N	CONSERVATION, WATER LOSS CONTROL - ALVORD	WATER LOSS CONTROL	$1,611	2020
ANNA	N	CONSERVATION, WATER LOSS CONTROL - ANNA	WATER LOSS CONTROL	$71,750	2020
ANNETTA	N	CONSERVATION, WATER LOSS CONTROL - ANNETTA	WATER LOSS CONTROL	$2,716	2020
ANNETTA	N	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$2,077,600	2030
ANNETTA NORTH	N	CONSERVATION, WATER LOSS CONTROL - ANNETTA NORTH	WATER LOSS CONTROL	$1,136	2020
ANNETTA NORTH	N	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$59,400	2030
ANNETTA SOUTH	N	CONSERVATION, WATER LOSS CONTROL - ANNETTA SOUTH	WATER LOSS CONTROL	$1,026	2020
ANNETTA SOUTH	N	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,183,300	2030
ARGYLE	N	CONSERVATION, WATER LOSS CONTROL - ARGYLE	WATER LOSS CONTROL	$111,288	2020
ARGYLE WSC	Y	CONSERVATION, WATER LOSS CONTROL - ARGYLE WSC	WATER LOSS CONTROL	$70,513	2020
ARGYLE WSC	Y	CONSERVATION, WATER WASTE PROHIBITION - ARGYLE WSC	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
ARLINGTON	Y	CONSERVATION, WATER LOSS CONTROL - ARLINGTON	WATER LOSS CONTROL	$3,066,441	2020
ATHENS	N	CONSERVATION, WATER LOSS CONTROL - ATHENS	WATER LOSS CONTROL	$235,228	2020
ATHENS	N	CONSERVATION, WATER WASTE PROHIBITION - ATHENS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
ATHENS MUNICIPAL WATER AUTHORITY	Y	ATHENS MWA WTP INFRASTRUCTURE IMPROVEMENTS Q-145	PUMP STATION	$2,900,000	2020
AUBREY	N	CONSERVATION, WATER LOSS CONTROL - AUBREY	WATER LOSS CONTROL	$13,559	2020
AURORA	N	CONSERVATION, WATER LOSS CONTROL - AURORA	WATER LOSS CONTROL	$2,325	2020
AZLE	N	AZLE - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$11,046,000	2020
AZLE	N	CONSERVATION, WATER LOSS CONTROL - AZLE	WATER LOSS CONTROL	$217,081	2020
BALCH SPRINGS	N	CONSERVATION, WATER LOSS CONTROL - BALCH SPRINGS	WATER LOSS CONTROL	$84,625	2020
BARDWELL	N	CONSERVATION, WATER LOSS CONTROL - BARDWELL	WATER LOSS CONTROL	$1,157	2020
BARTONVILLE	N	CONSERVATION, WATER LOSS CONTROL - BARTONVILLE	WATER LOSS CONTROL	$34,394	2020
BEDFORD	N	BEDFORD - MUNICIPAL CONSERVATION - WATER DISTRIBUTION SYSTEM CONSERVATION Q-208	CONVEYANCE/TRANSMISSION PIPELINE	$90,000,000	2020
BEDFORD	N	CONSERVATION, WATER LOSS CONTROL - BEDFORD	WATER LOSS CONTROL	$1,493,519	2020
BELLS	N	BELLS - NEW WELL IN WOODBINE AQUIFER Q-136	SINGLE WELL	$1,200,000	2030
BELLS	N	CONSERVATION, WATER LOSS CONTROL - BELLS	WATER LOSS CONTROL	$250,000	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
BENBROOK	N	BENBROOK - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$13,715,000	2060
BENBROOK	N	CONSERVATION, IRRIGATION RESTRICTION - BENBROOK	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
BENBROOK	N	CONSERVATION, WATER LOSS CONTROL - BENBROOK	WATER LOSS CONTROL	$204,001	2020
BENBROOK	N	CONSERVATION, WATER WASTE PROHIBITION - BENBROOK	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
BETHEL-ASH WSC	N	CONSERVATION, WATER LOSS CONTROL - BETHEL-ASH WSC	WATER LOSS CONTROL	$4,744	2020
BETHESDA WSC	N	BETHESDA WSC - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-184	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$18,698,000	2020
BETHESDA WSC	N	CONSERVATION, WATER LOSS CONTROL - BETHESDA WSC	WATER LOSS CONTROL	$139,100	2020
BLACKLAND WSC	N	BLACKLAND WSC - DIRECT CONNECT TO NTMWD AND PURCHASE ADDITIONAL WATER FROM NTMWD Q-179	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,295,550	2020
BLACKLAND WSC	N	CONSERVATION, WATER LOSS CONTROL - BLACKLAND WSC	WATER LOSS CONTROL	$257,334	2020
BLOOMING GROVE	N	BLOOMING GROVE - NEW WELL IN TRINITY AQUIFER Q-164	NEW WATER TREATMENT PLANT; SINGLE WELL	$1,669,300	2020
BLOOMING GROVE	N	CONSERVATION, WATER LOSS CONTROL - BLOOMING GROVE	WATER LOSS CONTROL	$10,087	2020
BLUE MOUND	N	CONSERVATION, WATER LOSS CONTROL - BLUE MOUND	WATER LOSS CONTROL	$4,100	2020
BLUE RIDGE	N	BLUE RIDGE - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-69	CONVEYANCE/TRANSMISSION PIPELINE	$2,403,656	2030
BLUE RIDGE	N	BLUE RIDGE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-70	CONVEYANCE/TRANSMISSION PIPELINE	$1,036,000	2060
BLUE RIDGE	N	CONSERVATION, WATER LOSS CONTROL - BLUE RIDGE	WATER LOSS CONTROL	$1,541	2020
BOLIVAR WSC	N	CONSERVATION, WATER LOSS CONTROL - BOLIVAR WSC	WATER LOSS CONTROL	$22,380	2020
BONHAM	N	CONSERVATION, WATER LOSS CONTROL - BONHAM	WATER LOSS CONTROL	$98,964	2020
BOYD	N	CONSERVATION, WATER LOSS CONTROL - BOYD	WATER LOSS CONTROL	$6,674	2020
BRANDON-IRENE WSC	N	CONSERVATION, WATER LOSS CONTROL - BRANDON-IRENE WSC	WATER LOSS CONTROL	$98	2020
BRIDGEPORT	N	BRIDGEPORT - EXPAND CAPACITY OF LAKE INTAKE AND PUMP STATION Q-200	PUMP STATION	$766,100	2050
BRIDGEPORT	N	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$8,911,000	2050
BRIDGEPORT	N	BRIDGEPORT - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$7,844,000	2070
BRIDGEPORT	N	CONSERVATION, WATER LOSS CONTROL - BRIDGEPORT	WATER LOSS CONTROL	$84,181	2020
BRYSON	N	CONSERVATION, WATER LOSS CONTROL - BRYSON	WATER LOSS CONTROL	$4,352	2020
BUENA VISTA - BETHEL SUD	N	CONSERVATION, WATER LOSS CONTROL - BUENA VISTA - BETHEL SUD	WATER LOSS CONTROL	$58,210	2020
BURLESON	N	BURLESON - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-186	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$21,780,000	2040
BURLESON	N	CONSERVATION, WATER LOSS CONTROL - BURLESON	WATER LOSS CONTROL	$37,638	2020
CADDO BASIN SUD	N	CONSERVATION, WATER LOSS CONTROL - CADDO BASIN SUD	WATER LOSS CONTROL	$5,212	2020
CARROLLTON	N	CONSERVATION, WATER LOSS CONTROL - CARROLLTON	WATER LOSS CONTROL	$2,580,390	2020
CASH SUD	Y	CASH WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-180	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$6,654,700	2020
CASH SUD	Y	CONSERVATION, WATER LOSS CONTROL - CASH SUD	WATER LOSS CONTROL	$1,928	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
CEDAR HILL	N	CONSERVATION, WATER LOSS CONTROL - CEDAR HILL	WATER LOSS CONTROL	$1,461,366	2020
CEDAR HILL	N	CONSERVATION, WATER WASTE PROHIBITION - CEDAR HILL	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$13,210	2020
CELINA	N	CELINA - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-71	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$16,314,000	2030
CELINA	N	CONSERVATION, WATER LOSS CONTROL - CELINA	WATER LOSS CONTROL	$800,520	2020
CHATFIELD WSC	N	CHATFIELD WSC - WATER SYSTEM IMPROVEMENTS Q-165	CONVEYANCE/TRANSMISSION PIPELINE	$1,000,000	2030
CHATFIELD WSC	N	CONSERVATION, WATER LOSS CONTROL - CHATFIELD WSC	WATER LOSS CONTROL	$12,778	2020
CHICO	N	CHICO - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM WEST WISE SUD Q-201	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,610,000	2050
CHICO	N	CONSERVATION, WATER LOSS CONTROL - CHICO	WATER LOSS CONTROL	$4,423	2020
COCKRELL HILL	N	CONSERVATION, WATER LOSS CONTROL - COCKRELL HILL	WATER LOSS CONTROL	$26,094	2020
COLLEGE MOUND WSC	N	COLLEGE MOUND - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM TERRELL Q-153	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$5,348,000	2060
COLLEGE MOUND WSC	N	CONSERVATION, WATER LOSS CONTROL - COLLEGE MOUND WSC	WATER LOSS CONTROL	$15,432	2020
COLLEYVILLE	N	CONSERVATION, WATER LOSS CONTROL - COLLEYVILLE	WATER LOSS CONTROL	$421,926	2020
COLLINSVILLE	N	CONSERVATION, WATER LOSS CONTROL - COLLINSVILLE	WATER LOSS CONTROL	$4,551	2020
COMBINE	N	CONSERVATION, WATER LOSS CONTROL - COMBINE	WATER LOSS CONTROL	$21,983	2020
COMMUNITY WSC	N	CONSERVATION, WATER LOSS CONTROL - COMMUNITY WSC	WATER LOSS CONTROL	$8,353	2020
COPEVILLE SUD	N	CONSERVATION, WATER LOSS CONTROL - COPEVILLE SUD	WATER LOSS CONTROL	$16,214	2020
COPPELL	N	CONSERVATION, WATER LOSS CONTROL - COPPELL	WATER LOSS CONTROL	$1,812,438	2020
COPPER CANYON	N	CONSERVATION, WATER LOSS CONTROL - COPPER CANYON	WATER LOSS CONTROL	$7,738	2020
CORBET WSC	N	CONSERVATION, WATER LOSS CONTROL - CORBET WSC	WATER LOSS CONTROL	$4,009	2020
CORINTH	N	CONSERVATION, IRRIGATION RESTRICTION - CORINTH	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
CORINTH	N	CONSERVATION, WATER LOSS CONTROL - CORINTH	WATER LOSS CONTROL	$609,100	2020
CORINTH	N	CORINTH - NEW WELL IN TRINITY AQUIFER (2020) Q-96	SINGLE WELL	$1,634,600	2020
CORINTH	N	CORINTH - NEW WELL IN TRINITY AQUIFER (2030) Q-97	SINGLE WELL	$1,634,600	2030
CORINTH	N	CORINTH - UPGRADE EXISTING WELL Q-98	MULTIPLE WELLS/WELL FIELD	$2,372,900	2020
CORSICANA	Y	CONSERVATION, WATER LOSS CONTROL - CORSICANA	WATER LOSS CONTROL	$248,252	2020
CORSICANA	Y	CORSICANA - NEW 8 MGD WATER TREATMENT PLANT Q-12	NEW WATER TREATMENT PLANT	$37,370,000	2020
CORSICANA	Y	CORSICANA - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$21,689,000	2050
COUNTY-OTHER, COLLIN	N	CONSERVATION, WATER LOSS CONTROL - COLLIN COUNTY	WATER LOSS CONTROL	$38,848	2020
COUNTY-OTHER, COOKE	N	CONSERVATION, WATER LOSS CONTROL - COOKE COUNTY	WATER LOSS CONTROL	$24,421	2020
COUNTY-OTHER, DALLAS	N	CONSERVATION, WATER LOSS CONTROL - DALLAS COUNTY	WATER LOSS CONTROL	$48,123	2020
COUNTY-OTHER, DENTON	N	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY	WATER LOSS CONTROL	$92,932	2020
COUNTY-OTHER, DENTON	N	DENTON COUNTY OTHER - NEW WELL IN TRINITY AQUIFER Q-102	MULTIPLE WELLS/WELL FIELD	$2,772,023	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
COUNTY-OTHER, DENTON	N	DENTON COUNTY OTHER - NEW WELL IN WOODBINE AQUIFER Q-101	MULTIPLE WELLS/WELL FIELD	$11,691,860	2020
COUNTY-OTHER, ELLIS	N	CONSERVATION, WATER LOSS CONTROL - ELLIS COUNTY	WATER LOSS CONTROL	$15,199	2020
COUNTY-OTHER, FANNIN	N	CONSERVATION, WATER LOSS CONTROL - FANNIN COUNTY	WATER LOSS CONTROL	$29,907	2020
COUNTY-OTHER, FREESTONE	N	CONSERVATION, WATER LOSS CONTROL - FREESTONE COUNTY	WATER LOSS CONTROL	$24,466	2020
COUNTY-OTHER, FREESTONE	N	FREESTONE COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-134	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$39,845,900	2020
COUNTY-OTHER, FREESTONE	N	FREESTONE COUNTY OTHER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CO Q-133	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$5,550,000	2030
COUNTY-OTHER, GRAYSON	N	CONSERVATION, WATER LOSS CONTROL - GRAYSON COUNTY	WATER LOSS CONTROL	$61,207	2020
COUNTY-OTHER, HENDERSON	N	CONSERVATION, WATER LOSS CONTROL - HENDERSON COUNTY	WATER LOSS CONTROL	$5,449	2020
COUNTY-OTHER, HENDERSON	N	HENDERSON COUNTY SEP - TRANSMISSION FACILITIES FROM CEDAR CREEK LAKE Q-147	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$19,951,000	2020
COUNTY-OTHER, JACK	N	CONSERVATION, WATER LOSS CONTROL - JACK COUNTY	WATER LOSS CONTROL	$9,485	2020
COUNTY-OTHER, JACK	N	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM JACKSBORO Q-151	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,893,000	2020
COUNTY-OTHER, JACK	N	JACK COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM WALNUT CREEK SUD Q-152	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$2,713,000	2020
COUNTY-OTHER, KAUFMAN	N	CONSERVATION, WATER LOSS CONTROL - KAUFMAN COUNTY	WATER LOSS CONTROL	$37,415	2020
COUNTY-OTHER, KAUFMAN	N	KAUFMAN COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-149	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION	$11,922,000	2020
COUNTY-OTHER, NAVARRO	N	CONSERVATION, WATER LOSS CONTROL - NAVARRO COUNTY	WATER LOSS CONTROL	$12,260	2020
COUNTY-OTHER, PARKER	N	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY	WATER LOSS CONTROL	$179,036	2020
COUNTY-OTHER, PARKER	N	PARKER COUNTY OTHER - CONNECT TO AND PURCHASE WATER FROM TRWD Q-174	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$116,775,000	2060
COUNTY-OTHER, PARKER	N	PARKER COUNTY OTHER - NEW WELLS IN TRINITY AQUIFER Q-173	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION	$1,448,000	2020
COUNTY-OTHER, ROCKWALL	N	CONSERVATION, WATER LOSS CONTROL - ROCKWALL COUNTY	WATER LOSS CONTROL	$12,200	2020
COUNTY-OTHER, TARRANT	N	CONSERVATION, WATER LOSS CONTROL - TARRANT COUNTY	WATER LOSS CONTROL	$158,141	2020
COUNTY-OTHER, WISE	N	CONSERVATION, WATER LOSS CONTROL - WISE COUNTY	WATER LOSS CONTROL	$87,859	2020
CRANDALL	N	CONSERVATION, WATER LOSS CONTROL - CRANDALL	WATER LOSS CONTROL	$20,209	2020
CRESSON	N	CONSERVATION, WATER LOSS CONTROL - CRESSON	WATER LOSS CONTROL	$5,210	2020
CRESSON	N	CRESSON - NEW WELL IN TRINITY AQUIFER Q-170	MULTIPLE WELLS/WELL FIELD	$917,300	2020
CROSS ROADS	N	CONSERVATION, WATER LOSS CONTROL - CROSS ROADS	WATER LOSS CONTROL	$16,218	2020
CROSS TIMBERS WSC	Y	CROSS TIMBERS WSC - INFRASTRUCTURE IMPROVEMENTS Q-99	CONVEYANCE/TRANSMISSION PIPELINE	$5,858,000	2030
CROWLEY	N	CONSERVATION, WATER LOSS CONTROL - CROWLEY	WATER LOSS CONTROL	$342,055	2020
CROWLEY	N	CROWLEY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-187	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$11,558,000	2030
CULLEOKA WSC	N	CONSERVATION, WATER LOSS CONTROL - CULLEOKA WSC	WATER LOSS CONTROL	$15,924	2020
DALLAS	Y	CONSERVATION, WATER LOSS CONTROL - DALLAS	WATER LOSS CONTROL	$3,124,457	2020
DALLAS	Y	DWU - CONNECT LAKE PALESTINE Q-36	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$465,491,000	2030
DALLAS	Y	DWU - CONNECT TO BACHMAN Q-37	CONVEYANCE/TRANSMISSION PIPELINE	$48,574,000	2030

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
DALLAS	Y	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2020 NEW WATER PLANT Q-40	NEW WATER TREATMENT PLANT	$368,187,000	2020
DALLAS	Y	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2025 WTP EXPANSIONS Q-40	WATER TREATMENT PLANT EXPANSION	$346,680,000	2030
DALLAS	Y	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2035 WTP EXPANSIONS Q-40	WATER TREATMENT PLANT EXPANSION	$1,211,133,000	2040
DALLAS	Y	DWU - INFRASTRUCTURE TO TREAT AND DELIVER TO CUSTOMERS 2045 WTP EXPANSIONS Q-40	WATER TREATMENT PLANT EXPANSION	$161,784,000	2050
DALLAS	Y	DWU - LAKE COLUMBIA Q-39	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$327,187,000	2070
DALLAS	Y	DWU - MAIN STEM BALANCING RESERVOIR Q-35	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER RIGHT/PERMIT; RESERVOIR CONSTRUCTION	$674,463,000	2050
DALLAS	Y	DWU - MAIN STEM PUMP STATION Q-34	PUMP STATION	$44,481,000	2020
DALLAS	Y	DWU - NECHES RIVER RUN-OF-THE-RIVER DIVERSIONS PROJECT Q-38	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$226,790,000	2060
DALLAS	Y	TRWD & DWU INTEGRATED PIPELINE Q-48	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$386,752,000	2030
DALWORTHINGTON GARDENS	N	CONSERVATION, WATER LOSS CONTROL - DALWORTHINGTON GARDENS	WATER LOSS CONTROL	$35,744	2020
DAWSON	N	CONSERVATION, WATER LOSS CONTROL - DAWSON	WATER LOSS CONTROL	$2,995	2020
DECATUR	N	CONSERVATION, WATER LOSS CONTROL - DECATUR	WATER LOSS CONTROL	$238,239	2020
DENISON	Y	CONSERVATION, WATER LOSS CONTROL - DENISON	WATER LOSS CONTROL	$322,613	2020
DENISON	Y	DENISON - EXPAND RAW WATER DELIVERY FROM LAKE TEXOMA Q-137	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$21,629,700	2030
DENISON	Y	DENISON - NEW 4 MGD WATER TREATMENT PLANT Q-12	NEW WATER TREATMENT PLANT	$19,888,000	2060
DENISON	Y	DENISON - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$13,168,000	2030
DENISON	Y	DENISON - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$13,168,000	2070
DENTON	Y	CONSERVATION, WATER LOSS CONTROL - DENTON	WATER LOSS CONTROL	$1,938,438	2020
DENTON	Y	DENTON - 20 MGD RAY ROBERTS PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$42,922,000	2040
DENTON	Y	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$59,881,000	2020
DENTON	Y	DENTON - 30 MGD RAY ROBERTS PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$59,881,000	2050
DENTON	Y	DENTON - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$51,402,000	2060
DENTON	Y	DENTON - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$51,402,000	2070
DENTON COUNTY FWSD #10	N	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #10	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
DENTON COUNTY FWSD #10	N	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #10	WATER LOSS CONTROL	$43,942	2020
DENTON COUNTY FWSD #1A	N	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #1A	WATER LOSS CONTROL	$163,972	2020
DENTON COUNTY FWSD #7	N	CONSERVATION, IRRIGATION RESTRICTION - DENTON COUNTY FWSD #7	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
DENTON COUNTY FWSD #7	N	CONSERVATION, WATER LOSS CONTROL - DENTON COUNTY FWSD #7	WATER LOSS CONTROL	$675,975	2020
DESOTO	N	CONSERVATION, IRRIGATION RESTRICTION - DESOTO	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$14,389	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
DESOTO	N	CONSERVATION, WATER LOSS CONTROL - DESOTO	WATER LOSS CONTROL	$220,487	2020
DOUBLE OAK	N	CONSERVATION, WATER LOSS CONTROL - DOUBLE OAK	WATER LOSS CONTROL	$17,324	2020
DUNCANVILLE	N	CONSERVATION, WATER LOSS CONTROL - DUNCANVILLE	WATER LOSS CONTROL	$821,033	2020
EAST CEDAR CREEK FWSD	Y	CONSERVATION, WATER LOSS CONTROL - EAST CEDAR CREEK FWSD	WATER LOSS CONTROL	$28,785	2020
EAST CEDAR CREEK FWSD	Y	EAST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$8,904,000	2070
EAST FORK SUD	N	CONSERVATION, WATER LOSS CONTROL - EAST FORK SUD	WATER LOSS CONTROL	$450,000	2020
EAST FORK SUD	N	EAST FORK SUD- INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-181	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,500,000	2020
ECTOR	N	CONSERVATION, WATER LOSS CONTROL - ECTOR	WATER LOSS CONTROL	$5,171	2020
EDGECLIFF VILLAGE	N	CONSERVATION, WATER LOSS CONTROL - EDGECLIFF VILLAGE	WATER LOSS CONTROL	$69,007	2020
ENNIS	Y	CONSERVATION, IRRIGATION RESTRICTION - ENNIS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
ENNIS	Y	CONSERVATION, WATER LOSS CONTROL - ENNIS	WATER LOSS CONTROL	$105,170	2020
ENNIS	Y	CONSERVATION, WATER WASTE PROHIBITION - ENNIS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
ENNIS	Y	ENNIS - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2040
ENNIS	Y	ENNIS - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$21,697,000	2060
ENNIS	Y	ENNIS - WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$36,138,000	2070
ENNIS	Y	ENNIS INDIRECT REUSE Q-108	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$39,456,900	2040
EULESS	N	CONSERVATION, WATER LOSS CONTROL - EULESS	WATER LOSS CONTROL	$1,284,690	2020
EULESS	N	CONSERVATION, WATER WASTE PROHIBITION - EULESS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$14,668	2020
EUSTACE	N	CONSERVATION, WATER LOSS CONTROL - EUSTACE	WATER LOSS CONTROL	$5,043	2020
EUSTACE	N	EUSTACE - NEW WELL IN CARRIZO-WILCOX Q-146	MULTIPLE WELLS/WELL FIELD	$912,400	2020
EVERMAN	N	CONSERVATION, WATER LOSS CONTROL - EVERMAN	WATER LOSS CONTROL	$62,329	2020
FAIRFIELD	N	CONSERVATION, WATER LOSS CONTROL - FAIRFIELD	WATER LOSS CONTROL	$56,204	2020
FAIRFIELD	N	FAIRFIELD - CONNECT TO AND PURCHASE WATER FROM TRWD (RICHLAND-CHAMBERS) Q-132	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION	$7,283,000	2050
FAIRVIEW	N	CONSERVATION, WATER LOSS CONTROL - FAIRVIEW	WATER LOSS CONTROL	$221,824	2020
FARMERS BRANCH	N	CONSERVATION, IRRIGATION RESTRICTION - FARMERS BRANCH	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$8,395	2020
FARMERS BRANCH	N	CONSERVATION, WATER LOSS CONTROL - FARMERS BRANCH	WATER LOSS CONTROL	$298,626	2020
FARMERS BRANCH	N	CONSERVATION, WATER WASTE PROHIBITION - FARMERS BRANCH	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$8,395	2020
FARMERSVILLE	N	CONSERVATION, WATER LOSS CONTROL - FARMERSVILLE	WATER LOSS CONTROL	$25,355	2020
FATE	N	CONSERVATION, WATER LOSS CONTROL - FATE	WATER LOSS CONTROL	$116,210	2020
FATE	N	FATE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-182	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$15,075,000	2060

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
FERRIS	N	CONSERVATION, WATER LOSS CONTROL - FERRIS	WATER LOSS CONTROL	$42,703	2020
FERRIS	N	FERRIS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-109	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$2,578,000	2060
FILES VALLEY WSC	N	CONSERVATION, WATER LOSS CONTROL - FILES VALLEY WSC	WATER LOSS CONTROL	$2,010	2020
FLO COMMUNITY WSC	N	CONSERVATION, WATER LOSS CONTROL - FLO COMMUNITY WSC	WATER LOSS CONTROL	$539	2020
FLOWER MOUND	N	CONSERVATION, WATER LOSS CONTROL - FLOWER MOUND	WATER LOSS CONTROL	$1,062,719	2020
FOREST HILL	N	CONSERVATION, WATER LOSS CONTROL - FOREST HILL	WATER LOSS CONTROL	$159,491	2020
FORNEY	Y	CONSERVATION, WATER LOSS CONTROL - FORNEY	WATER LOSS CONTROL	$308,348	2020
FORNEY	Y	FORNEY - INCREASE PUMP STATION CAPACITY Q-154	PUMP STATION	$11,162,800	2050
FORNEY LAKE WSC	N	CONSERVATION, WATER LOSS CONTROL - FORNEY LAKE WSC	WATER LOSS CONTROL	$44,705	2020
FORT WORTH	Y	CONSERVATION, WATER LOSS CONTROL - FORT WORTH	WATER LOSS CONTROL	$162,000,000	2020
FORT WORTH	Y	FORT WORTH - 50 MGD EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2050
FORT WORTH	Y	FORT WORTH - 50 MGD EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2050
FORT WORTH	Y	FORT WORTH - 50 MGD EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2060
FORT WORTH	Y	FORT WORTH - 50 MGD EXPANSION 4 Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2070
FORT WORTH	Y	FORT WORTH - 50 MGD EXPANSION 5 Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2070
FORT WORTH	Y	FORT WORTH - EAGLE MOUNTAIN 30 MGD EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$59,977,000	2040
FORT WORTH	Y	FORT WORTH - EAGLE MOUNTAIN 35 MGD EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$68,472,000	2030
FORT WORTH	Y	FORT WORTH - MUNICIPAL CONSERVATION - ADVANCED METER INFRASTRUCTURE PROGRAM Q-209	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$76,000,000	2020
FORT WORTH	Y	FORT WORTH - ROLLING HILLS 50 MGD EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$93,960,000	2030
FORT WORTH	Y	FORT WORTH - WEST PLANT 23 MGD EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$48,082,000	2030
FORT WORTH	Y	FORT WORTH - WEST PLANT 35 MGD EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$68,472,000	2040
FORT WORTH	Y	FORT WORTH DIRECT REUSE - ALLIANCE CORRIDOR Q-68	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$16,083,000	2020
FORT WORTH	Y	FORT WORTH FUTURE DIRECT REUSE Q-67	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$129,976,000	2020
FORT WORTH	Y	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	CONVEYANCE/TRANSMISSION PIPELINE	$5,233,000	2020
FRISCO	N	CONSERVATION, WATER LOSS CONTROL - FRISCO	WATER LOSS CONTROL	$1,829,608	2020
FRISCO	N	FRISCO - DEVELOP DIRECT REUSE Q-74	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$34,882,048	2020
FROST	N	CONSERVATION, WATER LOSS CONTROL - FROST	WATER LOSS CONTROL	$4,559	2020
GAINESVILLE	Y	CONSERVATION, WATER LOSS CONTROL - GAINESVILLE	WATER LOSS CONTROL	$225,921	2020
GAINESVILLE	Y	GAINESVILLE - DIRECT REUSE Q-81	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,669,000	2020
GAINESVILLE	Y	GAINESVILLE - INFRASTRUCTURE TO DELIVER TO CUSTOMERS Q-82	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$26,296,000	2030
GAINESVILLE	Y	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$9,970,000	2060
GAINESVILLE	Y	GAINESVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$17,431,000	2070
GARLAND	Y	CONSERVATION, WATER LOSS CONTROL - GARLAND	WATER LOSS CONTROL	$2,352,502	2020
GARRETT	N	CONSERVATION, WATER LOSS CONTROL - GARRETT	WATER LOSS CONTROL	$9,298	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
GASTONIA-SCURRY SUD	N	CONSERVATION, WATER LOSS CONTROL - GASTONIA-SCURRY SUD	WATER LOSS CONTROL	$12,199	2020
GASTONIA-SCURRY SUD	N	GASTONIA-SCURRY SUD - CONNECT TO SEAGOVILLE (DWU) Q-155	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$4,577,500	2020
GLENN HEIGHTS	N	CONSERVATION, WATER LOSS CONTROL - GLENN HEIGHTS	WATER LOSS CONTROL	$72,376	2020
GLENN HEIGHTS	N	GLENN HEIGHTS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-86	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$2,374,000	2060
GRAND PRAIRIE	Y	CONSERVATION, WATER LOSS CONTROL - GRAND PRAIRIE	WATER LOSS CONTROL	$2,060,148	2020
GRAND PRAIRIE	Y	GRAND PRAIRIE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-87	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$4,950,500	2020
GRAND PRAIRIE	Y	GRAND PRAIRIE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-88	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$34,306,000	2020
GRAPEVINE	N	CONSERVATION, WATER LOSS CONTROL - GRAPEVINE	WATER LOSS CONTROL	$3,237,778	2020
GREATER TEXOMA UTILITY AUTHORITY	Y	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE EAST-WEST WATER LINE Q-65	CONVEYANCE/TRANSMISSION PIPELINE	$3,672,000	2050
GREATER TEXOMA UTILITY AUTHORITY	Y	GTUA - COLLIN-GRAYSON MUNICIPAL ALLIANCE WATER TRANSMISSION SYSTEM - PHASE 2 Q-66	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$59,492,000	2060
GREATER TEXOMA UTILITY AUTHORITY	Y	GTUA - GRAYSON COUNTY WATER SUPPLY PROJECT Q-64	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$92,840,000	2020
GREATER TEXOMA UTILITY AUTHORITY	Y	GTUA - REUSE FOR GRAYSON COUNTY STEAM ELECTRIC POWER Q-63	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$24,356,000	2030
GUN BARREL CITY	N	CONSERVATION, WATER LOSS CONTROL - GUN BARREL CITY	WATER LOSS CONTROL	$28,375	2020
GUNTER	N	CONSERVATION, WATER LOSS CONTROL - GUNTER	WATER LOSS CONTROL	$20,228	2020
GUNTER	N	GUNTER - NEW WELL IN TRINITY AQUIFER (2020) Q-139	SINGLE WELL	$1,040,300	2020
GUNTER	N	GUNTER - NEW WELL IN TRINITY AQUIFER (2030) Q-140	SINGLE WELL	$1,040,300	2030
HACKBERRY	N	CONSERVATION, WATER LOSS CONTROL - HACKBERRY	WATER LOSS CONTROL	$10,906	2020
HACKBERRY	N	HACKBERRY - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-103	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,731,000	2050
HALTOM CITY	N	CONSERVATION, WATER LOSS CONTROL - HALTOM CITY	WATER LOSS CONTROL	$659,284	2020
HASLET	N	CONSERVATION, WATER LOSS CONTROL - HASLET	WATER LOSS CONTROL	$19,711	2020
HASLET	N	CONSERVATION, WATER WASTE PROHIBITION - HASLET	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
HEATH	N	CONSERVATION, IRRIGATION RESTRICTION - HEATH	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
HEATH	N	CONSERVATION, WATER LOSS CONTROL - HEATH	WATER LOSS CONTROL	$680,172	2020
HICKORY CREEK	N	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK	WATER LOSS CONTROL	$17,941	2020
HICKORY CREEK SUD	N	CONSERVATION, WATER LOSS CONTROL - HICKORY CREEK SUD	WATER LOSS CONTROL	$555	2020
HIGH POINT WSC	N	CONSERVATION, WATER LOSS CONTROL - HIGH POINT WSC	WATER LOSS CONTROL	$9,661	2020
HIGHLAND PARK	N	CONSERVATION, WATER LOSS CONTROL - HIGHLAND PARK	WATER LOSS CONTROL	$87,810	2020
HIGHLAND VILLAGE	N	CONSERVATION, WATER LOSS CONTROL - HIGHLAND VILLAGE	WATER LOSS CONTROL	$544,339	2020
HONEY GROVE	N	CONSERVATION, WATER LOSS CONTROL - HONEY GROVE	WATER LOSS CONTROL	$3,829	2020
HOWE	N	CONSERVATION, WATER LOSS CONTROL - HOWE	WATER LOSS CONTROL	$1,436	2020
HUDSON OAKS	N	CONSERVATION, WATER LOSS CONTROL - HUDSON OAKS	WATER LOSS CONTROL	$11,573	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
HUDSON OAKS	N	CONSERVATION, WATER WASTE PROHIBITION - HUDSON OAKS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
HURST	N	CONSERVATION, WATER LOSS CONTROL - HURST	WATER LOSS CONTROL	$936,745	2020
HUTCHINS	N	CONSERVATION, WATER LOSS CONTROL - HUTCHINS	WATER LOSS CONTROL	$129,514	2020
IRVING	N	CONSERVATION, WATER LOSS CONTROL - IRVING	WATER LOSS CONTROL	$7,904,869	2020
IRVING	N	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	PUMP STATION	$8,546,000	2020
IRVING	N	Q-90 IRVING - TRA CENTRAL REUSE	CONVEYANCE/TRANSMISSION PIPELINE	$39,960,000	2020
ITALY	N	CONSERVATION, WATER LOSS CONTROL - ITALY	WATER LOSS CONTROL	$6,406	2020
JACKSBORO	N	CONSERVATION, WATER LOSS CONTROL - JACKSBORO	WATER LOSS CONTROL	$16,571	2020
JOHNSON COUNTY SUD	Y	CONSERVATION, WATER LOSS CONTROL - JOHNSON COUNTY SUD	WATER LOSS CONTROL	$4,470	2020
JOHNSON COUNTY SUD	Y	OHNSON COUNTY SUD - CONNECT TO PURCHASE WATER FROM GRAND PRAIRIE Q-188	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$86,140,000	2020
JOSEPHINE	N	CONSERVATION, WATER LOSS CONTROL - JOSEPHINE	WATER LOSS CONTROL	$6,573	2020
JUSTIN	N	CONSERVATION, WATER LOSS CONTROL - JUSTIN	WATER LOSS CONTROL	$17,064	2020
JUSTIN	N	JUSTIN - NEW WELL IN TRINITY AQUIFER Q-104	MULTIPLE WELLS/WELL FIELD	$2,115,500	2020
KAUFMAN	N	CONSERVATION, WATER LOSS CONTROL - KAUFMAN	WATER LOSS CONTROL	$12,755	2020
KELLER	N	CONSERVATION, WATER LOSS CONTROL - KELLER	WATER LOSS CONTROL	$1,810,304	2020
KELLER	N	KELLER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-189	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$17,535,000	2020
KEMP	N	CONSERVATION, WATER LOSS CONTROL - KEMP	WATER LOSS CONTROL	$31,428	2020
KENNEDALE	N	CONSERVATION, WATER LOSS CONTROL - KENNEDALE	WATER LOSS CONTROL	$50,144	2020
KENNEDALE	N	KENNEDALE - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-190	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,720,000	2020
KENNEDALE	N	KENNEDALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORT Q-191	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,685,000	2040
KENTUCKY TOWN WSC	N	CONSERVATION, WATER LOSS CONTROL - KENTUCKY TOWN WSC	WATER LOSS CONTROL	$7,487	2020
KERENS	N	CONSERVATION, WATER LOSS CONTROL - KERENS	WATER LOSS CONTROL	$3,823	2020
KRUGERVILLE	N	CONSERVATION, WATER LOSS CONTROL - KRUGERVILLE	WATER LOSS CONTROL	$7,419	2020
KRUM	N	CONSERVATION, WATER LOSS CONTROL - KRUM	WATER LOSS CONTROL	$30,634	2020
KRUM	N	KRUM - NEW WELL IN TRINITY AQUIFER Q-105	SINGLE WELL	$1,533,200	2020
LADONIA	N	CONSERVATION, WATER LOSS CONTROL - LADONIA	WATER LOSS CONTROL	$6,099	2020
LADONIA	N	LADONIA - CONNECT TO AND PURCHASE WATER FROM UTRWD (LAKE RALPH HALL) Q-129	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$12,134,600	2030
LAKE DALLAS	N	CONSERVATION, WATER LOSS CONTROL - LAKE DALLAS	WATER LOSS CONTROL	$34,026	2020
LAKE KIOWA SUD	N	CONSERVATION, WATER LOSS CONTROL - LAKE KIOWA SUD	WATER LOSS CONTROL	$107,958	2020
LAKE WORTH	N	CONSERVATION, WATER LOSS CONTROL - LAKE WORTH	WATER LOSS CONTROL	$2,039,240	2020
LAKESIDE	N	CONSERVATION, WATER LOSS CONTROL - LAKESIDE	WATER LOSS CONTROL	$22,567	2020
LAKEWOOD VILLAGE	N	CONSERVATION, WATER LOSS CONTROL - LAKEWOOD VILLAGE	WATER LOSS CONTROL	$2,105	2020
LANCASTER	N	CONSERVATION, IRRIGATION RESTRICTION - LANCASTER	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$10,667	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
LANCASTER	N	CONSERVATION, WATER LOSS CONTROL - LANCASTER	WATER LOSS CONTROL	$1,039,386	2020
LAVON	N	CONSERVATION, WATER LOSS CONTROL - LAVON	WATER LOSS CONTROL	$13,820	2020
LAVON SUD	N	CONSERVATION, WATER LOSS CONTROL - LAVON SUD	WATER LOSS CONTROL	$14,354	2020
LEONARD	N	CONSERVATION, WATER LOSS CONTROL - LEONARD	WATER LOSS CONTROL	$16,497	2020
LEONARD	N	LEONARD - WATER SYSTEM IMPROVEMENTS Q-207	SINGLE WELL	$2,567,600	2030
LEWISVILLE	N	CONSERVATION, IRRIGATION RESTRICTION - LEWISVILLE	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$14,668	2020
LEWISVILLE	N	CONSERVATION, WATER LOSS CONTROL - LEWISVILLE	WATER LOSS CONTROL	$1,160,420	2020
LEWISVILLE	N	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2030
LEWISVILLE	N	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2040
LEWISVILLE	N	LEWISVILLE - WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$19,565,000	2050
LINDSAY	N	CONSERVATION, WATER LOSS CONTROL - LINDSAY	WATER LOSS CONTROL	$10,685	2020
LITTLE ELM	N	CONSERVATION, WATER LOSS CONTROL - LITTLE ELM	WATER LOSS CONTROL	$311,279	2020
LOG CABIN	N	CONSERVATION, WATER LOSS CONTROL - LOG CABIN	WATER LOSS CONTROL	$1,340	2020
LOWRY CROSSING	N	CONSERVATION, WATER LOSS CONTROL - LOWRY CROSSING	WATER LOSS CONTROL	$4,120	2020
LUCAS	N	CONSERVATION, IRRIGATION RESTRICTION - LUCAS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
LUCAS	N	CONSERVATION, WATER LOSS CONTROL - LUCAS	WATER LOSS CONTROL	$55,245	2020
LUELLA SUD	N	CONSERVATION, WATER LOSS CONTROL - LUELLA SUD	WATER LOSS CONTROL	$21,603	2020
MABANK	N	CONSERVATION, WATER LOSS CONTROL - MABANK	WATER LOSS CONTROL	$48,679	2020
MABANK	N	MABANK - INCREASE DELIVERY INFRASTRUCTURE FROM CEDAR CREEK LAKE Q-143	CONVEYANCE/TRANSMISSION PIPELINE	$262,000	2030
MABANK	N	MABANK - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$8,905,000	2030
MABANK	N	MABANK - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$11,037,000	2060
MACBEE SUD	N	CONSERVATION, WATER LOSS CONTROL - MACBEE SUD	WATER LOSS CONTROL	$243	2020
MALAKOFF	N	CONSERVATION, WATER LOSS CONTROL - MALAKOFF	WATER LOSS CONTROL	$18,817	2020
MANSFIELD	Y	CONSERVATION, WATER LOSS CONTROL - MANSFIELD	WATER LOSS CONTROL	$2,320,683	2020
MANSFIELD	Y	MANSFIELD - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$42,984,000	2020
MANSFIELD	Y	MANSFIELD - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$42,984,000	2020
MANSFIELD	Y	MANSFIELD - WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$34,489,000	2050
MANSFIELD	Y	MANSFIELD - WATER TREATMENT PLANT EXPANSION 4 Q-13	WATER TREATMENT PLANT EXPANSION	$36,188,000	2060
MANUFACTURING, COLLIN	N	COLLIN COUNTY MANUFACTURING - NEW WELL IN WOODBINE AQUIFER Q-72	SINGLE WELL	$402,800	2030
MANUFACTURING, DENTON	N	DENTON COUNTY MANUFACTURING - NEW WELL IN WOODBINE AQUIFER Q-100	SINGLE WELL	$777,700	2020
MANUFACTURING, WISE	N	WISE COUNTY MANUFACTURING - NEW WELLS IN TRINITY AQUIFER Q-205	MULTIPLE WELLS/WELL FIELD	$1,636,600	2020
MARILEE SUD	N	CONSERVATION, WATER LOSS CONTROL - MARILEE SUD	WATER LOSS CONTROL	$1,000,000	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
MAYPEARL	N	CONSERVATION, WATER LOSS CONTROL - MAYPEARL	WATER LOSS CONTROL	$2,030	2020
MCKINNEY	N	CONSERVATION, WATER LOSS CONTROL - MCKINNEY	WATER LOSS CONTROL	$2,138,094	2020
MCLENDON-CHISHOLM	N	CONSERVATION, WATER LOSS CONTROL - MCLENDON-CHISHOLM	WATER LOSS CONTROL	$11,013	2020
MELISSA	N	CONSERVATION, WATER LOSS CONTROL - MELISSA	WATER LOSS CONTROL	$56,132	2020
MELISSA	N	MELISSA - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-75	CONVEYANCE/TRANSMISSION PIPELINE	$2,124,324	2020
M-E-N WSC	N	CONSERVATION, WATER LOSS CONTROL - M-E-N WSC	WATER LOSS CONTROL	$9,629	2020
M-E-N WSC	N	M E N WSC - UPSIZE LAKE HALBERT CONNECTION Q-166	CONVEYANCE/TRANSMISSION PIPELINE	$2,521,800	2030
MESQUITE	N	CONSERVATION, WATER LOSS CONTROL - MESQUITE	WATER LOSS CONTROL	$3,173,984	2020
MIDLOTHIAN	Y	CONSERVATION, IRRIGATION RESTRICTION - MIDLOTHIAN	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
MIDLOTHIAN	Y	CONSERVATION, WATER LOSS CONTROL - MIDLOTHIAN	WATER LOSS CONTROL	$517,036	2020
MIDLOTHIAN	Y	CONSERVATION, WATER WASTE PROHIBITION - MIDLOTHIAN	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
MIDLOTHIAN	Y	MIDLOTHIAN - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2020
MIDLOTHIAN	Y	MIDLOTHIAN - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2040
MIDLOTHIAN	Y	MIDLOTHIAN - WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$17,433,000	2060
MILFORD	N	CONSERVATION, WATER LOSS CONTROL - MILFORD	WATER LOSS CONTROL	$4,460	2020
MINERAL WELLS	Y	CONSERVATION, WATER LOSS CONTROL - MINERAL WELLS	WATER LOSS CONTROL	$13,723	2020
MINING, GRAYSON	N	GRAYSON COUNTY MINING - NEW WELL IN TRINITY AQUIFER Q-138	SINGLE WELL	$161,000	2050
MINING, KAUFMAN	N	KAUFMAN COUNTY MINING - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-156	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$4,098,000	2060
MINING, KAUFMAN	N	KAUFMAN COUNTY MINING - NEW WELLS IN TRINITY AQUIFER Q-216	MULTIPLE WELLS/WELL FIELD	$484,000	2040
MOUNT ZION WSC	N	CONSERVATION, WATER LOSS CONTROL - MOUNT ZION WSC	WATER LOSS CONTROL	$38,667	2020
MOUNTAIN PEAK SUD	N	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN PEAK SUD	WATER LOSS CONTROL	$43,492	2020
MOUNTAIN PEAK SUD	N	MOUNTAIN PEAK SUD - NEW WELL IN WOODBINE AQUIFER Q-112	SINGLE WELL	$1,812,605	2020
MOUNTAIN SPRING WSC	N	CONSERVATION, WATER LOSS CONTROL - MOUNTAIN SPRING WSC	WATER LOSS CONTROL	$11,183	2020
MUENSTER	N	CONSERVATION, WATER LOSS CONTROL - MUENSTER	WATER LOSS CONTROL	$21,182	2020
MUENSTER	N	MUENSTER - DEVELOP MUENSTER LAKE SUPPLY Q-85	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT	$8,504,000	2020
MURPHY	N	CONSERVATION, WATER LOSS CONTROL - MURPHY	WATER LOSS CONTROL	$209,452	2020
MURPHY	N	CONSERVATION, WATER WASTE PROHIBITION - MURPHY	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
MUSTANG SUD	Y	CONSERVATION, WATER LOSS CONTROL - MUSTANG SUD	WATER LOSS CONTROL	$186,398	2020
NAVARRO MILLS WSC	N	CONSERVATION, WATER LOSS CONTROL - NAVARRO MILLS WSC	WATER LOSS CONTROL	$10,706	2020
NAVARRO MILLS WSC	N	NAVARRO MILLS WSC - NEW WELL IN WOODBINE AQUIFER Q-168	SINGLE WELL	$1,339,500	2050
NEVADA	N	CONSERVATION, WATER LOSS CONTROL - NEVADA	WATER LOSS CONTROL	$1,628	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
NEW FAIRVIEW	N	CONSERVATION, WATER LOSS CONTROL - NEW FAIRVIEW	WATER LOSS CONTROL	$2,968	2020
NEW FAIRVIEW	N	NEW FAIRVIEW - CONNECT TO AND PURCHASE WATER FROM RHOME Q-202	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,662,000	2030
NEW HOPE	N	CONSERVATION, WATER LOSS CONTROL - NEW HOPE	WATER LOSS CONTROL	$3,332	2020
NEWARK	N	CONSERVATION, WATER LOSS CONTROL - NEWARK	WATER LOSS CONTROL	$3,978	2020
NEWARK	N	NEWARK - CONNECT TO AND PURCHASE WATER FROM RHOME Q-203	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$2,548,000	2030
NORTH COLLIN WSC	N	CONSERVATION, WATER LOSS CONTROL - NORTH COLLIN WSC	WATER LOSS CONTROL	$17,277	2020
NORTH HUNT SUD	N	CONSERVATION, WATER LOSS CONTROL - NORTH HUNT SUD	WATER LOSS CONTROL	$432	2020
NORTH RICHLAND HILLS	Y	CONSERVATION, WATER LOSS CONTROL - NORTH RICHLAND HILLS	WATER LOSS CONTROL	$1,781,337	2020
NORTH RICHLAND HILLS	Y	WATAUGA & N RICHLAND HILLS - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER Q-199	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$9,931,000	2020
NORTH TEXAS MWD	Y	NTMWD - ADDITIONAL LAKE TEXOMA BLEND WITH SULPHUR BASIN WATER Q-26	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$347,596,000	2060
NORTH TEXAS MWD	Y	NTMWD - ADDITIONAL LAKE TEXOMA SUPPLY BLEND WITH LOWER BOIS D'ARC Q-25	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$174,179,000	2040
NORTH TEXAS MWD	Y	NTMWD - ADDITIONAL MEASURES TO ACCESS FULL LAKE LAVON YIELD Q-21	CONVEYANCE/TRANSMISSION PIPELINE	$20,823,000	2020
NORTH TEXAS MWD	Y	NTMWD - DREDGE LAKE LAVON Q-20	DREDGE TO RECOVER CAPACITY	$1,967,000	2020
NORTH TEXAS MWD	Y	NTMWD - LOWER BOIS D'ARC CREEK RESERVOIR SITE Q-23	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$625,610,000	2020
NORTH TEXAS MWD	Y	NTMWD - MAIN STEM PUMP STATION Q-22	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$71,743,000	2020
NORTH TEXAS MWD	Y	NTMWD - OKLAHOMA WATER Q-27	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$167,541,000	2070
NORTH TEXAS MWD	Y	NTMWD - REMOVAL OF CHAPMAN SILT BARRIER Q-19	DREDGE TO RECOVER CAPACITY	$1,793,000	2020
NORTH TEXAS MWD	Y	NTMWD - TOLEDO BEND Q-57	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$1,248,461,000	2070
NORTH TEXAS MWD	Y	NTMWD & IRVING - LAKE CHAPMAN PUMP STATION EXPANSION Q-24	PUMP STATION	$25,638,000	2020
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2010-2020 Q-28	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$1,015,469,000	2020
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2020-2030 Q-28	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$1,099,314,000	2030
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2030-2040 Q-28	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$663,032,000	2040
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2040-2050 Q-28	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$704,883,000	2050
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2050-2060 Q-28	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$621,467,000	2060
NORTH TEXAS MWD	Y	NTMWD TREATMENT & TREATED WATER DISTRIBUTION IMPROVEMENTS 2060-2070 Q-28	NEW WATER TREATMENT PLANT; WATER TREATMENT PLANT EXPANSION	$166,833,000	2070
NORTH TEXAS MWD	Y	Q-150 FANNIN COUNTY WATER SUPPLY PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$45,753,900	2030
NORTH TEXAS MWD	Y	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	RAISE CONSERVATION POOL; RESERVOIR CONSTRUCTION; CONVEYANCE/TRANSMISSION PIPELINE	$1,206,634,000	2050
NORTHLAKE	N	CONSERVATION, WATER LOSS CONTROL - NORTHLAKE	WATER LOSS CONTROL	$171,715	2020
OAK GROVE	N	CONSERVATION, WATER LOSS CONTROL - OAK GROVE	WATER LOSS CONTROL	$1,272	2020
OAK LEAF	N	CONSERVATION, WATER LOSS CONTROL - OAK LEAF	WATER LOSS CONTROL	$3,857	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
OAK POINT	N	CONSERVATION, WATER LOSS CONTROL - OAK POINT	WATER LOSS CONTROL	$41,117	2020
OAKWOOD	N	CONSERVATION, WATER LOSS CONTROL - OAKWOOD	WATER LOSS CONTROL	$108	2020
OVILLA	N	CONSERVATION, WATER LOSS CONTROL - OVILLA	WATER LOSS CONTROL	$40,424	2020
OVILLA	N	OVILLA - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM DWU Q-92	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$8,136,000	2070
PALMER	N	CONSERVATION, WATER LOSS CONTROL - PALMER	WATER LOSS CONTROL	$30,952	2020
PALMER	N	PALMER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKETT SUD Q-113	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$6,628,000	2020
PALOMA CREEK	N	CONSERVATION, WATER LOSS CONTROL - PALOMA CREEK	WATER LOSS CONTROL	$110,011	2020
PANTEGO	N	CONSERVATION, WATER LOSS CONTROL - PANTEGO	WATER LOSS CONTROL	$21,919	2020
PANTEGO	N	PANTEGO - CONNECT TO AND PURCHASE WATER FROM ARLINGTON Q-192	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$778,000	2030
PANTEGO	N	PANTEGO - CONNECT TO AND PURCHASE WATER FROM FORT WORTH Q-193	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$831,000	2030
PARKER	N	CONSERVATION, WATER LOSS CONTROL - PARKER	WATER LOSS CONTROL	$119,273	2020
PARKER	N	PARKER - INCREASE PUMP STATION CAPACITY Q-76	PUMP STATION	$1,651,000	2030
PARKER COUNTY SUD	N	CONSERVATION, WATER LOSS CONTROL - PARKER COUNTY SUD	WATER LOSS CONTROL	$35,633	2020
PARKER COUNTY SUD	N	PARKER COUNTY SUD - ADDITIONAL BRA WITH TREATMENT PLANT Q-13	WATER TREATMENT PLANT EXPANSION	$6,776,000	2020
PARKER COUNTY SUD	N	PARKER COUNTY SUD - NEW WELLS IN TRINITY AQUIFER Q-172	MULTIPLE WELLS/WELL FIELD	$3,860,000	2060
PAYNE SPRINGS	N	CONSERVATION, WATER LOSS CONTROL - PAYNE SPRINGS	WATER LOSS CONTROL	$2,203	2020
PAYNE SPRINGS	N	PAYNE SPRINGS - NEW WELL IN CARRIZO-WILCOX AQUIFER Q-148	MULTIPLE WELLS/WELL FIELD	$892,000	2020
PECAN HILL	N	CONSERVATION, WATER LOSS CONTROL - PECAN HILL	WATER LOSS CONTROL	$2,168	2020
PELICAN BAY	N	CONSERVATION, WATER LOSS CONTROL - PELICAN BAY	WATER LOSS CONTROL	$10,113	2020
PELICAN BAY	N	PELICAN BAY - CONNECT TO AND PURCHASE WATER FROM AZLE (TRWD) Q-194	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$956,000	2030
PILOT POINT	N	CONSERVATION, WATER LOSS CONTROL - PILOT POINT	WATER LOSS CONTROL	$37,796	2020
PILOT POINT	N	PILOT POINT - NEW WELL IN TRINITY AQUIFER Q-106	SINGLE WELL	$865,605	2020
PLANO	N	CONSERVATION, WATER LOSS CONTROL - PLANO	WATER LOSS CONTROL	$1,689,481	2020
PONDER	N	CONSERVATION, WATER LOSS CONTROL - PONDER	WATER LOSS CONTROL	$21,028	2020
POST OAK BEND CITY	N	CONSERVATION, WATER LOSS CONTROL - POST OAK BEND CITY	WATER LOSS CONTROL	$1,726	2020
POTTSBORO	N	CONSERVATION, WATER LOSS CONTROL - POTTSBORO	WATER LOSS CONTROL	$50,227	2020
PRINCETON	Y	CONSERVATION, WATER LOSS CONTROL - PRINCETON	WATER LOSS CONTROL	$21,181	2020
PROSPER	N	CONSERVATION, WATER LOSS CONTROL - PROSPER	WATER LOSS CONTROL	$245,098	2020
PROSPER	N	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE I) Q-77	CONVEYANCE/TRANSMISSION PIPELINE	$1,878,004	2030
PROSPER	N	PROSPER - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD (PHASE II) Q-78	CONVEYANCE/TRANSMISSION PIPELINE	$1,908,104	2030
PROVIDENCE VILLAGE WCID	N	CONSERVATION, WATER LOSS CONTROL - PROVIDENCE VILLAGE WCID	WATER LOSS CONTROL	$31,785	2020
RED OAK	N	CONSERVATION, WATER LOSS CONTROL - RED OAK	WATER LOSS CONTROL	$63,535	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
RENO	N	CONSERVATION, WATER LOSS CONTROL - RENO	WATER LOSS CONTROL	$1,404	2020
RHOME	N	CONSERVATION, WATER LOSS CONTROL - RHOME	WATER LOSS CONTROL	$3,921	2020
RICE	N	CONSERVATION, WATER LOSS CONTROL - RICE	WATER LOSS CONTROL	$2,533	2020
RICE WSC	N	CONSERVATION, WATER LOSS CONTROL - RICE WSC	WATER LOSS CONTROL	$28,765	2020
RICE WSC	N	RICE WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM CORSICANA Q-114	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$6,983,000	2040
RICHARDSON	N	CONSERVATION, WATER LOSS CONTROL - RICHARDSON	WATER LOSS CONTROL	$792,858	2020
RICHLAND HILLS	N	CONSERVATION, WATER LOSS CONTROL - RICHLAND HILLS	WATER LOSS CONTROL	$143,796	2020
RIVER OAKS	N	CONSERVATION, WATER LOSS CONTROL - RIVER OAKS	WATER LOSS CONTROL	$100,337	2020
ROANOKE	N	CONSERVATION, IRRIGATION RESTRICTION - ROANOKE	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
ROANOKE	N	CONSERVATION, WATER LOSS CONTROL - ROANOKE	WATER LOSS CONTROL	$92,645	2020
ROCKETT SUD	Y	CONSERVATION, WATER LOSS CONTROL - ROCKETT SUD	WATER LOSS CONTROL	$500,000	2020
ROCKETT SUD	Y	ROCKETT SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM MIDLOTHIAN Q-115	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$11,874,000	2020
ROCKETT SUD	Y	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$25,961,000	2020
ROCKETT SUD	Y	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$25,961,000	2030
ROCKETT SUD	Y	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$25,961,000	2050
ROCKETT SUD	Y	ROCKETT SUD - WATER TREATMENT PLANT EXPANSION 4 Q-13	WATER TREATMENT PLANT EXPANSION	$25,961,000	2070
ROCKWALL	Y	CONSERVATION, WATER LOSS CONTROL - ROCKWALL	WATER LOSS CONTROL	$409,483	2020
ROCKWALL	Y	ROCKWALL - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-183	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$22,551,000	2030
ROSE HILL SUD	N	CONSERVATION, WATER LOSS CONTROL - ROSE HILL SUD	WATER LOSS CONTROL	$22,139	2020
ROWLETT	N	CONSERVATION, WATER LOSS CONTROL - ROWLETT	WATER LOSS CONTROL	$1,471,425	2020
ROWLETT	N	ROWLETT - WATER SYSTEM IMPROVEMENTS Q-214	PUMP STATION	$3,519,000	2020
ROYSE CITY	N	CONSERVATION, WATER LOSS CONTROL - ROYSE CITY	WATER LOSS CONTROL	$26,487	2020
RUNAWAY BAY	N	CONSERVATION, WATER LOSS CONTROL - RUNAWAY BAY	WATER LOSS CONTROL	$6,539	2020
RUNAWAY BAY	N	RUNAWAY BAY - INCREASE CAPACITY OF LAKE INTAKE Q-204	NEW SURFACE WATER INTAKE	$52,500	2070
RUNAWAY BAY	N	RUNAWAY BAY - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$4,078,000	2070
SACHSE	N	CONSERVATION, WATER LOSS CONTROL - SACHSE	WATER LOSS CONTROL	$516,882	2020
SAGINAW	N	CONSERVATION, WATER LOSS CONTROL - SAGINAW	WATER LOSS CONTROL	$1,000,000	2020
SANGER	N	CONSERVATION, WATER LOSS CONTROL - SANGER	WATER LOSS CONTROL	$28,949	2020
SANSOM PARK	N	CONSERVATION, WATER LOSS CONTROL - SANSOM PARK	WATER LOSS CONTROL	$14,529	2020
SARDIS-LONE ELM WSC	N	CONSERVATION, WATER LOSS CONTROL - SARDIS-LONE ELM WSC	WATER LOSS CONTROL	$126,220	2020
SARDIS-LONE ELM WSC	N	SARDIS LONE-ELM - CONNECT TO AND PURCHASE WATER FROM MIDLOTHIAN Q-117	CONVEYANCE/TRANSMISSION PIPELINE	$255,200	2020

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
SARDIS-LONE ELM WSC	N	SARDIS-LONE ELM WSC - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM ROCKE Q-118	CONVEYANCE/TRANSMISSION PIPELINE	$1,992,000	2040
SAVOY	N	CONSERVATION, WATER LOSS CONTROL - SAVOY	WATER LOSS CONTROL	$1,433	2020
SCURRY	N	CONSERVATION, WATER LOSS CONTROL - SCURRY	WATER LOSS CONTROL	$864	2020
SEAGOVILLE	Y	CONSERVATION, WATER LOSS CONTROL - SEAGOVILLE	WATER LOSS CONTROL	$76,397	2020
SEIS LAGOS UD	N	CONSERVATION, WATER LOSS CONTROL - SEIS LAGOS UD	WATER LOSS CONTROL	$150,585	2020
SEVEN POINTS	N	CONSERVATION, WATER LOSS CONTROL - SEVEN POINTS	WATER LOSS CONTROL	$8,550	2020
SHADY SHORES	N	CONSERVATION, WATER LOSS CONTROL - SHADY SHORES	WATER LOSS CONTROL	$13,964	2020
SHERMAN	Y	CONSERVATION, WATER LOSS CONTROL - SHERMAN	WATER LOSS CONTROL	$1,044,775	2020
SHERMAN	Y	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$17,328,500	2020
SHERMAN	Y	SHERMAN - DESALINATION WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$29,478,000	2070
SHERMAN	Y	SHERMAN - NEW 10 MGD DESALINATION PLANT Q-12	NEW WATER TREATMENT PLANT	$34,657,000	2050
SOUTH GRAYSON WSC	N	CONSERVATION, WATER LOSS CONTROL - SOUTH GRAYSON WSC	WATER LOSS CONTROL	$32,462	2020
SOUTHLAKE	N	CONSERVATION, WATER LOSS CONTROL - SOUTHLAKE	WATER LOSS CONTROL	$1,698,028	2020
SOUTHLAKE	N	SOUTHLAKE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM FORT WORTH Q-195	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$43,035,000	2030
SOUTHMAYD	N	CONSERVATION, WATER LOSS CONTROL - SOUTHMAYD	WATER LOSS CONTROL	$5,277	2020
SOUTHMAYD	N	SOUTHMAYD - NEW WELLS IN WOODBINE AQUIFER Q-141	MULTIPLE WELLS/WELL FIELD	$1,068,000	2070
SOUTHWEST FANNIN COUNTY SUD	N	CONSERVATION, WATER LOSS CONTROL - SOUTHWEST FANNIN COUNTY SUD	WATER LOSS CONTROL	$12,165	2020
SOUTHWEST FANNIN COUNTY SUD	N	SOUTHWEST FANNIN CO SUD - NEW WELL IN WOODBINE AQUIFER Q-130	MULTIPLE WELLS/WELL FIELD; PUMP STATION	$2,348,823	2030
SPRINGTOWN	N	CONSERVATION, WATER LOSS CONTROL - SPRINGTOWN	WATER LOSS CONTROL	$6,872	2020
SPRINGTOWN	N	SPRINGTOWN - LAKE INTAKE MODIFICATIONS Q-175	NEW SURFACE WATER INTAKE	$280,200	2020
SPRINGTOWN	N	SPRINGTOWN - NEW WELL IN TRINITY AQUIFER Q-176	MULTIPLE WELLS/WELL FIELD	$998,400	2020
ST. PAUL	N	CONSERVATION, WATER LOSS CONTROL - ST. PAUL	WATER LOSS CONTROL	$8,349	2020
STEAM ELECTRIC POWER, ELLIS	N	ELLIS COUNTY SEP - PURCHASE WATER FROM WAXAHACHIE Q-107	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$15,009,000	2040
STEAM ELECTRIC POWER, FANNIN	N	FANNIN COUNTY SEP - CONNECT TO AND PURCHASE WATER FROM LAKE TEXOMA Q-128	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$25,026,000	2030
STEAM ELECTRIC POWER, NAVARRO	N	NAVARRO COUNTY SEP - PURCHASE WATER FROM CORSICANA Q-167	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$16,331,000	2030
STEAM ELECTRIC POWER, TARRANT	N	TARRANT COUNTY SEP - DIRECT REUSE Q-196	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$13,080,000	2030
SUNNYVALE	N	CONSERVATION, WATER LOSS CONTROL - SUNNYVALE	WATER LOSS CONTROL	$169,489	2020
SUNNYVALE	N	SUNNYVALE - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-93	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$22,408,000	2020
TALTY	N	CONSERVATION, WATER LOSS CONTROL - TALTY	WATER LOSS CONTROL	$3,079	2020
TALTY WSC	N	CONSERVATION, WATER LOSS CONTROL - TALTY WSC	WATER LOSS CONTROL	$27,225	2020
TARRANT REGIONAL WD	Y	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	RAISE CONSERVATION POOL; RESERVOIR CONSTRUCTION; CONVEYANCE/TRANSMISSION PIPELINE	$3,004,413,000	2050
TARRANT REGIONAL WD	Y	TRWD - CEDAR CREEK WETLANDS REUSE Q-49	CONVEYANCE/TRANSMISSION PIPELINE	$139,078,000	2030

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
TARRANT REGIONAL WD	Y	TRWD - LAKE TEHUACANA Q-50	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$742,730,000	2040
TARRANT REGIONAL WD	Y	TRWD & DWU INTEGRATED PIPELINE Q-48	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$1,733,914,000	2030
TEAGUE	N	CONSERVATION, WATER LOSS CONTROL - TEAGUE	WATER LOSS CONTROL	$7,053	2020
TEAGUE	N	TEAGUE - NEW WELLS IN CARRIZO-WILCOX AQUIFER Q-135	SINGLE WELL	$1,145,600	2050
TERRELL	Y	CONSERVATION, WATER LOSS CONTROL - TERRELL	WATER LOSS CONTROL	$132,163	2020
TERRELL	Y	TERRELL - GROUND STORAGE TANK AND PUMP STATION EXPANSION AT WEST SIDE PUMP STATION Q-157	PUMP STATION	$3,714,000	2020
TERRELL	Y	TERRELL - LINE TO FEED WHOLE CUSTOMER (KAUFMAN CO WCID) Q-158	CONVEYANCE/TRANSMISSION PIPELINE	$1,569,100	2020
TERRELL	Y	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT EXTENSION) Q-160	CONVEYANCE/TRANSMISSION PIPELINE	$4,418,700	2020
TERRELL	Y	TERRELL - LINE TO FEED WHOLESALE CUSTOMER (FAIRFIELD DEVELOPMENT) Q-159	CONVEYANCE/TRANSMISSION PIPELINE	$1,514,500	2020
TERRELL	Y	TERRELL - LINE TO FEED WHOLESALE CUSTOMERS (LAS LOMAS MUD AND KAUFMAN CO WCID) Q-161	CONVEYANCE/TRANSMISSION PIPELINE	$1,395,100	2020
TERRELL	Y	TERRELL - LINES ALONG I-20 TO COMPLETE LOOPING IN SOUTHERN SYSTEM FOR WHOLESALE CUSTOMERS Q-162	CONVEYANCE/TRANSMISSION PIPELINE	$5,688,500	2020
TERRELL	Y	TERRELL - NEW DELIVERY POINT CONNECTION FROM NTMWD (WATERLINES, PUMP STATION, & GROUND STORAGE Q-163	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$25,559,100	2020
THE COLONY	N	CONSERVATION, WATER LOSS CONTROL - THE COLONY	WATER LOSS CONTROL	$317,769	2020
TIOGA	N	CONSERVATION, WATER LOSS CONTROL - TIOGA	WATER LOSS CONTROL	$8,424	2020
TOM BEAN	N	CONSERVATION, WATER LOSS CONTROL - TOM BEAN	WATER LOSS CONTROL	$16,765	2020
TOOL	N	CONSERVATION, WATER LOSS CONTROL - TOOL	WATER LOSS CONTROL	$13,672	2020
TRENTON	N	CONSERVATION, WATER LOSS CONTROL - TRENTON	WATER LOSS CONTROL	$6,658	2020
TRENTON	N	TRENTON - NEW WELLS IN WOODBINE AQUIFER Q-131	SINGLE WELL	$971,785	2030
TRINIDAD	N	CONSERVATION, WATER LOSS CONTROL - TRINIDAD	WATER LOSS CONTROL	$4,211	2020
TRINITY RIVER AUTHORITY	Y	TRINITY RIVER AUTHORITY DALLAS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-59	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$8,661,000	2030
TRINITY RIVER AUTHORITY	Y	TRINITY RIVER AUTHORITY ELLIS COUNTY REUSE FOR STEAM ELECTRIC POWER Q-60	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$17,958,000	2060
TRINITY RIVER AUTHORITY	Y	TRINITY RIVER AUTHORITY FREESTONE COUNTY REUSE FOR STEAM ELECTRIC POWER Q-61	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$30,593,000	2050
TRINITY RIVER AUTHORITY	Y	TRINITY RIVER AUTHORITY KAUFMAN COUNTY REUSE FOR STEAM ELECTRIC POWER Q-62	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$8,763,000	2020
TRINITY RIVER AUTHORITY	Y	TRINITY RIVER AUTHORITY LAS COLINAS REUSE (DALLAS COUNTY IRRIGATION) Q-58	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$15,017,000	2020
TROPHY CLUB	N	CONSERVATION, WATER LOSS CONTROL - TROPHY CLUB	WATER LOSS CONTROL	$338,556	2020
TROPHY CLUB	N	TROPHY CLUB - PHASE II: INCREASE DELIVERY INFRASTRUCTURE FROM FT WORTH Q-198	CONVEYANCE/TRANSMISSION PIPELINE	$7,292,600	2020
TROPHY CLUB	N	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	CONVEYANCE/TRANSMISSION PIPELINE	$2,273,000	2020
TWO WAY SUD	N	CONSERVATION, WATER LOSS CONTROL - TWO WAY SUD	WATER LOSS CONTROL	$34,470	2020
UNIVERSITY PARK	N	CONSERVATION, WATER LOSS CONTROL - UNIVERSITY PARK	WATER LOSS CONTROL	$4,000,000	2020
UPPER TRINITY REGIONAL WD	Y	SULPHUR BASIN SUPPLIES - TRWD, NTWMD, UTRWD Q-18	RAISE CONSERVATION POOL; RESERVOIR CONSTRUCTION; CONVEYANCE/TRANSMISSION PIPELINE	$305,499,000	2050
UPPER TRINITY REGIONAL WD	Y	UTRWD - DIRECT REUSE Q-53	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$13,213,000	2030

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
UPPER TRINITY REGIONAL WD	Y	UTRWD - LAKE RALPH HALL AND REUSE Q-52	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$316,160,000	2030
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2015-2019 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$52,596,000	2020
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2020-2029 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$159,420,000	2030
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2030-2040 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$139,322,721	2040
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2040-2050 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$117,667,000	2050
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2050-2060 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$110,774,000	2060
UPPER TRINITY REGIONAL WD	Y	UTRWD WTP AND TREATED WATER DISTRIBUTION SYSTEM WATER MANAGEMENT STRATEGIES 2060-2070 Q-54	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$110,774,000	2070
VALLEY VIEW	N	CONSERVATION, WATER LOSS CONTROL - VALLEY VIEW	WATER LOSS CONTROL	$755	2020
VAN ALSTYNE	N	CONSERVATION, WATER LOSS CONTROL - VAN ALSTYNE	WATER LOSS CONTROL	$35,411	2020
VAN ALSTYNE	N	VAN ALSTYNE - WATER SYSTEM IMPROVEMENTS Q-142	PUMP STATION	$2,180,800	2030
VENUS	N	CONSERVATION, WATER LOSS CONTROL - VENUS	WATER LOSS CONTROL	$740	2020
VIRGINIA HILL WSC	N	CONSERVATION, WATER LOSS CONTROL - VIRGINIA HILL WSC	WATER LOSS CONTROL	$4,442	2020
WALNUT CREEK SUD	Y	CONSERVATION, WATER LOSS CONTROL - WALNUT CREEK SUD	WATER LOSS CONTROL	$75,798	2020
WALNUT CREEK SUD	Y	WALNUT CREEK SUD - NEW 12 MGD WATER TREATMENT PLANT Q-12	NEW WATER TREATMENT PLANT	$53,337,000	2070
WALNUT CREEK SUD	Y	WALNUT CREEK SUD - NEW 6 MGD WATER TREATMENT PLANT Q-12	NEW WATER TREATMENT PLANT	$9,245,000	2030
WATAUGA	N	CONSERVATION, WATER LOSS CONTROL - WATAUGA	WATER LOSS CONTROL	$396,643	2020
WAXAHACHIE	Y	CONSERVATION, IRRIGATION RESTRICTION - WAXAHACHIE	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$8,690	2020
WAXAHACHIE	Y	CONSERVATION, WATER LOSS CONTROL - WAXAHACHIE	WATER LOSS CONTROL	$1,491,310	2020
WAXAHACHIE	Y	WAXAHACHIE - 27" RAW WATER LINE FROM IPL TO HOWARD ROAD WATER TREATMENT PLANT Q-119	CONVEYANCE/TRANSMISSION PIPELINE	$3,176,400	2030
WAXAHACHIE	Y	WAXAHACHIE - 36" RAW WATER LINE FROM IPL TO LAKE WAXAHACHIE Q-120	CONVEYANCE/TRANSMISSION PIPELINE	$1,073,400	2030
WAXAHACHIE	Y	WAXAHACHIE - 36" RAW WATER LINE FROM LAKE WAXAHACHIE TO HOWARD RD WTP Q-121	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$5,465,000	2030
WAXAHACHIE	Y	WAXAHACHIE - 48" TRWD PARALLEL SUPPLY LINE TO SOKOLL WTP Q-122	CONVEYANCE/TRANSMISSION PIPELINE	$3,510,500	2030
WAXAHACHIE	Y	WAXAHACHIE - DREDGE LAKE WAXAHACHIE Q-123	DREDGE TO RECOVER CAPACITY	$31,973,500	2030
WAXAHACHIE	Y	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$21,697,000	2030
WAXAHACHIE	Y	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$25,961,000	2050
WAXAHACHIE	Y	WAXAHACHIE - HOWARD RD. WATER TREATMENT PLANT EXPANSION 3 Q-13	WATER TREATMENT PLANT EXPANSION	$29,353,000	2070
WAXAHACHIE	Y	WAXAHACHIE - INCREASE DELIVERY INFRASTRUCTURE TO ROCKETT SUD (30" RAW WATER LINE) Q-124	CONVEYANCE/TRANSMISSION PIPELINE	$11,894,900	2030
WAXAHACHIE	Y	WAXAHACHIE - PHASE I DELIVERY INFRASTRUCTURE TO CUSTOMERS IN SOUTH ELLIS COUNTY Q-125	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$15,220,700	2030

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
WAXAHACHIE	Y	WAXAHACHIE - PHASE II DELIVERY INFRASTRUCTURE TO CUSTOMERS IN SOUTH ELLIS COUNTY Q-126	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$23,452,433	2050
WAXAHACHIE	Y	WAXAHACHIE - RAW WATER INTAKE IMPROVEMENTS AT LAKE BARDWELL Q-127	PUMP STATION	$5,168,200	2030
WEATHERFORD	Y	CONSERVATION, WATER LOSS CONTROL - WEATHERFORD	WATER LOSS CONTROL	$3,287,593	2020
WEATHERFORD	Y	CONSERVATION, WATER WASTE PROHIBITION - WEATHERFORD	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,407	2020
WEATHERFORD	Y	WEATHERFORD - DEVELOP LAKE WEATHERFORD REUSE PROJECT Q-177	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	$13,089,000	2020
WEATHERFORD	Y	WEATHERFORD - INCREASE BENBROOK PUMP STATION CAPACITY Q-178	PUMP STATION	$2,301,800	2030
WEATHERFORD	Y	WEATHERFORD - NEW 14 MGD WATER TREATMENT PLANT Q-12	NEW WATER TREATMENT PLANT	$60,521,000	2060
WEATHERFORD	Y	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$36,408,000	2040
WEATHERFORD	Y	WEATHERFORD - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$49,781,000	2070
WEST CEDAR CREEK MUD	Y	CONSERVATION, WATER LOSS CONTROL - WEST CEDAR CREEK MUD	WATER LOSS CONTROL	$54,495	2020
WEST CEDAR CREEK MUD	Y	WEST CEDAR CREEK - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$17,429,000	2050
WEST WISE SUD	N	CONSERVATION, WATER LOSS CONTROL - WEST WISE SUD	WATER LOSS CONTROL	$23,121	2020
WEST WISE SUD	N	WEST WISE SUD - WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$5,697,000	2050
WESTLAKE	N	CONSERVATION, WATER LOSS CONTROL - WESTLAKE	WATER LOSS CONTROL	$40,661	2020
WESTLAKE	N	TROPHY CLUB, WESTLAKE, FORT WORTH - PHASE I: JOINT 36" WATER DELIVERY LINE Q-197	CONVEYANCE/TRANSMISSION PIPELINE	$2,961,000	2020
WESTON	N	CONSERVATION, WATER LOSS CONTROL - WESTON	WATER LOSS CONTROL	$38,948	2020
WESTON	N	WESTON - CONNECT TO AND PURCHASE WATER FROM NTMWD Q-79	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$27,130,000	2030
WESTON	N	WESTON - NEW WELL IN WOODBINE AQUIFER Q-215	SINGLE WELL	$824,000	2020
WESTOVER HILLS	N	CONSERVATION, WATER LOSS CONTROL - WESTOVER HILLS	WATER LOSS CONTROL	$9,899	2020
WESTOVER HILLS	N	CONSERVATION, WATER WASTE PROHIBITION - WESTOVER HILLS	MUNICIPAL CONSERVATION CAPITAL COST (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS)	$7,334	2020
WESTWORTH VILLAGE	N	CONSERVATION, WATER LOSS CONTROL - WESTWORTH VILLAGE	WATER LOSS CONTROL	$11,224	2020
WHITE SETTLEMENT	N	CONSERVATION, WATER LOSS CONTROL - WHITE SETTLEMENT	WATER LOSS CONTROL	$64,606	2020
WHITESBORO	N	CONSERVATION, WATER LOSS CONTROL - WHITESBORO	WATER LOSS CONTROL	$12,279	2020
WHITEWRIGHT	N	CONSERVATION, WATER LOSS CONTROL - WHITEWRIGHT	WATER LOSS CONTROL	$11,395	2020
WILLOW PARK	N	CONSERVATION, WATER LOSS CONTROL - WILLOW PARK	WATER LOSS CONTROL	$40,117	2020
WILLOW PARK	N	EAST PARKER COUNTY - PIPELINE FROM WEATHERFORD TO ANNETTA, ANNETTA NORTH, ANNETTA SOUTH, AND W Q-171	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$588,100	2030
WILMER	N	CONSERVATION, WATER LOSS CONTROL - WILMER	WATER LOSS CONTROL	$11,495	2020
WILMER	N	WILMER - DIRECT CONNECTION TO DALLAS Q-94	CONVEYANCE/TRANSMISSION PIPELINE	$15,999,500	2040
WILMER	N	WILMER - NEW CONNECTION TO DALLAS (VIA LANCASTER) Q-95	CONVEYANCE/TRANSMISSION PIPELINE	$4,504,300	2020
WISE COUNTY WSD	Y	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 1 Q-13	WATER TREATMENT PLANT EXPANSION	$25,992,000	2020
WISE COUNTY WSD	Y	WISE COUNTY WSD - WATER TREATMENT PLANT EXPANSION 2 Q-13	WATER TREATMENT PLANT EXPANSION	$25,992,000	2050

Recommended Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
WOODBINE WSC	N	CONSERVATION, WATER LOSS CONTROL - WOODBINE WSC	WATER LOSS CONTROL	$23,732	2020
WORTHAM	N	CONSERVATION, WATER LOSS CONTROL - WORTHAM	WATER LOSS CONTROL	$6,800	2020
WYLIE	N	CONSERVATION, WATER LOSS CONTROL - WYLIE	WATER LOSS CONTROL	$1,130,695	2020
WYLIE NORTHEAST SUD	N	CONSERVATION, WATER LOSS CONTROL - WYLIE NORTHEAST SUD	WATER LOSS CONTROL	$150,000	2020
WYLIE NORTHEAST SUD	N	WYLIE NE SUD - INCREASE DELIVERY INFRASTRUCTURE TO PURCHASE ADDITIONAL WATER FROM NTMWD Q-80	CONVEYANCE/TRANSMISSION PIPELINE	$4,250,000	2020

Region C Total Recommended Capital Cost	$23,635,267,292

***Projects with a capital cost of zero are excluded from the report list.**

Alternative Projects Associated with Water Management Strategies

Project Sponsor Region: C

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
ATHENS MUNICIPAL WATER AUTHORITY	Y	ATHENS MWA NEW WELLS Q-144	MULTIPLE WELLS/WELL FIELD	$9,455,000	2020
CORSICANA	Y	CORSICANA - NAVARRO MILLS WATER TREATMENT PLANT EXPANSION Q-13	WATER TREATMENT PLANT EXPANSION	$25,951,000	2050
DALLAS	Y	DWU - CARRIZO-WILCOX GROUNDWATER Q-42	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION	$161,063,000	
DALLAS	Y	DWU - DIRECT REUSE PROJECTS Q-41	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$95,081,000	
DALLAS	Y	DWU - LAKE TEXOMA DESALINATION Q-46	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION	$1,517,474,000	
DALLAS	Y	DWU - RED RIVER OFF-CHANNEL RESERVOIR Q-44	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$852,987,000	
DALLAS	Y	DWU - SABINE CONJUNCTIVE SYSTEM OPERATIONS Q-43	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW SURFACE WATER INTAKE; RAISE CONSERVATION POOL	$795,815,000	
DALLAS	Y	DWU - TB TO WEST SYSTEM Q-45	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$2,290,065,000	
DALLAS	Y	SULPHUR BASIN STRATEGY - DALLAS & IRVING Q-17	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$1,112,715,000	
EULESS	N	EULESS - PROVIDE WATER TO DFW AIRPORT	CONVEYANCE/TRANSMISSION PIPELINE	$100,000	2020
GAINESVILLE	Y	GAINESVILLE - LAKE TEXOMA Q-83	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION	$77,940,700	
IRVING	N	IRVING - OKLAHOMA (LAKE HUGO) Q-91	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$177,686,000	
IRVING	N	IRVING - INDIRECT REUSE (ELLIS COUNTY OFF-CHANNEL RESERVOIR) Q-89	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$30,474,000	
IRVING	N	SULPHUR BASIN STRATEGY - DALLAS & IRVING Q-17	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$243,287,000	
MANUFACTURING, GRAYSON	N	GRAYSON COUNTY MANUFACTURING - DIRECT REUSE FROM SHERMAN Q-210	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$6,553,000	2020
MIDLOTHIAN	Y	MIDLOTHIAN - DIRECT POTABLE REUSE (MOUNTAIN CREEK WWTP EFFLUENT) Q-110	NEW WATER TREATMENT PLANT	$52,417,600	
MIDLOTHIAN	Y	MIDLOTHIAN - PURCHASE DUNCANVILLE'S JOE POOL YIELD Q-111	NEW SURFACE WATER INTAKE	$66,200	2020
MUENSTER	N	MUENSTER - CONNECT TO AND PURCHASE WATER FROM GAINESVILLE Q-84	CONVEYANCE/TRANSMISSION PIPELINE	$2,928,900	2020
NORTH TEXAS MWD	Y	MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD Q-16	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$1,042,498,000	
NORTH TEXAS MWD	Y	NTMWD - FREESTONE/ANDERSON COUNTY GROUNDWATER (FORESTAR) Q-31	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION	$230,043,000	
NORTH TEXAS MWD	Y	NTMWD - GEORGE PARKHOUSE RESERVOIR (NORTH) Q-32	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION; NEW SURFACE WATER INTAKE	$729,557,000	
NORTH TEXAS MWD	Y	NTMWD - GEORGE PARKHOUSE RESERVOIR (SOUTH) Q-33	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$857,396,000	
NORTH TEXAS MWD	Y	NTMWD - LAKE OF THE PINES (FROM LAKE OF THE PINES TO NEW WTP AT FARMERSVILLE) Q-29	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$361,876,000	
NORTH TEXAS MWD	Y	NTMWD - LAKE TEXOMA ALREADY AUTHORIZED WITH DESAL AT SHERMAN Q-30	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$622,592,000	
NORTH TEXAS MWD	Y	TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD Q-15	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$1,210,467,700	
ROCKETT SUD	Y	ROCKETT SUD - DIRECT CONNECTION TO DWU Q-116	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$32,773,000	
STEAM ELECTRIC POWER, GRAYSON	N	GRAYSON COUNTY STEAM ELECTRIC POWER - DIRECT REUSE FROM SHERMAN Q-211	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$15,784,000	2030
TARRANT REGIONAL WD	Y	MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD Q-16	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$2,778,879,000	
TARRANT REGIONAL WD	Y	TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD Q-15	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$3,175,289,900	

Alternative Projects Associated with Water Management Strategies

Sponsor Name	Is Sponsor a WWP?	Project Name	Project Description	Capital Cost	Online Decade
TARRANT REGIONAL WD	Y	TRWD - OKLAHOMA WATER (FROM HUGO TO EAGLE MOUNTAIN) Q-51	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$424,116,000	
UPPER TRINITY REGIONAL WD	Y	MARVIN NICHOLS ALTERNATIVE STRATEGY FOR NTMWD, TRWD, UTRWD Q-16	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION	$294,717,000	
UPPER TRINITY REGIONAL WD	Y	NTMWD - GEORGE PARKHOUSE RESERVOIR (NORTH) Q-32	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; RESERVOIR CONSTRUCTION; NEW SURFACE WATER INTAKE	$327,344,000	
UPPER TRINITY REGIONAL WD	Y	NTMWD - GEORGE PARKHOUSE RESERVOIR (SOUTH) Q-33	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	$390,980,000	
UPPER TRINITY REGIONAL WD	Y	TOLEDO BEND TO SRA UPPER BASIN, NTMWD AND TRWD Q-15	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$752,836,500	
UPPER TRINITY REGIONAL WD	Y	UTRWD - ADDITIONAL REUSE Q-56	CONVEYANCE/TRANSMISSION PIPELINE	$1,000,000	
UPPER TRINITY REGIONAL WD	Y	UTRWD - LAKE TEXOMA BLEND WITH SULPHUR BASIN WATER Q-26A	NEW SURFACE WATER INTAKE; NEW WATER RIGHT/PERMIT; PUMP STATION	$197,198,000	2060
UPPER TRINITY REGIONAL WD	Y	UTRWD - OKLAHOMA WATER (FROM HUGO TO LAKE LEWISVILLE) Q-55	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION	$103,993,000	
WILLOW PARK	N	WILLOW PARK - CONNECT TO AND PURCHASE WATER FROM FORT WORTH Q-206	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	$4,430,000	2030

Region C Total Alternative Capital Cost	**$21,005,829,500**

***Projects with a capital cost of zero are excluded from the report list.**

Source Availability

REGION C

GROUNDWATER	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
CARRIZO-WILCOX AQUIFER	FREESTONE	BRAZOS	FRESH	885	869	863	848	848	838
CARRIZO-WILCOX AQUIFER	FREESTONE	TRINITY	FRESH	4,420	4,448	4,452	4,414	4,411	4,385
CARRIZO-WILCOX AQUIFER	HENDERSON	TRINITY	FRESH	5,187	5,187	5,187	5,187	5,187	5,187
CARRIZO-WILCOX AQUIFER	NAVARRO	TRINITY	FRESH	15	15	15	15	15	15
NACATOCH AQUIFER	ELLIS	TRINITY	FRESH	20	20	20	20	20	20
NACATOCH AQUIFER	KAUFMAN	SABINE	FRESH	49	49	49	49	49	49
NACATOCH AQUIFER	KAUFMAN	TRINITY	FRESH	877	877	877	877	877	877
NACATOCH AQUIFER	NAVARRO	TRINITY	FRESH	980	980	980	980	980	980
NACATOCH AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
NACATOCH AQUIFER	ROCKWALL	TRINITY	FRESH	13	13	13	13	13	13
OTHER AQUIFER	JACK	BRAZOS	FRESH	284	284	284	284	284	284
OTHER AQUIFER	JACK	TRINITY	FRESH	650	650	650	650	650	650
OTHER AQUIFER | ALLUVIUM	FANNIN	RED	FRESH	2,919	2,919	2,919	2,919	2,919	2,919
OTHER AQUIFER | ALLUVIUM	PARKER	BRAZOS	FRESH	50	50	50	50	50	50
QUEEN CITY AQUIFER	FREESTONE	TRINITY	FRESH	0	0	0	0	0	0
QUEEN CITY AQUIFER	HENDERSON	TRINITY	FRESH	3,533	3,533	3,533	3,533	3,533	3,533
TRINITY AQUIFER	COLLIN	SABINE	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	COLLIN	TRINITY	FRESH	2,104	2,104	2,104	2,104	2,104	2,104
TRINITY AQUIFER	COOKE	RED	FRESH	1,284	1,284	1,284	1,284	1,284	1,284
TRINITY AQUIFER	COOKE	TRINITY	FRESH	5,566	5,566	5,566	5,566	5,566	5,566
TRINITY AQUIFER	DALLAS	TRINITY	FRESH	5,458	5,458	5,458	5,458	5,458	5,458
TRINITY AQUIFER	DENTON	TRINITY	FRESH	19,333	19,333	19,333	19,333	19,333	19,333
TRINITY AQUIFER	ELLIS	TRINITY	FRESH	3,959	3,959	3,959	3,959	3,959	3,959
TRINITY AQUIFER	FANNIN	RED	FRESH	617	617	617	617	617	617
TRINITY AQUIFER	FANNIN	SULPHUR	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	FANNIN	TRINITY	FRESH	83	83	83	83	83	83
TRINITY AQUIFER	GRAYSON	RED	FRESH	7,722	7,722	7,722	7,722	7,722	7,722
TRINITY AQUIFER	GRAYSON	TRINITY	FRESH	1,678	1,678	1,678	1,678	1,678	1,678
TRINITY AQUIFER	KAUFMAN	SABINE	FRESH	45	45	45	45	45	45
TRINITY AQUIFER	KAUFMAN	TRINITY	FRESH	1,136	1,136	1,136	1,136	1,136	1,136
TRINITY AQUIFER	NAVARRO	TRINITY	FRESH	1,873	1,873	1,873	1,873	1,873	1,873
TRINITY AQUIFER	PARKER	BRAZOS	FRESH	2,799	2,799	2,799	2,799	2,799	2,799
TRINITY AQUIFER	PARKER	TRINITY	FRESH	12,449	12,449	12,449	12,449	12,449	12,449
TRINITY AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	ROCKWALL	TRINITY	FRESH	958	958	958	958	958	958
TRINITY AQUIFER	TARRANT	TRINITY	FRESH	18,747	18,747	18,747	18,747	18,747	18,747
TRINITY AQUIFER	WISE	TRINITY	FRESH	9,282	9,282	9,282	9,282	9,282	9,282
WOODBINE AQUIFER	COLLIN	SABINE	FRESH	40	40	40	40	40	40
WOODBINE AQUIFER	COLLIN	TRINITY	FRESH	2,469	2,469	2,469	2,469	2,469	2,469

Source Availability

REGION C

GROUNDWATER	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
WOODBINE AQUIFER	COOKE	RED	FRESH	18	18	18	18	18	18
WOODBINE AQUIFER	COOKE	TRINITY	FRESH	136	136	136	136	136	136
WOODBINE AQUIFER	DALLAS	TRINITY	FRESH	2,313	2,313	2,313	2,313	2,313	2,313
WOODBINE AQUIFER	DENTON	TRINITY	FRESH	4,126	4,126	4,126	4,126	4,126	4,126
WOODBINE AQUIFER	ELLIS	TRINITY	FRESH	5,441	5,441	5,441	5,441	5,441	5,441
WOODBINE AQUIFER	FANNIN	RED	FRESH	2,676	2,676	2,676	2,676	2,676	2,676
WOODBINE AQUIFER	FANNIN	SULPHUR	FRESH	21	21	21	21	21	21
WOODBINE AQUIFER	FANNIN	TRINITY	FRESH	600	600	600	600	600	600
WOODBINE AQUIFER	GRAYSON	RED	FRESH	6,590	6,590	6,590	6,590	6,590	6,590
WOODBINE AQUIFER	GRAYSON	TRINITY	FRESH	5,497	5,497	5,497	5,497	5,497	5,497
WOODBINE AQUIFER	KAUFMAN	SABINE	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	KAUFMAN	TRINITY	FRESH	200	200	200	200	200	200
WOODBINE AQUIFER	NAVARRO	TRINITY	FRESH	300	300	300	300	300	300
WOODBINE AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	ROCKWALL	TRINITY	FRESH	144	144	144	144	144	144
WOODBINE AQUIFER	TARRANT	TRINITY	FRESH	632	632	632	632	632	632
	GROUNDWATER TOTAL SOURCE AVAILABILITY			**146,178**	**146,190**	**146,188**	**146,135**	**146,132**	**146,096**

REGION C

REUSE	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
DIRECT REUSE | CITY OF ANNETTA/GOLF COURSE IRRIGATION	PARKER	TRINITY	FRESH	95	95	95	95	95	95
DIRECT REUSE | CITY OF AZLE/ GOLF COURSE IRRIGATION	TARRANT	TRINITY	FRESH	300	300	300	300	300	300
DIRECT REUSE | CITY OF CRANDALL/GOLF COURSE IRRIGATION	KAUFMAN	TRINITY	FRESH	455	558	666	666	666	666
DIRECT REUSE | CITY OF DALLAS/GOLF COURSE IRRIGATION	DALLAS	TRINITY	FRESH	561	561	561	561	561	561
DIRECT REUSE | CITY OF DENTON/IRRIGATION	DENTON	TRINITY	FRESH	1,052	1,139	1,225	1,312	1,399	1,494
DIRECT REUSE | CITY OF ENNIS/SUEZ ENERGY GENERATION POWER PLANT	ELLIS	TRINITY	FRESH	909	909	909	909	909	909
DIRECT REUSE | CITY OF FORT WORTH/CITIES OF FORT WORTH, ARLINGTON, EULESS, AND DFW AIRPORT	TARRANT	TRINITY	FRESH	3,469	3,526	3,526	3,526	3,526	3,526
DIRECT REUSE | CITY OF FORT WORTH/GOLF COURSE IRRIGATION	TARRANT	TRINITY	FRESH	897	897	897	897	897	897
DIRECT REUSE | CITY OF GAINESVILLE/IRRIGATIO N	COOKE	TRINITY	FRESH	9	9	9	9	9	9
DIRECT REUSE | CITY OF GARLAND /NEXTERA ENERGY	KAUFMAN	TRINITY	FRESH	8,979	8,979	8,979	8,979	8,979	8,979

Source Availability

REGION C

REUSE	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
DIRECT REUSE | CITY OF JACKSBORO/JACK COUNTY IRRIGATION	JACK	TRINITY	FRESH	27	26	26	25	25	24
DIRECT REUSE | CITY OF LEWISVILLE/GOLF COURSE IRRIGATION	DENTON	TRINITY	FRESH	897	897	897	897	897	897
DIRECT REUSE | CITY OF THE COLONY/GOLF COURSE IRRIGATION	COLLIN	TRINITY	FRESH	457	457	457	457	457	457
DIRECT REUSE | CITY OF WEATHERFORD/GOLF COURSE IRRIGATION	PARKER	TRINITY	FRESH	13	13	13	13	13	13
DIRECT REUSE | COUNTRY CLUB WSC/ GOLF COURSE IRRIGATION	KAUFMAN	TRINITY	FRESH	92	92	92	92	92	92
DIRECT REUSE | MILLSAP ISD/IRRIGATION	PARKER	TRINITY	FRESH	2	2	2	2	2	2
DIRECT REUSE | MINING	WISE	TRINITY	FRESH	6,261	6,261	6,348	7,495	8,477	10,098
DIRECT REUSE | NTMWD/CITY OF FRISCO	COLLIN	TRINITY	FRESH	307	307	307	307	307	307
DIRECT REUSE | NTMWD/GOLF COURSE IRRIGATION	ROCKWALL	TRINITY	FRESH	672	672	672	672	672	672
DIRECT REUSE | NTMWD/GOLF COURSE IRRIGRATION	COLLIN	TRINITY	FRESH	1,540	1,540	1,540	1,540	1,540	1,540
DIRECT REUSE | PINNACLE CLUB WWTP/PINNACLE CLUB GOLF COURSE	HENDERSON	TRINITY	FRESH	32	32	32	32	32	32
DIRECT REUSE | TRA/SOUTH CREEK RANCH IRRIGATION	DALLAS	TRINITY	FRESH	125	125	125	125	125	125
DIRECT REUSE | TROPHY CLUB MUD #1/GOLF COURSE IRRIGATION	DENTON	TRINITY	FRESH	800	800	800	800	800	800
INDIRECT REUSE | CITY OF DENTON/LAKE LEWISVILLE	DENTON	TRINITY	FRESH	6,775	8,729	10,922	12,953	12,818	12,683
INDIRECT REUSE | CITY OF GRAPEVINE/LAKE GRAPEVINE	TARRANT	TRINITY	FRESH	3,311	3,677	3,716	3,701	3,698	3,698
INDIRECT REUSE | DWU/LAKE LEWISVILLE	DENTON	TRINITY	FRESH	32,550	38,223	41,048	55,000	73,091	87,511
INDIRECT REUSE | NTMWD/ LAKE LAVON	COLLIN	TRINITY	FRESH	47,418	56,386	63,785	71,882	71,882	71,882
INDIRECT REUSE | NTMWD/LAKE RAY HUBBARD	DALLAS	TRINITY	FRESH	47,802	62,977	75,524	87,291	97,655	102,897
INDIRECT REUSE | TRA/CDURD LAS COLINAS	DALLAS	TRINITY	FRESH	8,000	8,000	8,000	8,000	8,000	8,000
INDIRECT REUSE | TRA/LAKE BARDWELL	ELLIS	TRINITY	FRESH	3,479	3,882	4,614	5,129	5,129	5,129
INDIRECT REUSE | TRWD/RICHLAND-CHAMBERS RESERVOIR	NAVARRO	TRINITY	FRESH	100,465	100,465	100,465	100,465	100,465	100,465
			REUSE TOTAL SOURCE AVAILABILITY	**277,751**	**310,536**	**336,552**	**374,132**	**403,518**	**424,760**

Source Availability

REGION C

SURFACE WATER	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
BARDWELL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	9,600	9,295	8,863	8,432	8,000	7,931
BONHAM LAKE/RESERVOIR	RESERVOIR	RED	FRESH	5,340	5,340	5,340	5,340	5,340	5,340
BRAZOS LIVESTOCK LOCAL SUPPLY	FREESTONE	BRAZOS	FRESH	83	83	83	83	83	83
BRAZOS LIVESTOCK LOCAL SUPPLY	JACK	BRAZOS	FRESH	231	231	231	231	231	231
BRAZOS LIVESTOCK LOCAL SUPPLY	PARKER	BRAZOS	FRESH	903	903	903	903	903	903
BRAZOS OTHER LOCAL SUPPLY	PARKER	BRAZOS	FRESH	14	14	14	14	14	14
BRAZOS RUN-OF-RIVER	PARKER	BRAZOS	FRESH	117	117	117	117	117	117
BRYSON LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	0	0	0	0	0	0
CLARK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	210	210	210	210	210	210
FAIRFIELD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	870	870	870	870	870	870
FOREST GROVE LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	8,653	8,590	8,527	8,463	8,400	8,337
GRAPEVINE LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	18,883	18,700	18,517	18,333	18,150	17,967
HALBERT LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
HUBERT H MOSS LAKE/RESERVOIR	RESERVOIR	RED	FRESH	7,410	7,410	7,410	7,410	7,410	7,41[illegible]
JOE POOL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	14,883	14,575	14,267	13,958	13,650	13,342
LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	RESERVOIR	TRINITY	FRESH	86,500	85,900	85,300	84,700	84,100	83,500
LEWISVILLE LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	7,817	7,715	7,613	7,512	7,410	7,308
LOST CREEK-JACKSBORO LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	1,597	1,597	1,597	1,597	1,597	1,597
MINERAL WELLS LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	2,495	2,483	2,470	2,458	2,445	2,433
MOUNTAIN CREEK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	6,400	6,400	6,400	6,400	6,400	6,400
MUENSTER LAKE/RESERVOIR	RESERVOIR	RED	FRESH	300	300	300	300	300	300
NAVARRO MILLS LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	18,333	17,325	16,317	15,308	14,300	13,292
RANDELL LAKE/RESERVOIR	RESERVOIR	RED	FRESH	1,400	1,400	1,400	1,400	1,400	1,400
RAY HUBBARD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	56,113	54,800	53,487	52,173	50,860	49,547
RAY ROBERTS LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	18,902	18,733	18,564	18,395	18,226	18,057

Source Availability

REGION C

SURFACE WATER	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
				2020	2030	2040	2050	2060	2070
RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	191,532	190,464	189,396	188,327	187,259	186,191
RED LIVESTOCK LOCAL SUPPLY	COOKE	RED	FRESH	380	380	380	380	380	380
RED LIVESTOCK LOCAL SUPPLY	FANNIN	RED	FRESH	973	973	973	973	973	973
RED LIVESTOCK LOCAL SUPPLY	GRAYSON	RED	FRESH	687	687	687	687	687	687
RED OTHER LOCAL SUPPLY	COOKE	RED	FRESH	77	77	77	77	77	77
RED RUN-OF-RIVER	COOKE	RED	FRESH	0	0	0	0	0	0
RED RUN-OF-RIVER	FANNIN	RED	FRESH	4,705	4,705	4,705	4,705	4,705	4,705
RED RUN-OF-RIVER	GRAYSON	RED	FRESH	1,121	1,121	1,121	1,121	1,121	1,121
RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	13,863	13,855	13,847	13,838	13,830	13,822
SABINE LIVESTOCK LOCAL SUPPLY	COLLIN	SABINE	FRESH	31	31	31	31	31	31
SABINE LIVESTOCK LOCAL SUPPLY	KAUFMAN	SABINE	FRESH	98	98	98	98	98	98
SABINE LIVESTOCK LOCAL SUPPLY	ROCKWALL	SABINE	FRESH	58	58	58	58	58	58
SABINE OTHER LOCAL SUPPLY	ROCKWALL	SABINE	FRESH	33	33	33	33	33	33
SULPHUR LIVESTOCK LOCAL SUPPLY	FANNIN	SULPHUR	FRESH	272	272	272	272	272	272
SULPHUR RUN-OF-RIVER	FANNIN	SULPHUR	FRESH	49	49	49	49	49	49
TEAGUE CITY LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	189	189	189	189	189	189
TERRELL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	2,267	2,250	2,233	2,217	2,200	2,183
TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	RED	FRESH	126,250	126,250	126,250	126,250	126,250	126,250
TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	RESERVOIR	RED	FRESH	190,300	190,300	190,300	190,300	190,300	190,300
TRINIDAD CITY LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	450	450	450	450	450	450
TRINIDAD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	3,050	3,050	3,050	3,050	3,050	3,050
TRINITY LIVESTOCK LOCAL SUPPLY	COLLIN	TRINITY	FRESH	971	971	971	971	971	971
TRINITY LIVESTOCK LOCAL SUPPLY	COOKE	TRINITY	FRESH	807	807	807	807	807	807
TRINITY LIVESTOCK LOCAL SUPPLY	DALLAS	TRINITY	FRESH	198	198	198	198	198	198
TRINITY LIVESTOCK LOCAL SUPPLY	DENTON	TRINITY	FRESH	622	622	622	622	622	622
TRINITY LIVESTOCK LOCAL SUPPLY	ELLIS	TRINITY	FRESH	1,112	1,112	1,112	1,112	1,112	1,112
TRINITY LIVESTOCK LOCAL SUPPLY	FANNIN	TRINITY	FRESH	61	61	61	61	61	61

Source Availability

REGION C									
SURFACE WATER	COUNTY	BASIN	SALINITY	SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
				2020	2030	2040	2050	2060	2070
TRINITY LIVESTOCK LOCAL SUPPLY	FREESTONE	TRINITY	FRESH	960	960	960	960	960	960
TRINITY LIVESTOCK LOCAL SUPPLY	GRAYSON	TRINITY	FRESH	388	388	388	388	388	388
TRINITY LIVESTOCK LOCAL SUPPLY	HENDERSON	TRINITY	FRESH	341	341	341	341	341	341
TRINITY LIVESTOCK LOCAL SUPPLY	JACK	TRINITY	FRESH	571	571	571	571	571	571
TRINITY LIVESTOCK LOCAL SUPPLY	KAUFMAN	TRINITY	FRESH	1,524	1,524	1,524	1,524	1,524	1,524
TRINITY LIVESTOCK LOCAL SUPPLY	NAVARRO	TRINITY	FRESH	1,603	1,603	1,603	1,603	1,603	1,603
TRINITY LIVESTOCK LOCAL SUPPLY	PARKER	TRINITY	FRESH	1,019	1,019	1,019	1,019	1,019	1,019
TRINITY LIVESTOCK LOCAL SUPPLY	ROCKWALL	TRINITY	FRESH	59	59	59	59	59	59
TRINITY LIVESTOCK LOCAL SUPPLY	TARRANT	TRINITY	FRESH	442	442	442	442	442	442
TRINITY LIVESTOCK LOCAL SUPPLY	WISE	TRINITY	FRESH	1,117	1,117	1,117	1,117	1,117	1,117
TRINITY OTHER LOCAL SUPPLY	COLLIN	TRINITY	FRESH	195	195	195	195	195	195
TRINITY OTHER LOCAL SUPPLY	COOKE	TRINITY	FRESH	160	160	160	160	160	160
TRINITY OTHER LOCAL SUPPLY	DALLAS	TRINITY	FRESH	1,525	1,525	1,525	1,525	1,525	1,525
TRINITY OTHER LOCAL SUPPLY	DENTON	TRINITY	FRESH	103	103	103	103	103	103
TRINITY OTHER LOCAL SUPPLY	FREESTONE	TRINITY	FRESH	120	120	120	120	120	120
TRINITY OTHER LOCAL SUPPLY	JACK	TRINITY	FRESH	370	370	370	370	370	370
TRINITY OTHER LOCAL SUPPLY	KAUFMAN	TRINITY	FRESH	86	86	86	86	86	86
TRINITY OTHER LOCAL SUPPLY	PARKER	TRINITY	FRESH	6	6	6	6	6	6
TRINITY OTHER LOCAL SUPPLY	TARRANT	TRINITY	FRESH	342	342	342	342	342	342
TRINITY RUN-OF-RIVER	COLLIN	TRINITY	FRESH	408	408	408	408	408	408
TRINITY RUN-OF-RIVER	DALLAS	TRINITY	FRESH	1,159	1,159	1,159	1,159	1,159	1,159
TRINITY RUN-OF-RIVER	ELLIS	TRINITY	FRESH	3	3	3	3	3	3
TRINITY RUN-OF-RIVER	FREESTONE	TRINITY	FRESH	128	128	128	128	128	128
TRINITY RUN-OF-RIVER	HENDERSON	TRINITY	FRESH	415	415	415	415	415	415
TRINITY RUN-OF-RIVER	JACK	TRINITY	FRESH	110	110	110	110	110	110
TRINITY RUN-OF-RIVER	KAUFMAN	TRINITY	FRESH	64	64	64	64	64	64
TRINITY RUN-OF-RIVER	NAVARRO	TRINITY	FRESH	478	478	478	478	478	478
TRINITY RUN-OF-RIVER	PARKER	TRINITY	FRESH	155	155	155	155	155	155
TRINITY RUN-OF-RIVER	TARRANT	TRINITY	FRESH	1,508	1,508	1,508	1,508	1,508	1,508
TRINITY RUN-OF-RIVER	WISE	TRINITY	FRESH	272	272	272	272	272	272
TRWD LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	455,508	449,125	442,742	436,358	429,975	423,592

Source Availability

REGION C									
				SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
SURFACE WATER	COUNTY	BASIN	SALINITY	2020	2030	2040	2050	2060	2070
WAXAHACHIE LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	2,800	2,695	2,590	2,485	2,380	2,275
WEATHERFORD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	2,923	2,880	2,837	2,793	2,750	2,707
WHITE ROCK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	3,200	2,900	2,600	2,300	2,000	1,700
SURFACE WATER TOTAL SOURCE AVAILABILITY				**1,287,272**	**1,275,285**	**1,263,170**	**1,251,050**	**1,238,935**	**1,227,184**
REGION C TOTAL SOURCE AVAILABILITY				**1,711,201**	**1,732,011**	**1,745,910**	**1,771,317**	**1,788,585**	**1,798,040**

Source Water Balance (Availability- WUG Supply)

REGION C									
				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
GROUNDWATER	COUNTY	BASIN	SALINITY	2020	2030	2040	2050	2060	2070
CARRIZO-WILCOX AQUIFER	FREESTONE	BRAZOS	FRESH	333	345	343	290	287	251
CARRIZO-WILCOX AQUIFER	FREESTONE	TRINITY	FRESH	0	0	0	0	52	152
CARRIZO-WILCOX AQUIFER	HENDERSON	TRINITY	FRESH	1,747	1,724	1,559	1,319	1,098	1,014
CARRIZO-WILCOX AQUIFER	NAVARRO	TRINITY	FRESH	0	0	0	0	0	0
NACATOCH AQUIFER	ELLIS	TRINITY	FRESH	20	20	20	20	20	20
NACATOCH AQUIFER	KAUFMAN	SABINE	FRESH	0	0	0	0	0	0
NACATOCH AQUIFER	KAUFMAN	TRINITY	FRESH	1	1	1	1	1	1
NACATOCH AQUIFER	NAVARRO	TRINITY	FRESH	0	0	0	0	0	0
NACATOCH AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
NACATOCH AQUIFER	ROCKWALL	TRINITY	FRESH	13	13	13	13	13	13
OTHER AQUIFER	JACK	BRAZOS	FRESH	0	0	0	0	0	0
OTHER AQUIFER	JACK	TRINITY	FRESH	0	0	0	0	0	0
OTHER AQUIFER | ALLUVIUM	FANNIN	RED	FRESH	0	0	0	0	0	0
OTHER AQUIFER | ALLUVIUM	PARKER	BRAZOS	FRESH	0	0	0	0	0	0
QUEEN CITY AQUIFER	FREESTONE	TRINITY	FRESH	0	0	0	0	0	0
QUEEN CITY AQUIFER	HENDERSON	TRINITY	FRESH	3,033	3,033	3,033	3,033	3,033	3,033
TRINITY AQUIFER	COLLIN	SABINE	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	COLLIN	TRINITY	FRESH	59	59	59	59	59	59
TRINITY AQUIFER	COOKE	RED	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	COOKE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	DALLAS	TRINITY	FRESH	2,348	2,348	2,348	2,348	2,348	2,348
TRINITY AQUIFER	DENTON	TRINITY	FRESH	3,821	4,421	4,421	4,421	4,421	4,421
TRINITY AQUIFER	ELLIS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	FANNIN	RED	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	FANNIN	SULPHUR	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	FANNIN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	GRAYSON	RED	FRESH	1,221	1,221	1,221	1,221	1,221	1,221
TRINITY AQUIFER	GRAYSON	TRINITY	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	KAUFMAN	SABINE	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	KAUFMAN	TRINITY	FRESH	344	344	344	344	344	344
TRINITY AQUIFER	NAVARRO	TRINITY	FRESH	573	573	573	573	573	573
TRINITY AQUIFER	PARKER	BRAZOS	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	PARKER	TRINITY	FRESH	1,565	1,485	1,404	1,396	1,396	1,396
TRINITY AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
TRINITY AQUIFER	ROCKWALL	TRINITY	FRESH	958	958	958	958	958	958
TRINITY AQUIFER	TARRANT	TRINITY	FRESH	3,620	3,620	3,620	3,620	3,620	3,620
TRINITY AQUIFER	WISE	TRINITY	FRESH	1,923	1,923	1,923	1,923	1,923	1,923
WOODBINE AQUIFER	COLLIN	SABINE	FRESH	40	40	40	40	40	40
WOODBINE AQUIFER	COLLIN	TRINITY	FRESH	389	389	389	389	389	389

Source Water Balance (Availability- WUG Supply)

REGION C

GROUNDWATER	COUNTY	BASIN	SALINITY	SOURCE WATER BALANCE (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
WOODBINE AQUIFER	COOKE	RED	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	COOKE	TRINITY	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	DENTON	TRINITY	FRESH	2,001	2,001	2,001	2,001	2,001	2,001
WOODBINE AQUIFER	ELLIS	TRINITY	FRESH	7	12	17	22	26	26
WOODBINE AQUIFER	FANNIN	RED	FRESH	77	77	77	77	77	77
WOODBINE AQUIFER	FANNIN	SULPHUR	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	FANNIN	TRINITY	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	GRAYSON	RED	FRESH	1,228	1,228	1,228	1,228	1,228	1,228
WOODBINE AQUIFER	GRAYSON	TRINITY	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	KAUFMAN	SABINE	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	NAVARRO	TRINITY	FRESH	79	79	79	79	79	79
WOODBINE AQUIFER	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
WOODBINE AQUIFER	ROCKWALL	TRINITY	FRESH	144	144	144	144	144	144
WOODBINE AQUIFER	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
GROUNDWATER TOTAL SOURCE WATER BALANCE				**25,544**	**26,058**	**25,815**	**25,519**	**25,351**	**25,331**

REGION C

REUSE	COUNTY	BASIN	SALINITY	SOURCE WATER BALANCE (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
DIRECT REUSE | CITY OF ANNETTA/GOLF COURSE IRRIGATION	PARKER	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF AZLE/ GOLF COURSE IRRIGATION	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF CRANDALL/GOLF COURSE IRRIGATION	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF DALLAS/GOLF COURSE IRRIGATION	DALLAS	TRINITY	FRESH	71	71	71	71	71	71
DIRECT REUSE | CITY OF DENTON/IRRIGATION	DENTON	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF ENNIS/SUEZ ENERGY GENERATION POWER PLANT	ELLIS	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF FORT WORTH/CITIES OF FORT WORTH, ARLINGTON, EULESS, AND DFW AIRPORT	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF FORT WORTH/GOLF COURSE IRRIGATION	TARRANT	TRINITY	FRESH	897	897	897	897	897	897
DIRECT REUSE | CITY OF GAINESVILLE/IRRIGATIO N	COOKE	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF GARLAND /NEXTERA ENERGY	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0

Source Water Balance (Availability- WUG Supply)

REGION C

REUSE	COUNTY	BASIN	SALINITY	SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
				2020	2030	2040	2050	2060	2070
DIRECT REUSE | CITY OF JACKSBORO/JACK COUNTY IRRIGATION	JACK	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF LEWISVILLE/GOLF COURSE IRRIGATION	DENTON	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF THE COLONY/GOLF COURSE IRRIGATION	COLLIN	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | CITY OF WEATHERFORD/GOLF COURSE IRRIGATION	PARKER	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | COUNTRY CLUB WSC/ GOLF COURSE IRRIGATION	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | MILLSAP ISD/IRRIGATION	PARKER	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | MINING	WISE	TRINITY	FRESH	0	0	87	1,234	2,401	4,022
DIRECT REUSE | NTMWD/CITY OF FRISCO	COLLIN	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | NTMWD/GOLF COURSE IRRIGATION	ROCKWALL	TRINITY	FRESH	575	575	575	575	575	575
DIRECT REUSE | NTMWD/GOLF COURSE IRRIGRATION	COLLIN	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | PINNACLE CLUB WWTP/PINNACLE CLUB GOLF COURSE	HENDERSON	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | TRA/SOUTH CREEK RANCH IRRIGATION	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
DIRECT REUSE | TROPHY CLUB MUD #1/GOLF COURSE IRRIGATION	DENTON	TRINITY	FRESH	800	800	800	800	800	800
INDIRECT REUSE | CITY OF DENTON/LAKE LEWISVILLE	DENTON	TRINITY	FRESH	6,590	8,273	10,195	11,956	11,550	11,144
INDIRECT REUSE | CITY OF GRAPEVINE/LAKE GRAPEVINE	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
INDIRECT REUSE | DWU/LAKE LEWISVILLE	DENTON	TRINITY	FRESH	346	583	1,106	2,361	5,554	8,451
INDIRECT REUSE | NTMWD/ LAKE LAVON	COLLIN	TRINITY	FRESH	1,963	3,030	4,385	5,980	6,969	7,689
INDIRECT REUSE | NTMWD/LAKE RAY HUBBARD	DALLAS	TRINITY	FRESH	1,972	3,388	5,190	7,264	9,469	11,007
INDIRECT REUSE | TRA/CDURD LAS COLINAS	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
INDIRECT REUSE | TRA/LAKE BARDWELL	ELLIS	TRINITY	FRESH	166	242	455	593	471	413
INDIRECT REUSE | TRWD/RICHLAND-CHAMBERS RESERVOIR	NAVARRO	TRINITY	FRESH	38,634	34,734	30,834	26,934	23,034	19,134
REUSE TOTAL SOURCE WATER BALANCE				**52,014**	**52,593**	**54,595**	**58,665**	**61,791**	**64,203**

Source Water Balance (Availability- WUG Supply)

REGION C

SURFACE WATER	COUNTY	BASIN	SALINITY	SOURCE WATER BALANCE (ACRE-FEET PER YEAR) 2020	2030	2040	2050	2060	2070
BARDWELL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	288	338	466	509	398	354
BONHAM LAKE/RESERVOIR	RESERVOIR	RED	FRESH	2,829	2,145	2,145	2,145	2,145	2,145
BRAZOS LIVESTOCK LOCAL SUPPLY	FREESTONE	BRAZOS	FRESH	0	0	0	0	0	0
BRAZOS LIVESTOCK LOCAL SUPPLY	JACK	BRAZOS	FRESH	0	0	0	0	0	0
BRAZOS LIVESTOCK LOCAL SUPPLY	PARKER	BRAZOS	FRESH	0	0	0	0	0	0
BRAZOS OTHER LOCAL SUPPLY	PARKER	BRAZOS	FRESH	0	0	0	0	0	0
BRAZOS RUN-OF-RIVER	PARKER	BRAZOS	FRESH	0	0	0	0	0	0
BRYSON LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	0	0	0	0	0	0
CLARK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	210	210	210	210	210	210
FAIRFIELD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
FOREST GROVE LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	8,653	8,590	8,527	8,463	8,400	8,337
GRAPEVINE LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	5,319	5,230	5,182	5,133	5,032	4,921
HALBERT LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
HUBERT H MOSS LAKE/RESERVOIR	RESERVOIR	RED	FRESH	6,668	6,574	6,621	6,378	5,531	5,253
JOE POOL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	8,971	8,755	8,555	8,367	8,181	7,994
LAVON LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	RESERVOIR	TRINITY	FRESH	3,575	4,636	5,873	7,064	8,156	8,925
LEWISVILLE LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
LOST CREEK-JACKSBORO LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	863	863	863	863	863	863
MINERAL WELLS LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	2,495	2,483	2,470	2,458	2,445	2,433
MOUNTAIN CREEK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
MUENSTER LAKE/RESERVOIR	RESERVOIR	RED	FRESH	300	300	300	300	300	300
NAVARRO MILLS LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	8,781	10,648	9,638	8,630	7,621	6,615
RANDELL LAKE/RESERVOIR	RESERVOIR	RED	FRESH	0	0	0	0	0	0
RAY HUBBARD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	524	741	1,295	2,025	3,502	4,347
RAY ROBERTS LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0

Source Water Balance (Availability- WUG Supply)

REGION C									
				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
SURFACE WATER	COUNTY	BASIN	SALINITY	2020	2030	2040	2050	2060	2070
RAY ROBERTS-LEWISVILLE-GRAPEVINE LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	21,239	28,587	35,392	44,348	50,757	54,446
RED LIVESTOCK LOCAL SUPPLY	COOKE	RED	FRESH	0	0	0	0	0	0
RED LIVESTOCK LOCAL SUPPLY	FANNIN	RED	FRESH	0	0	0	0	0	0
RED LIVESTOCK LOCAL SUPPLY	GRAYSON	RED	FRESH	0	0	0	0	0	0
RED OTHER LOCAL SUPPLY	COOKE	RED	FRESH	77	77	77	77	77	77
RED RUN-OF-RIVER	COOKE	RED	FRESH	0	0	0	0	0	0
RED RUN-OF-RIVER	FANNIN	RED	FRESH	0	0	0	0	0	0
RED RUN-OF-RIVER	GRAYSON	RED	FRESH	0	0	0	0	0	0
RICHLAND CHAMBERS LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	TRINITY	FRESH	11,952	12,520	12,512	12,503	12,495	12,487
SABINE LIVESTOCK LOCAL SUPPLY	COLLIN	SABINE	FRESH	0	0	0	0	0	0
SABINE LIVESTOCK LOCAL SUPPLY	KAUFMAN	SABINE	FRESH	0	0	0	0	0	0
SABINE LIVESTOCK LOCAL SUPPLY	ROCKWALL	SABINE	FRESH	0	0	0	0	0	0
SABINE OTHER LOCAL SUPPLY	ROCKWALL	SABINE	FRESH	33	33	33	33	33	33
SULPHUR LIVESTOCK LOCAL SUPPLY	FANNIN	SULPHUR	FRESH	0	0	0	0	0	0
SULPHUR RUN-OF-RIVER	FANNIN	SULPHUR	FRESH	0	0	0	0	0	0
TEAGUE CITY LAKE/RESERVOIR	RESERVOIR	BRAZOS	FRESH	189	189	189	189	189	189
TERRELL LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	2,267	2,250	2,233	2,217	2,200	2,183
TEXOMA LAKE/RESERVOIR NON-SYSTEM PORTION	RESERVOIR	RED	FRESH	92,938	92,986	93,123	93,305	93,565	93,341
TEXOMA LAKE/RESERVOIR NORTH TEXAS MWD SYSTEM	RESERVOIR	RED	FRESH	122,596	123,475	124,531	125,552	126,522	127,236
TRINIDAD CITY LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
TRINIDAD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	COLLIN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	COOKE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	DENTON	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	ELLIS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	FANNIN	TRINITY	FRESH	0	0	0	0	0	0

Source Water Balance (Availability- WUG Supply)

REGION C

SURFACE WATER	COUNTY	BASIN	SALINITY	SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
				2020	2030	2040	2050	2060	2070
TRINITY LIVESTOCK LOCAL SUPPLY	FREESTONE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	GRAYSON	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	HENDERSON	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	JACK	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	NAVARRO	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	PARKER	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	ROCKWALL	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
TRINITY LIVESTOCK LOCAL SUPPLY	WISE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	COLLIN	TRINITY	FRESH	195	195	195	195	195	195
TRINITY OTHER LOCAL SUPPLY	COOKE	TRINITY	FRESH	160	160	160	160	160	160
TRINITY OTHER LOCAL SUPPLY	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	DENTON	TRINITY	FRESH	103	103	103	103	103	103
TRINITY OTHER LOCAL SUPPLY	FREESTONE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	JACK	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	PARKER	TRINITY	FRESH	0	0	0	0	0	0
TRINITY OTHER LOCAL SUPPLY	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	COLLIN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	DALLAS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	ELLIS	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	FREESTONE	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	HENDERSON	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	JACK	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	KAUFMAN	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	NAVARRO	TRINITY	FRESH	252	252	252	252	252	252
TRINITY RUN-OF-RIVER	PARKER	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	TARRANT	TRINITY	FRESH	0	0	0	0	0	0
TRINITY RUN-OF-RIVER	WISE	TRINITY	FRESH	0	0	0	0	0	0
TRWD LAKE/RESERVOIR SYSTEM	RESERVOIR	TRINITY	FRESH	54,284	55,088	64,913	65,471	68,228	71,328

Source Water Balance (Availability- WUG Supply)

REGION C									
				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
SURFACE WATER	COUNTY	BASIN	SALINITY	2020	2030	2040	2050	2060	2070
WAXAHACHIE LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	135	169	255	287	218	183
WEATHERFORD LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	0	0	0	1	0	0
WHITE ROCK LAKE/RESERVOIR	RESERVOIR	TRINITY	FRESH	3,200	2,900	2,600	2,300	2,000	1,700
SURFACE WATER TOTAL SOURCE WATER BALANCE				**359,096**	**370,497**	**388,713**	**399,538**	**409,778**	**416,610**
REGION C TOTAL SOURCE WATER BALANCE				**436,654**	**449,148**	**469,123**	**483,722**	**496,920**	**506,144**

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
ABLES SPRINGS WSC	1.0	1.0	1.0	1.0	1.0	1.0
ADDISON	1.0	1.0	1.0	1.0	1.0	1.0
ALEDO	1.3	1.2	1.1	1.1	1.2	1.2
ALLEN	1.0	1.0	1.0	1.0	1.0	1.0
ALVORD	1.4	1.2	1.0	1.0	1.0	1.0
ANNA	1.0	1.0	1.0	1.0	1.0	1.0
ANNETTA	2.3	2.1	1.8	1.6	1.7	1.8
ANNETTA NORTH	1.5	1.4	1.4	1.4	1.4	1.4
ANNETTA SOUTH	1.1	1.2	1.3	1.4	1.5	1.6
ARGYLE	1.0	1.0	1.0	1.0	1.1	1.1
ARGYLE WSC	1.1	1.1	1.1	1.2	1.2	1.2
ARLINGTON	1.0	1.0	1.0	1.0	1.0	1.0
ATHENS	1.2	1.2	1.2	1.2	1.0	0.8
AUBREY	1.0	1.0	1.0	1.0	1.0	1.0
AURORA	1.0	1.0	1.0	1.0	1.0	1.0
AZLE	1.0	1.0	1.0	1.0	1.0	1.0
BALCH SPRINGS	1.0	1.0	1.0	1.0	1.0	1.0
BARDWELL	1.0	1.0	1.0	1.1	1.1	1.6
BARTONVILLE	1.0	1.0	1.0	1.0	1.1	1.1
BEDFORD	1.1	1.0	1.0	1.0	1.0	1.0
BELLS	1.0	1.7	1.7	1.6	1.2	1.2
BENBROOK	1.0	1.1	1.1	1.1	1.0	1.0
BLACKLAND WSC	1.0	1.0	1.0	1.0	1.0	1.0
BLOOMING GROVE	2.1	2.0	1.9	1.8	1.8	1.7
BLUE MOUND	1.0	1.1	1.1	1.2	1.2	1.2
BLUE RIDGE	1.0	1.1	1.1	1.0	1.0	1.0
BOLIVAR WSC	1.0	1.1	1.2	1.2	1.2	1.2
BONHAM	1.0	1.0	1.0	1.0	1.0	1.0
BOYD	1.0	1.0	1.0	1.0	1.0	1.0
BRIDGEPORT	1.0	1.0	1.0	1.1	1.2	1.2
BRYSON	1.2	1.2	1.2	1.1	1.1	1.1
BUENA VISTA - BETHEL SUD	1.4	1.1	1.0	1.0	1.1	1.0
CARROLLTON	1.0	1.0	1.0	1.0	1.0	1.0
CEDAR HILL	1.0	1.0	1.0	1.0	1.0	1.0
CELINA	1.0	1.0	1.0	1.0	1.0	1.1
CHATFIELD WSC	1.3	1.3	1.3	1.3	1.3	1.3
CHICO	1.0	1.0	1.0	1.0	1.0	1.0
COCKRELL HILL	1.0	1.0	1.0	1.0	1.0	1.0
COLLEGE MOUND WSC	1.0	1.0	1.0	1.0	1.0	1.0
COLLEYVILLE	1.0	1.0	1.0	1.0	1.0	1.0
COLLINSVILLE	1.0	1.0	1.0	1.0	1.0	1.0
COMBINE	1.0	1.0	1.0	1.0	1.0	1.0
COMMUNITY WSC	1.0	1.0	1.0	1.0	1.0	1.0
COPEVILLE SUD	1.0	1.0	1.0	1.0	1.0	1.0
COPPELL	1.0	1.0	1.0	1.0	1.0	1.0
COPPER CANYON	1.0	1.1	1.1	1.2	1.2	1.2
CORBET WSC	1.0	1.0	1.0	1.0	1.0	1.0
CORINTH	1.0	1.0	1.0	1.0	1.0	1.0
CORSICANA	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, COLLIN	1.0	1.0	1.0	1.0	1.0	1.0

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, COOKE	1.0	1.0	1.2	1.0	1.0	1.0
COUNTY-OTHER, DALLAS	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, DENTON	1.7	1.7	1.7	1.5	1.4	1.2
COUNTY-OTHER, ELLIS	5.6	5.4	5.0	1.6	1.0	1.2
COUNTY-OTHER, FANNIN	1.0	1.2	1.2	1.2	1.1	1.0
COUNTY-OTHER, FREESTONE	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, GRAYSON	2.5	2.9	2.9	2.9	2.0	1.5
COUNTY-OTHER, JACK	1.1	1.1	1.1	1.1	1.1	1.1
COUNTY-OTHER, KAUFMAN	1.1	1.0	1.1	1.1	1.1	1.1
COUNTY-OTHER, NAVARRO	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, PARKER	1.1	1.1	1.2	1.0	1.0	1.0
COUNTY-OTHER, ROCKWALL	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, TARRANT	1.0	1.0	1.0	1.0	1.0	1.0
COUNTY-OTHER, WISE	1.0	1.0	1.0	1.0	1.0	1.0
CRANDALL	1.0	1.0	1.0	1.0	1.0	1.0
CROSS ROADS	1.0	1.0	1.0	1.0	1.0	1.0
CROWLEY	1.0	1.0	1.0	1.0	1.0	1.0
CULLEOKA WSC	1.0	1.0	1.0	1.0	2.3	1.7
DALLAS	1.0	1.0	1.0	1.0	1.0	1.0
DALWORTHINGTON GARDENS	1.0	1.0	1.0	1.0	1.0	1.0
DAWSON	1.0	1.0	1.0	1.0	1.0	1.0
DECATUR	1.0	1.0	1.0	1.1	1.1	1.4
DENISON	1.0	1.3	1.2	1.1	1.2	1.1
DENTON	1.1	1.0	1.0	1.0	1.0	1.0
DENTON COUNTY FWSD #10	1.0	1.0	1.0	1.0	1.0	1.0
DENTON COUNTY FWSD #1A	1.0	1.0	1.0	1.0	1.0	1.0
DENTON COUNTY FWSD #7	1.0	1.0	1.0	1.0	1.0	1.0
DESOTO	1.0	1.0	1.0	1.0	1.0	1.0
DOUBLE OAK	1.0	1.1	1.1	1.2	1.2	1.2
DUNCANVILLE	1.0	1.0	1.0	1.0	1.0	1.0
EAST CEDAR CREEK FWSD	1.0	1.0	1.0	1.0	1.0	1.0
EAST FORK SUD	1.0	1.0	1.0	1.0	1.0	1.0
ECTOR	1.0	1.5	1.4	1.4	1.4	1.4
EDGECLIFF VILLAGE	1.0	1.0	1.0	1.0	1.0	1.0
ENNIS	1.0	1.0	1.0	1.0	1.0	1.0
EULESS	1.0	1.0	1.0	1.1	1.0	1.2
EUSTACE	2.5	2.4	2.3	1.6	1.2	1.0
EVERMAN	1.1	1.2	1.2	1.2	1.2	1.2
FAIRFIELD	1.8	1.7	1.6	1.0	1.0	1.0
FAIRVIEW	1.0	1.0	1.0	1.0	1.0	1.0
FARMERS BRANCH	1.0	1.0	1.0	1.0	1.0	1.0
FARMERSVILLE	1.0	1.0	1.0	1.0	1.0	1.0
FATE	1.0	1.0	1.0	1.0	1.0	1.0
FERRIS	1.0	1.0	1.0	1.0	1.0	1.0
FLOWER MOUND	1.0	1.0	1.0	1.0	1.0	1.0
FOREST HILL	1.0	1.0	1.0	1.0	1.0	1.0
FORNEY	1.0	1.0	1.0	1.0	1.0	1.0
FORNEY LAKE WSC	1.0	1.0	1.0	1.0	1.0	1.0
FORT WORTH	1.1	1.0	1.0	1.0	1.0	1.0
FRISCO	1.0	1.0	1.0	1.0	1.0	1.0

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
FROST	1.2	1.2	1.2	1.2	1.2	1.2
GAINESVILLE	1.0	1.0	1.0	1.0	1.0	1.0
GARLAND	1.0	1.0	1.0	1.0	1.0	1.0
GARRETT	1.0	1.0	1.0	1.0	1.0	1.0
GASTONIA-SCURRY SUD	1.0	1.0	1.0	1.0	1.0	1.0
GLENN HEIGHTS	1.0	1.0	1.0	1.0	1.0	1.0
GRAND PRAIRIE	1.0	1.0	1.0	1.0	1.0	1.0
GRAPEVINE	1.0	1.0	1.0	1.0	1.0	1.0
GUN BARREL CITY	1.0	1.0	1.0	1.0	1.0	1.0
GUNTER	1.1	1.2	1.2	1.1	1.1	1.1
HACKBERRY	1.0	1.0	1.0	1.0	1.0	1.0
HALTOM CITY	1.0	1.0	1.0	1.0	1.0	1.0
HASLET	1.0	1.0	1.0	1.0	1.0	1.0
HEATH	1.0	1.0	1.0	1.0	1.0	1.0
HICKORY CREEK	1.0	1.0	1.0	1.0	1.0	1.0
HIGH POINT WSC	1.0	1.0	1.0	1.0	1.0	1.0
HIGHLAND PARK	1.0	1.0	1.0	1.0	1.0	1.0
HIGHLAND VILLAGE	1.0	1.0	1.1	1.1	1.1	1.1
HONEY GROVE	1.1	1.7	1.9	1.9	1.9	1.9
HOWE	1.0	1.0	1.0	1.0	1.0	1.0
HUDSON OAKS	1.3	1.2	1.2	1.1	1.0	1.0
HURST	1.0	1.0	1.0	1.0	1.0	1.0
HUTCHINS	1.0	1.0	1.0	1.0	1.0	1.0
IRRIGATION, COLLIN	1.9	1.8	1.8	1.8	1.8	1.7
IRRIGATION, COOKE	1.0	1.0	1.0	1.0	1.0	1.0
IRRIGATION, DALLAS	2.2	2.2	2.2	2.2	2.2	2.3
IRRIGATION, DENTON	1.5	1.7	2.0	2.5	2.5	2.5
IRRIGATION, ELLIS	1.0	1.0	1.0	1.0	1.0	1.0
IRRIGATION, FANNIN	1.0	1.0	1.0	1.0	1.0	1.0
IRRIGATION, FREESTONE	1.3	1.3	1.3	1.3	1.3	1.3
IRRIGATION, GRAYSON	2.0	1.9	1.7	1.6	1.5	1.4
IRRIGATION, JACK	1.9	1.9	2.0	2.0	2.0	2.0
IRRIGATION, KAUFMAN	6.3	6.9	7.5	7.5	7.5	7.5
IRRIGATION, NAVARRO	3.9	3.9	4.0	4.0	4.0	4.0
IRRIGATION, PARKER	2.2	2.2	2.2	2.2	2.2	2.2
IRRIGATION, ROCKWALL	1.0	1.0	1.0	1.0	1.0	1.0
IRRIGATION, TARRANT	1.5	1.5	1.5	1.5	1.6	1.6
IRRIGATION, WISE	1.0	1.0	1.0	1.0	1.0	1.0
IRVING	1.3	1.2	1.2	1.2	1.2	1.2
ITALY	1.0	1.0	1.0	1.1	1.1	1.4
JACKSBORO	1.1	1.0	1.0	1.0	1.0	1.0
JOSEPHINE	1.0	1.0	1.0	1.0	1.0	1.0
JUSTIN	1.0	1.0	1.1	1.1	1.1	1.1
KAUFMAN	1.0	1.0	1.0	1.0	1.0	1.0
KELLER	1.0	1.0	1.0	1.0	1.0	1.0
KEMP	1.0	1.0	1.0	1.0	1.0	1.0
KENNEDALE	1.3	1.2	1.2	1.2	1.2	1.2
KENTUCKY TOWN WSC	2.4	2.1	2.0	1.7	1.4	1.1
KERENS	1.0	1.0	1.0	1.0	1.0	1.0
KRUGERVILLE	1.0	1.0	1.0	1.0	1.0	1.0

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
KRUM	1.5	1.5	1.5	1.6	1.5	1.4
LADONIA	1.0	1.1	1.2	1.2	1.2	1.2
LAKE DALLAS	1.0	1.0	1.0	1.0	1.1	1.1
LAKE KIOWA SUD	1.1	1.2	1.2	1.1	1.1	1.1
LAKE WORTH	1.0	1.0	1.0	1.0	1.0	1.0
LAKESIDE	1.2	1.2	1.1	1.1	1.1	1.1
LAKEWOOD VILLAGE	2.6	2.1	1.8	1.5	1.4	1.3
LANCASTER	1.0	1.0	1.0	1.0	1.0	1.0
LAVON	1.0	1.0	1.0	1.0	1.0	1.0
LAVON SUD	1.0	1.0	1.0	1.0	1.0	1.0
LEONARD	1.0	1.4	1.4	1.4	1.4	1.4
LEWISVILLE	1.0	1.0	1.0	1.0	1.0	1.0
LINDSAY	1.1	1.1	1.0	1.0	1.0	1.0
LITTLE ELM	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, COLLIN	1.2	1.2	1.2	1.2	1.2	1.2
LIVESTOCK, COOKE	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, DALLAS	1.1	1.1	1.1	1.1	1.1	1.1
LIVESTOCK, DENTON	1.3	1.3	1.3	1.3	1.3	1.3
LIVESTOCK, ELLIS	1.3	1.3	1.3	1.3	1.3	1.3
LIVESTOCK, FANNIN	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, FREESTONE	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, GRAYSON	1.1	1.1	1.1	1.1	1.1	1.1
LIVESTOCK, JACK	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, KAUFMAN	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, NAVARRO	1.1	1.1	1.1	1.1	1.1	1.1
LIVESTOCK, PARKER	1.4	1.4	1.4	1.4	1.4	1.4
LIVESTOCK, ROCKWALL	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, TARRANT	1.0	1.0	1.0	1.0	1.0	1.0
LIVESTOCK, WISE	1.0	1.0	1.0	1.0	1.0	1.0
LOG CABIN	1.2	1.2	1.2	1.1	1.1	1.0
LOWRY CROSSING	1.0	1.0	1.0	1.0	1.0	1.0
LUCAS	1.0	1.0	1.0	1.0	1.0	1.0
LUELLA SUD	1.7	1.6	1.8	1.6	1.6	1.4
MABANK	1.0	1.0	1.0	1.0	1.0	1.0
MALAKOFF	1.0	1.0	1.0	1.0	1.0	1.0
MANSFIELD	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, COLLIN	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, COOKE	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, DALLAS	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, DENTON	1.3	1.2	1.2	1.2	1.1	1.1
MANUFACTURING, ELLIS	1.2	1.1	1.0	1.0	1.0	1.0
MANUFACTURING, FANNIN	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, FREESTONE	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, GRAYSON	1.2	1.1	1.1	1.1	1.1	1.1
MANUFACTURING, HENDERSON	1.3	1.3	1.2	1.2	1.1	0.9
MANUFACTURING, JACK	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, KAUFMAN	1.6	1.6	1.5	1.5	1.5	1.4
MANUFACTURING, NAVARRO	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, PARKER	1.5	1.5	1.4	1.3	1.0	1.0
MANUFACTURING, ROCKWALL	1.0	1.0	1.0	1.0	1.0	1.1

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
MANUFACTURING, TARRANT	1.0	1.0	1.0	1.0	1.0	1.0
MANUFACTURING, WISE	1.0	1.0	1.0	1.1	1.1	1.3
MARILEE SUD	1.3	1.3	1.3	1.3	1.3	1.4
MAYPEARL	2.3	2.2	2.1	2.1	2.1	2.1
MCKINNEY	1.0	1.0	1.0	1.0	1.0	1.0
MCLENDON-CHISHOLM	1.0	1.0	1.0	1.0	1.0	1.0
MELISSA	1.0	1.0	1.0	1.0	1.0	1.0
M-E-N WSC	1.0	1.0	1.0	1.0	1.0	1.0
MESQUITE	1.0	1.0	1.0	1.0	1.0	1.0
MIDLOTHIAN	1.0	1.0	1.0	1.0	1.0	1.0
MILFORD	1.8	1.7	1.7	1.6	1.5	1.3
MINING, COOKE	1.0	1.0	1.0	1.0	1.0	1.0
MINING, DALLAS	1.0	1.0	1.0	1.1	1.1	1.1
MINING, DENTON	1.0	1.0	1.0	1.0	1.0	1.0
MINING, ELLIS	1.4	1.0	1.3	1.7	2.6	3.9
MINING, FANNIN	1.0	1.0	1.0	1.0	1.0	1.0
MINING, FREESTONE	0.2	0.2	0.2	0.2	0.2	0.2
MINING, GRAYSON	1.5	1.3	1.1	1.3	1.1	1.0
MINING, HENDERSON	1.1	1.0	1.1	1.1	1.1	1.1
MINING, JACK	0.8	0.9	0.9	0.9	0.9	0.9
MINING, KAUFMAN	1.5	1.1	1.6	1.2	1.0	1.0
MINING, NAVARRO	2.4	1.9	1.6	1.3	1.1	1.0
MINING, PARKER	1.4	1.1	1.1	1.1	1.1	1.0
MINING, TARRANT	1.0	1.1	1.2	1.2	1.2	1.2
MINING, WISE	1.1	1.1	1.0	1.0	1.0	1.0
MOUNT ZION WSC	1.0	1.0	1.0	1.0	1.0	1.0
MOUNTAIN PEAK SUD	1.4	1.2	1.2	1.1	1.1	1.0
MOUNTAIN SPRING WSC	1.1	1.1	1.1	1.0	1.0	1.0
MUENSTER	2.1	2.2	2.2	2.2	2.2	2.2
MURPHY	1.0	1.0	1.0	1.0	1.0	1.0
MUSTANG SUD	1.0	1.0	1.0	1.1	1.1	1.0
NAVARRO MILLS WSC	1.6	1.5	1.5	1.7	1.6	1.6
NEVADA	1.0	1.0	1.0	1.0	1.0	1.0
NEW FAIRVIEW	1.0	1.0	1.0	1.0	1.0	1.0
NEW HOPE	1.0	1.0	1.0	1.0	1.0	1.0
NEWARK	1.0	1.0	1.0	1.0	1.0	1.0
NORTH COLLIN WSC	1.0	1.0	1.0	1.0	1.0	1.0
NORTH RICHLAND HILLS	1.0	1.0	1.0	1.0	1.0	1.0
NORTHLAKE	1.0	1.0	1.0	1.0	1.0	1.0
OAK GROVE	1.0	1.0	1.0	1.0	1.0	1.0
OAK LEAF	1.0	1.0	1.0	1.0	1.0	1.0
OAK POINT	1.0	1.0	1.0	1.0	1.0	1.0
OVILLA	1.0	1.0	1.0	1.0	1.0	1.0
PALMER	1.1	1.1	1.1	1.0	1.0	1.0
PALOMA CREEK	1.0	1.0	1.0	1.0	1.0	1.0
PANTEGO	1.2	1.3	1.4	1.4	1.4	1.3
PARKER	1.0	1.0	1.1	1.1	1.0	1.0
PARKER COUNTY SUD	2.2	1.7	1.4	1.1	1.2	1.0
PAYNE SPRINGS	2.2	2.1	2.0	1.9	1.7	1.5
PECAN HILL	1.0	1.0	1.0	1.0	1.0	1.0

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
PELICAN BAY	1.1	1.2	1.2	1.1	1.1	1.1
PILOT POINT	1.5	1.3	1.2	1.1	1.1	1.1
PLANO	1.0	1.0	1.0	1.0	1.0	1.0
PONDER	1.9	1.4	1.2	1.3	1.3	1.2
POST OAK BEND CITY	1.0	1.0	1.0	1.0	1.0	1.0
POTTSBORO	1.0	1.0	1.0	1.0	1.0	1.0
PRINCETON	1.0	1.0	1.0	1.0	1.0	1.0
PROSPER	1.0	1.0	1.0	1.1	1.0	1.0
PROVIDENCE VILLAGE WCID	1.0	1.0	1.0	1.0	1.0	1.0
RED OAK	1.0	1.0	1.0	1.0	1.0	1.0
RENO	1.3	1.2	1.2	1.2	1.2	1.1
RHOME	1.0	1.0	1.0	1.0	1.0	1.0
RICE	1.0	1.0	1.0	1.0	1.0	1.0
RICE WSC	1.0	1.0	1.0	1.0	1.0	1.0
RICHARDSON	1.0	1.0	1.0	1.0	1.0	1.0
RICHLAND HILLS	1.0	1.0	1.0	1.0	1.0	1.1
RIVER OAKS	1.0	1.0	1.0	1.0	1.0	1.0
ROANOKE	1.0	1.0	1.0	1.0	1.0	1.0
ROCKETT SUD	1.4	1.3	1.3	1.1	1.0	1.4
ROCKWALL	1.0	1.0	1.0	1.0	1.0	1.0
ROSE HILL SUD	1.0	1.0	1.0	1.0	1.0	1.0
ROWLETT	1.0	1.0	1.0	1.0	1.0	1.0
ROYSE CITY	1.0	1.0	1.0	1.0	1.0	1.0
RUNAWAY BAY	1.0	1.0	1.0	1.0	1.0	1.0
SACHSE	1.0	1.0	1.0	1.0	1.0	1.0
SAGINAW	1.0	1.0	1.0	1.0	1.0	1.0
SANGER	1.0	1.1	1.1	1.2	1.2	1.1
SANSOM PARK	1.1	1.1	1.0	1.0	1.0	1.0
SARDIS-LONE ELM WSC	1.1	1.3	1.2	1.2	1.2	1.3
SAVOY	1.0	1.3	1.4	1.4	1.4	1.3
SCURRY	1.0	1.0	1.0	1.0	1.0	1.0
SEAGOVILLE	1.0	1.0	1.0	1.0	1.0	1.0
SEIS LAGOS UD	1.0	1.0	1.0	1.0	1.0	1.0
SEVEN POINTS	1.0	1.0	1.0	1.0	1.0	1.0
SHADY SHORES	1.0	1.0	1.0	1.0	1.1	1.1
SHERMAN	1.0	1.0	1.0	1.0	1.0	1.0
SOUTH GRAYSON WSC	1.7	1.5	1.3	1.2	1.1	1.1
SOUTHLAKE	1.0	1.0	1.0	1.0	1.0	1.0
SOUTHMAYD	1.7	1.6	1.9	1.8	1.5	1.4
SOUTHWEST FANNIN COUNTY SUD	1.1	1.6	1.5	1.4	1.3	1.3
SPRINGTOWN	1.0	1.0	1.0	1.0	1.0	1.0
ST. PAUL	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, COLLIN	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, DALLAS	2.4	2.8	1.2	1.2	1.2	1.2
STEAM ELECTRIC POWER, DENTON	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, ELLIS	2.3	1.1	1.0	1.1	1.1	1.0
STEAM ELECTRIC POWER, FANNIN	1.0	1.4	1.3	1.3	1.2	1.1
STEAM ELECTRIC POWER, FREESTONE	1.1	1.1	1.1	1.2	1.0	1.1
STEAM ELECTRIC POWER, GRAYSON	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, HENDERSON	1.9	1.1	1.0	1.0	1.0	1.0

Water User Group (WUG) Management Supply Factor

REGION C	WUG MANAGEMENT SUPPLY FACTOR					
	2020	2030	2040	2050	2060	2070
STEAM ELECTRIC POWER, JACK	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, KAUFMAN	1.4	1.4	1.4	1.4	1.4	1.4
STEAM ELECTRIC POWER, NAVARRO	1.0	1.0	1.0	1.0	1.0	1.0
STEAM ELECTRIC POWER, PARKER	1.5	1.4	1.3	1.2	1.1	1.1
STEAM ELECTRIC POWER, TARRANT	1.4	1.2	1.2	1.2	1.2	1.2
STEAM ELECTRIC POWER, WISE	1.0	1.0	1.0	1.0	1.0	1.0
SUNNYVALE	1.0	1.0	1.0	1.0	1.0	1.0
TALTY	1.0	1.0	1.0	1.0	1.0	1.0
TALTY WSC	1.0	1.0	1.0	1.0	1.0	1.0
TEAGUE	1.8	1.8	1.3	1.4	1.2	1.0
TERRELL	1.0	1.0	1.0	1.0	1.0	1.0
THE COLONY	1.0	1.0	1.0	1.0	1.0	1.0
TIOGA	1.0	1.0	1.0	1.0	1.0	1.0
TOM BEAN	1.0	1.1	1.2	1.2	1.2	1.2
TOOL	1.0	1.0	1.0	1.0	1.0	1.0
TRENTON	1.0	1.4	1.1	1.1	1.1	1.0
TRINIDAD	4.9	5.2	5.4	5.4	4.9	4.1
TROPHY CLUB	1.0	1.0	1.0	1.0	1.0	1.0
TWO WAY SUD	1.0	1.0	1.0	1.0	1.0	1.0
UNIVERSITY PARK	1.0	1.0	1.0	1.0	1.0	1.0
VALLEY VIEW	1.0	1.0	1.0	1.0	1.0	1.0
VAN ALSTYNE	1.0	1.0	1.0	1.0	1.0	1.0
VIRGINIA HILL WSC	1.6	1.5	1.4	1.2	1.1	1.0
WALNUT CREEK SUD	1.0	1.1	1.1	1.2	1.3	1.4
WATAUGA	1.3	1.3	1.3	1.2	1.0	1.0
WAXAHACHIE	1.2	1.1	1.1	1.1	1.1	1.0
WEATHERFORD	1.0	1.0	1.1	1.0	1.0	1.0
WEST CEDAR CREEK MUD	1.0	1.0	1.0	1.0	1.0	1.0
WEST WISE SUD	1.0	1.0	1.0	1.0	1.0	1.0
WESTLAKE	1.0	1.0	1.0	1.0	1.0	1.0
WESTON	1.0	1.3	1.1	1.0	1.0	1.0
WESTOVER HILLS	1.0	1.0	1.0	1.0	1.0	1.0
WESTWORTH VILLAGE	1.0	1.0	1.0	1.0	1.0	1.0
WHITE SETTLEMENT	1.0	1.0	1.0	1.0	1.0	1.0
WHITESBORO	1.2	1.2	1.2	1.2	1.0	1.0
WHITEWRIGHT	1.3	1.3	1.6	1.6	1.7	1.6
WILLOW PARK	1.0	1.0	1.0	1.1	1.1	1.4
WILMER	1.0	1.0	1.0	1.0	1.0	1.0
WOODBINE WSC	1.0	1.0	1.0	1.0	1.0	1.0
WORTHAM	1.0	1.0	1.0	1.0	1.0	1.0
WYLIE	1.0	1.0	1.0	1.0	1.0	1.0
WYLIE NORTHEAST SUD	1.0	1.0	1.0	1.0	1.0	1.0

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. To calculate the Management Supply Factor for each WUG as a whole, not split by region-county-basin the combined total of existing and future supply is divided by the total projected demand.

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
COLLIN COUNTY						
SABINE BASIN						
CADDO BASIN SUD	(15)	(48)	(83)	(116)	(155)	(203)
FARMERSVILLE	(2)	0	0	0	(2)	(2)
JOSEPHINE	(22)	(91)	(152)	(214)	(241)	(271)
NEVADA	(1)	(3)	(5)	(20)	(55)	(112)
ROYSE CITY	(14)	(146)	(392)	(739)	(1,580)	(1,909)
COUNTY-OTHER	(2)	(10)	(8)	(9)	(10)	(11)
LIVESTOCK	14	14	14	14	14	14
IRRIGATION	57	54	50	47	45	44
TRINITY BASIN						
ALLEN	(1,613)	(4,753)	(5,938)	(6,732)	(7,563)	(8,495)
ANNA	(77)	(296)	(998)	(2,236)	(6,577)	(11,230)
BLUE RIDGE	0	(93)	(270)	(1,320)	(3,129)	(5,369)
CADDO BASIN SUD	(8)	(24)	(40)	(56)	(75)	(101)
CARROLLTON	(1)	(1)	(1)	(2)	(2)	(2)
CELINA	(1,395)	(5,951)	(12,322)	(20,663)	(20,662)	(21,114)
COPEVILLE SUD	(25)	(88)	(133)	(199)	(390)	(749)
CULLEOKA WSC	(26)	(86)	(178)	(247)	(304)	(426)
DALLAS	(735)	(2,110)	(3,571)	(4,492)	(5,209)	(5,705)
EAST FORK SUD	(21)	(78)	(119)	(164)	(223)	(296)
FAIRVIEW	(365)	(1,245)	(2,084)	(2,369)	(2,664)	(2,992)
FARMERSVILLE	(73)	(540)	(675)	(767)	(860)	(966)
FRISCO	(3,200)	(9,170)	(14,253)	(15,740)	(17,276)	(18,983)
GARLAND	(4)	(15)	(24)	(32)	(43)	(59)
HICKORY CREEK SUD	5	1	(2)	(4)	(5)	(7)
LAVON	(44)	(166)	(318)	(465)	(1,175)	(2,968)
LAVON SUD	(26)	(85)	(125)	(160)	(419)	(1,175)
LOWRY CROSSING	(17)	(60)	(90)	(102)	(115)	(129)
LUCAS	(168)	(562)	(930)	(1,179)	(1,465)	(1,646)
MARILEE SUD	141	142	144	129	115	91
MCKINNEY	(2,700)	(9,554)	(17,363)	(25,694)	(28,891)	(32,454)
MELISSA	(105)	(450)	(785)	(2,105)	(3,992)	(6,766)
MURPHY	(415)	(1,228)	(1,539)	(1,748)	(1,964)	(2,205)
NEVADA	(7)	(23)	(34)	(156)	(440)	(888)
NEW HOPE	(9)	(33)	(51)	(70)	(94)	(126)
NORTH COLLIN WSC	(61)	(204)	(290)	(373)	(481)	(619)
PARKER	(201)	(3,969)	(5,651)	(5,647)	(5,646)	(5,646)
PLANO	(5,271)	(16,040)	(20,869)	(23,787)	(26,726)	(30,022)
PRINCETON	(76)	(289)	(460)	(1,230)	(2,180)	(3,346)
PROSPER	(402)	(2,348)	(4,218)	(5,262)	(6,049)	(6,049)
RICHARDSON	(620)	(1,827)	(2,356)	(2,744)	(3,085)	(3,465)
SACHSE	(112)	(332)	(414)	(469)	(529)	(593)
SEIS LAGOS UD	(47)	(140)	(175)	(199)	(223)	(251)
SOUTH GRAYSON WSC	71	66	38	22	3	(19)
ST. PAUL	(21)	(70)	(95)	(112)	(131)	(147)
WESTON	(71)	(625)	(4,379)	(11,333)	(18,288)	(18,286)
WYLIE	(498)	(1,654)	(2,222)	(2,652)	(3,084)	(3,564)
WYLIE NORTHEAST SUD	(20)	(75)	(116)	(262)	(491)	(881)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
COLLIN COUNTY						
TRINITY BASIN						
COUNTY-OTHER	(86)	(244)	(304)	(1,567)	(2,599)	(4,800)
MANUFACTURING	(233)	(855)	(1,221)	(1,532)	(1,884)	(2,302)
STEAM ELECTRIC POWER	(56)	(141)	(217)	(199)	(294)	(306)
LIVESTOCK	128	128	128	128	128	128
IRRIGATION	2,486	2,334	2,170	2,064	1,983	1,927
COOKE COUNTY						
RED BASIN						
GAINESVILLE	0	0	0	0	0	(2)
TWO WAY SUD	0	(2)	(4)	(6)	(7)	(9)
WOODBINE WSC	1	(4)	(9)	(14)	(20)	(26)
COUNTY-OTHER	0	0	52	0	0	(201)
LIVESTOCK	29	29	29	29	29	29
IRRIGATION	(20)	(20)	(20)	(20)	(20)	(20)
TRINITY BASIN						
BOLIVAR WSC	3	(17)	(36)	(53)	(71)	(86)
GAINESVILLE	0	0	0	0	0	(1,475)
LAKE KIOWA SUD	43	39	29	16	3	3
LINDSAY	14	8	4	(2)	(146)	(447)
MOUNTAIN SPRING WSC	63	39	20	0	(291)	(766)
MUENSTER	17	24	22	25	18	18
VALLEY VIEW	0	(4)	(7)	(10)	(12)	(15)
WOODBINE WSC	6	(45)	(100)	(164)	(234)	(306)
COUNTY-OTHER	0	0	200	0	0	(1,154)
MANUFACTURING	0	0	0	0	0	(178)
MINING	(783)	(150)	(78)	(146)	(211)	(286)
LIVESTOCK	31	31	31	31	31	31
IRRIGATION	(46)	(46)	(46)	(46)	(46)	(46)
DALLAS COUNTY						
TRINITY BASIN						
ADDISON	(278)	(944)	(1,857)	(2,681)	(3,499)	(4,257)
BALCH SPRINGS	(127)	(384)	(691)	(942)	(1,178)	(1,386)
CARROLLTON	(415)	(1,189)	(1,997)	(2,512)	(2,914)	(3,193)
CEDAR HILL	(478)	(1,653)	(3,294)	(4,801)	(5,573)	(6,105)
COCKRELL HILL	(19)	(56)	(91)	(113)	(178)	(415)
COMBINE	(38)	(49)	(62)	(77)	(98)	(115)
COPPELL	(495)	(1,453)	(2,446)	(3,086)	(3,581)	(3,922)
DALLAS	(11,757)	(35,796)	(68,405)	(96,434)	(120,989)	(137,368)
DESOTO	(437)	(1,344)	(2,452)	(3,364)	(4,213)	(4,959)
DUNCANVILLE	(281)	(854)	(1,419)	(1,778)	(2,060)	(2,257)
EAST FORK SUD	(19)	(72)	(114)	(157)	(208)	(272)
FARMERS BRANCH	(419)	(1,255)	(2,234)	(2,990)	(3,663)	(4,227)
FERRIS	0	(1)	0	(1)	(2)	(2)
GARLAND	(2,970)	(8,866)	(10,993)	(12,370)	(13,887)	(15,596)
GLENN HEIGHTS	(63)	(247)	(536)	(842)	(1,163)	(1,692)
GRAND PRAIRIE	(4,128)	(6,740)	(10,170)	(11,908)	(13,633)	(14,682)
HIGHLAND PARK	(34)	(48)	(41)	(55)	(68)	(82)
HUTCHINS	(47)	(185)	(401)	(619)	(849)	(1,074)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
DALLAS COUNTY						
TRINITY BASIN						
IRVING	(12,866)	(17,918)	(18,270)	(18,713)	(19,163)	(19,613)
LANCASTER	(380)	(1,327)	(2,606)	(3,650)	(4,660)	(5,574)
LEWISVILLE	(7)	(21)	(36)	(48)	(58)	(58)
MESQUITE	(1,755)	(5,568)	(7,734)	(9,496)	(11,518)	(13,898)
OVILLA	(5)	(19)	(39)	(60)	(81)	(155)
RICHARDSON	(1,448)	(4,408)	(5,682)	(6,621)	(7,436)	(8,355)
ROCKETT SUD	3	(47)	(127)	(216)	(322)	(425)
ROWLETT	(681)	(2,181)	(2,707)	(3,055)	(3,431)	(3,853)
SACHSE	(295)	(865)	(1,081)	(1,226)	(1,376)	(1,546)
SEAGOVILLE	(830)	(1,158)	(1,540)	(1,960)	(2,546)	(2,773)
SUNNYVALE	(185)	(779)	(1,267)	(1,661)	(2,241)	(2,517)
UNIVERSITY PARK	(63)	(88)	(74)	(98)	(123)	(147)
WILMER	(19)	(58)	(155)	(370)	(679)	(1,359)
WYLIE	(31)	(92)	(116)	(136)	(155)	(184)
COUNTY-OTHER	(8)	(280)	(460)	(601)	(710)	(795)
MANUFACTURING	(2,047)	(5,621)	(10,112)	(13,257)	(15,199)	(16,642)
MINING	(49)	(90)	(69)	185	181	183
STEAM ELECTRIC POWER	6,536	6,105	(425)	(728)	(958)	(1,117)
LIVESTOCK	107	107	107	107	107	107
IRRIGATION	3,531	3,531	3,531	3,531	3,531	3,531
DENTON COUNTY						
TRINITY BASIN						
ARGYLE	(36)	(444)	(1,058)	(1,317)	(1,416)	(1,547)
ARGYLE WSC	36	50	(2)	(90)	(123)	(169)
AUBREY	0	(163)	(331)	(515)	(680)	(902)
BARTONVILLE	(1)	(151)	(266)	(354)	(387)	(429)
BOLIVAR WSC	6	(112)	(267)	(460)	(700)	(981)
CARROLLTON	(642)	(1,895)	(3,180)	(4,000)	(4,640)	(5,086)
CELINA	(44)	(661)	(2,704)	(6,888)	(6,887)	(7,036)
COPPELL	(14)	(39)	(67)	(85)	(97)	(107)
COPPER CANYON	0	(11)	(27)	(49)	(69)	(101)
CORINTH	(847)	(2,143)	(2,688)	(3,087)	(3,254)	(3,426)
CROSS ROADS	(1)	(137)	(297)	(389)	(428)	(468)
DALLAS	(306)	(928)	(1,763)	(2,471)	(3,090)	(3,503)
DENTON	(3,076)	(11,473)	(20,957)	(33,278)	(55,059)	(72,765)
DENTON COUNTY FWSD #10	0	(680)	(1,214)	(1,608)	(1,770)	(1,939)
DENTON COUNTY FWSD #1A	(57)	(1,213)	(2,619)	(3,490)	(3,934)	(4,543)
DENTON COUNTY FWSD #7	0	(758)	(1,330)	(1,753)	(1,931)	(2,109)
DOUBLE OAK	0	(26)	(46)	(60)	(62)	(80)
FLOWER MOUND	(2,399)	(5,807)	(8,139)	(9,859)	(10,935)	(11,959)
FORT WORTH	(265)	(1,905)	(4,758)	(8,130)	(11,810)	(15,918)
FRISCO	(2,132)	(6,113)	(9,502)	(10,493)	(11,516)	(12,658)
HACKBERRY	(24)	(92)	(146)	(206)	(283)	(384)
HICKORY CREEK	0	(133)	(295)	(504)	(548)	(603)
HIGHLAND VILLAGE	0	(478)	(844)	(1,118)	(1,213)	(1,377)
JUSTIN	(244)	(367)	(672)	(813)	(865)	(941)
KRUGERVILLE	(1)	(69)	(145)	(223)	(246)	(270)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
DENTON COUNTY						
TRINITY BASIN						
KRUM	0	(180)	(448)	(781)	(1,095)	(1,515)
LAKE DALLAS	(1)	(205)	(429)	(557)	(612)	(676)
LAKEWOOD VILLAGE	135	116	93	67	36	0
LEWISVILLE	(929)	(2,978)	(5,954)	(9,090)	(12,198)	(12,194)
LITTLE ELM	(322)	(1,075)	(1,347)	(1,529)	(1,717)	(1,929)
MOUNTAIN SPRING WSC	1	1	1	0	(5)	(10)
MUSTANG SUD	4	(449)	(1,436)	(2,760)	(3,977)	(6,601)
NORTHLAKE	(3)	(699)	(2,258)	(4,099)	(5,832)	(6,386)
OAK POINT	(1)	(272)	(685)	(1,178)	(1,594)	(1,754)
PALOMA CREEK	(1)	(773)	(1,357)	(1,788)	(1,967)	(2,282)
PILOT POINT	211	32	(347)	(863)	(1,513)	(2,425)
PLANO	(151)	(462)	(590)	(668)	(751)	(844)
PONDER	222	133	25	(98)	(242)	(407)
PROSPER	(16)	(402)	(1,582)	(3,590)	(5,857)	(5,855)
PROVIDENCE VILLAGE WCID	0	(208)	(363)	(479)	(526)	(573)
ROANOKE	(44)	(543)	(1,062)	(1,288)	(1,462)	(1,614)
SANGER	(3)	11	(117)	(351)	(616)	(1,019)
SHADY SHORES	0	(91)	(156)	(207)	(229)	(253)
SOUTHLAKE	(10)	(105)	(216)	(324)	(451)	(601)
THE COLONY	(336)	(1,171)	(1,904)	(2,555)	(2,943)	(3,262)
TROPHY CLUB	(218)	(1,103)	(1,799)	(2,181)	(2,476)	(2,733)
WESTLAKE	(1)	(8)	(16)	(24)	(34)	(46)
COUNTY-OTHER	1,059	642	217	(1,120)	(3,638)	(9,747)
MANUFACTURING	(116)	(383)	(694)	(992)	(1,311)	(1,569)
MINING	0	(170)	(540)	(1,208)	(1,841)	(2,687)
STEAM ELECTRIC POWER	0	0	0	0	0	0
LIVESTOCK	307	307	307	307	307	307
IRRIGATION	995	956	914	887	867	852
ELLIS COUNTY						
TRINITY BASIN						
BARDWELL	(24)	(44)	(68)	(97)	(130)	(320)
BRANDON-IRENE WSC	4	5	7	6	6	5
BUENA VISTA - BETHEL SUD	480	135	(39)	(64)	(425)	(1,143)
CEDAR HILL	(7)	(22)	(48)	(78)	(89)	(98)
ENNIS	(148)	(496)	(1,061)	(2,391)	(6,712)	(14,585)
FERRIS	(32)	(81)	(148)	(223)	(573)	(1,437)
FILES VALLEY WSC	140	188	203	210	212	206
GARRETT	(6)	(11)	(16)	(219)	(468)	(1,455)
GLENN HEIGHTS	(16)	(59)	(125)	(198)	(284)	(478)
GRAND PRAIRIE	0	(1)	(4)	(7)	(7)	(12)
ITALY	0	(72)	(159)	(266)	(419)	(662)
JOHNSON COUNTY SUD	39	34	27	17	8	(6)
MANSFIELD	(8)	(13)	(20)	(35)	(47)	(62)
MAYPEARL	38	20	10	12	12	12
MIDLOTHIAN	18	(882)	(2,335)	(3,810)	(5,218)	(6,376)
MILFORD	50	49	47	42	36	27
MOUNTAIN PEAK SUD	(154)	(401)	(784)	(1,271)	(1,872)	(2,580)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
ELLIS COUNTY						
TRINITY BASIN						
OAK LEAF	(21)	(40)	(60)	(93)	(149)	(193)
OVILLA	(45)	(161)	(340)	(531)	(756)	(1,522)
PALMER	(64)	(131)	(214)	(304)	(446)	(941)
PECAN HILL	(34)	(60)	(92)	(127)	(178)	(298)
RED OAK	(377)	(577)	(895)	(1,321)	(1,789)	(2,914)
RICE WSC	(1)	(272)	(388)	(556)	(789)	(1,078)
ROCKETT SUD	110	(989)	(2,237)	(3,522)	(5,473)	(7,435)
SARDIS-LONE ELM WSC	(658)	(1,348)	(2,250)	(2,848)	(3,443)	(3,843)
VENUS	(16)	(20)	(25)	(31)	(37)	(45)
WAXAHACHIE	1,499	758	(723)	(907)	(2,917)	(6,082)
COUNTY-OTHER	1,411	1,177	899	(849)	(4,197)	(8,946)
MANUFACTURING	1,000	530	(173)	(433)	(907)	(1,379)
MINING	66	0	49	90	131	158
STEAM ELECTRIC POWER	922	125	(2,291)	(4,398)	(6,659)	(9,664)
LIVESTOCK	304	304	304	304	304	304
IRRIGATION	0	0	0	0	0	0
FANNIN COUNTY						
RED BASIN						
BONHAM	0	(14)	(757)	(1,933)	(2,916)	(4,070)
ECTOR	0	(5)	(9)	(14)	(22)	(31)
HONEY GROVE	0	(1)	0	1	1	1
LEONARD	0	0	0	(1)	(1)	(1)
SAVOY	0	(4)	(6)	(10)	(18)	(27)
SOUTHWEST FANNIN COUNTY SUD	33	(31)	(82)	(129)	(231)	(336)
TRENTON	0	0	(2)	(3)	(3)	(4)
WHITEWRIGHT	1	1	1	1	1	1
COUNTY-OTHER	0	191	137	(239)	(1,907)	(3,739)
MANUFACTURING	0	(1)	(24)	(48)	(64)	(80)
MINING	(42)	(42)	(42)	(42)	(42)	(42)
STEAM ELECTRIC POWER	200	(4,911)	(5,347)	(5,880)	(6,529)	(7,212)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	1	1	1	1	1	1
SULPHUR BASIN						
HICKORY CREEK SUD	18	7	(4)	(11)	(19)	(24)
HONEY GROVE	0	(5)	0	2	2	2
LADONIA	0	(24)	(35)	(55)	(90)	(89)
LEONARD	0	(1)	(1)	(1)	(1)	(2)
NORTH HUNT SUD	16	0	0	0	0	0
COUNTY-OTHER	0	21	27	(61)	(447)	(896)
MINING	(14)	(14)	(14)	(14)	(14)	(14)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
HICKORY CREEK SUD	1	0	0	0	(2)	(2)
LEONARD	0	(20)	(36)	(53)	(84)	(118)
SOUTHWEST FANNIN COUNTY SUD	2	(2)	(4)	(7)	(12)	(17)
TRENTON	0	(48)	(476)	(907)	(1,253)	(1,598)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
FANNIN COUNTY						
TRINITY BASIN						
COUNTY-OTHER	0	51	16	(15)	(201)	(474)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
FREESTONE COUNTY						
BRAZOS BASIN						
TEAGUE	149	146	83	22	(42)	(108)
COUNTY-OTHER	(23)	(23)	(12)	(43)	(150)	(474)
MINING	(461)	(436)	(451)	(454)	(462)	(487)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	10	10	10	10	10	10
TRINITY BASIN						
FAIRFIELD	519	473	441	(223)	(476)	(976)
FLO COMMUNITY WSC	0	0	0	0	0	0
OAKWOOD	0	0	0	0	0	0
TEAGUE	152	149	83	22	(42)	(110)
WORTHAM	(11)	(18)	(22)	(26)	(146)	(186)
COUNTY-OTHER	(175)	(176)	(158)	(408)	(1,183)	(3,092)
MANUFACTURING	0	0	0	0	0	0
MINING	(3,874)	(3,667)	(3,788)	(3,820)	(3,882)	(4,083)
STEAM ELECTRIC POWER	2,748	2,144	1,433	(2,909)	(8,677)	(15,347)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	77	77	77	77	77	77
GRAYSON COUNTY						
RED BASIN						
BELLS	0	(24)	(48)	(79)	(413)	(608)
DENISON	4	(684)	(1,319)	(2,040)	(3,508)	(5,969)
HOWE	(1)	(3)	(5)	(9)	(14)	(22)
KENTUCKY TOWN WSC	250	222	192	156	86	0
LUELLA SUD	249	210	171	120	63	0
POTTSBORO	0	(51)	(164)	(429)	(1,138)	(2,504)
SHERMAN	(85)	(385)	(1,071)	(2,302)	(5,378)	(11,818)
SOUTHMAYD	64	58	51	42	2	(77)
SOUTHWEST FANNIN COUNTY SUD	16	(21)	(67)	(132)	(265)	(431)
TOM BEAN	0	(3)	(6)	(9)	(17)	(38)
TWO WAY SUD	0	(109)	(218)	(348)	(604)	(865)
WHITESBORO	34	38	42	42	(6)	(77)
WHITEWRIGHT	60	66	70	70	58	45
COUNTY-OTHER	3,973	3,844	3,533	3,057	1,532	(475)
MANUFACTURING	721	456	(5)	(584)	(1,529)	(2,691)
MINING	43	31	15	(1)	(20)	(41)
STEAM ELECTRIC POWER	0	(3,929)	(3,929)	(3,929)	(3,929)	(3,929)
LIVESTOCK	51	51	51	51	51	51
IRRIGATION	1,343	1,225	1,107	991	873	756
TRINITY BASIN						
COLLINSVILLE	9	(43)	(96)	(159)	(271)	(424)
GUNTER	0	(118)	(269)	(421)	(575)	(730)
HOWE	1	(7)	(15)	(27)	(42)	(59)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
GRAYSON COUNTY						
TRINITY BASIN						
KENTUCKY TOWN WSC	248	219	191	155	86	0
LUELLA SUD	38	33	26	19	10	0
MARILEE SUD	105	106	107	97	86	68
SOUTH GRAYSON WSC	204	161	80	42	5	(30)
TIOGA	0	(5)	(12)	(20)	(325)	(489)
TOM BEAN	0	(20)	(40)	(66)	(120)	(278)
TWO WAY SUD	0	(63)	(128)	(204)	(353)	(506)
VAN ALSTYNE	0	(21)	(54)	(98)	(685)	(1,435)
WHITESBORO	44	51	55	56	(7)	(102)
WHITEWRIGHT	1	1	1	1	1	1
WOODBINE WSC	0	(1)	(2)	(3)	(4)	(5)
COUNTY-OTHER	194	191	180	184	47	(9)
MANUFACTURING	4	3	0	(4)	(7)	(13)
STEAM ELECTRIC POWER	0	(2,619)	(2,619)	(2,619)	(2,619)	(2,619)
LIVESTOCK	30	30	30	30	30	30
IRRIGATION	1,128	1,030	932	832	733	634
HENDERSON COUNTY						
TRINITY BASIN						
ATHENS	(110)	(133)	(103)	(69)	(1,623)	(4,232)
BETHEL-ASH WSC	109	90	73	47	24	0
EAST CEDAR CREEK FWSD	(254)	(311)	(445)	(544)	(714)	(893)
EUSTACE	75	69	62	3	(54)	(103)
GUN BARREL CITY	(324)	(385)	(478)	(628)	(1,161)	(2,163)
LOG CABIN	18	16	14	9	5	0
MABANK	0	(16)	(34)	(77)	(218)	(528)
MALAKOFF	0	(2)	(5)	(8)	(16)	(28)
PAYNE SPRINGS	5	(6)	(19)	(36)	(62)	(112)
SEVEN POINTS	(42)	(85)	(132)	(216)	(353)	(497)
TOOL	(70)	(130)	(187)	(256)	(537)	(866)
TRINIDAD	359	364	367	367	357	339
VIRGINIA HILL WSC	143	120	101	69	38	0
WEST CEDAR CREEK MUD	(96)	(160)	(216)	(276)	(450)	(678)
COUNTY-OTHER	0	(14)	(28)	(33)	(33)	(31)
MANUFACTURING	168	143	122	95	(11)	(89)
MINING	0	(16)	(36)	(53)	(67)	(79)
STEAM ELECTRIC POWER	(950)	(3,950)	(4,950)	(5,950)	(6,950)	(7,950)
LIVESTOCK	364	364	364	364	364	364
JACK COUNTY						
BRAZOS BASIN						
BRYSON	15	13	12	11	10	10
COUNTY-OTHER	5	0	(2)	(2)	(4)	(6)
MANUFACTURING	0	0	0	0	0	0
MINING	(392)	(468)	(449)	(462)	(477)	(515)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	26	25	25	25	25	25
TRINITY BASIN						
JACKSBORO	52	27	14	8	(1)	(7)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
JACK COUNTY						
TRINITY BASIN						
COUNTY-OTHER	8	0	(3)	(5)	(9)	(11)
MINING	(589)	(703)	(675)	(695)	(717)	(773)
STEAM ELECTRIC POWER	0	(259)	(605)	(956)	(1,288)	(1,626)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	65	65	65	64	64	63
KAUFMAN COUNTY						
SABINE BASIN						
ABLES SPRINGS WSC	(15)	(56)	(87)	(122)	(165)	(220)
MACBEE SUD	0	65	68	72	76	80
COUNTY-OTHER	(6)	(7)	(19)	(48)	(59)	(135)
MINING	7	2	(3)	(11)	(18)	(26)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	47	50	53	51	50	48
TRINITY BASIN						
ABLES SPRINGS WSC	(10)	(38)	(58)	(79)	(108)	(145)
COLLEGE MOUND WSC	(61)	(231)	(400)	(600)	(947)	(1,340)
COMBINE	(87)	(124)	(172)	(232)	(321)	(420)
CRANDALL	(174)	(350)	(557)	(792)	(791)	(790)
FORNEY	(251)	(866)	(1,411)	(1,944)	(3,170)	(5,774)
FORNEY LAKE WSC	(65)	(236)	(363)	(501)	(951)	(1,535)
GASTONIA-SCURRY SUD	(87)	(216)	(318)	(428)	(1,114)	(2,316)
HIGH POINT WSC	(34)	(124)	(213)	(320)	(609)	(908)
KAUFMAN	(79)	(278)	(424)	(720)	(1,045)	(1,440)
KEMP	(39)	(84)	(141)	(219)	(465)	(788)
MABANK	0	(75)	(173)	(478)	(977)	(1,582)
MACBEE SUD	0	9	11	12	12	13
MESQUITE	(1)	(7)	(9)	(11)	(18)	(22)
OAK GROVE	(6)	(21)	(30)	(52)	(80)	(178)
POST OAK BEND CITY	(7)	(26)	(39)	(69)	(104)	(232)
ROSE HILL SUD	(36)	(128)	(193)	(263)	(388)	(670)
SCURRY	(5)	(17)	(25)	(43)	(68)	(171)
SEAGOVILLE	(2)	(2)	(3)	(4)	(6)	(8)
SEVEN POINTS	(3)	(6)	(11)	(17)	(28)	(41)
TALTY	(24)	(88)	(135)	(187)	(291)	(545)
TALTY WSC	(311)	(614)	(829)	(1,222)	(1,712)	(2,530)
TERRELL	(337)	(1,669)	(3,289)	(5,553)	(7,764)	(10,145)
WEST CEDAR CREEK MUD	(92)	(194)	(322)	(497)	(901)	(1,582)
COUNTY-OTHER	(128)	(242)	(537)	(1,146)	(2,525)	(4,000)
MANUFACTURING	425	283	190	104	15	(81)
MINING	133	48	(52)	(199)	(329)	(489)
STEAM ELECTRIC POWER	2,012	1,838	1,771	1,725	1,678	1,626
LIVESTOCK	5	5	5	5	5	5
IRRIGATION	899	961	1,021	983	951	924
NAVARRO COUNTY						
TRINITY BASIN						
BLOOMING GROVE	0	(58)	(70)	(88)	(110)	(135)
BRANDON-IRENE WSC	11	12	11	10	9	8

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
NAVARRO COUNTY						
TRINITY BASIN						
CHATFIELD WSC	0	(163)	(185)	(215)	(251)	(287)
CORBET WSC	0	(96)	(116)	(144)	(180)	(221)
CORSICANA	0	(2,280)	(2,794)	(3,523)	(4,405)	(5,395)
DAWSON	0	(56)	(69)	(86)	(108)	(132)
FROST	16	(9)	(14)	(22)	(32)	(42)
KERENS	0	(77)	(92)	(116)	(145)	(178)
M-E-N WSC	0	(179)	(219)	(276)	(345)	(422)
NAVARRO MILLS WSC	205	74	46	6	(43)	(99)
RICE	0	(62)	(76)	(96)	(119)	(146)
RICE WSC	1	(48)	(61)	(78)	(98)	(120)
COUNTY-OTHER	0	(132)	(149)	(359)	(905)	(2,028)
MANUFACTURING	0	(438)	(553)	(701)	(874)	(1,059)
MINING	1,193	1,005	794	504	270	0
STEAM ELECTRIC POWER	(8,000)	(13,440)	(13,440)	(13,440)	(13,440)	(13,440)
LIVESTOCK	78	78	78	78	78	78
IRRIGATION	168	168	168	168	168	168
PARKER COUNTY						
BRAZOS BASIN						
MINERAL WELLS	0	0	0	0	0	0
PARKER COUNTY SUD	236	49	(169)	(430)	(736)	(1,092)
WEATHERFORD	(152)	(160)	(175)	(288)	(653)	(1,109)
COUNTY-OTHER	300	502	658	(1,338)	(4,359)	(8,074)
MANUFACTURING	8	7	4	(1)	(7)	(9)
MINING	759	229	238	191	154	0
LIVESTOCK	352	352	352	352	352	352
IRRIGATION	476	476	476	476	476	476
TRINITY BASIN						
ALEDO	227	34	(294)	(442)	(471)	(561)
ANNETTA	202	175	146	116	84	52
ANNETTA NORTH	33	29	24	17	9	0
ANNETTA SOUTH	6	9	11	12	12	12
AZLE	(35)	(55)	(81)	(126)	(199)	(342)
CRESSON	9	1	0	0	0	0
FORT WORTH	(460)	(3,388)	(6,734)	(8,986)	(10,864)	(12,758)
HUDSON OAKS	106	92	52	(68)	(196)	(227)
RENO	44	37	29	19	8	(3)
SPRINGTOWN	(142)	(322)	(314)	(310)	(309)	(321)
WALNUT CREEK SUD	0	77	209	473	999	1,685
WEATHERFORD	(2,558)	(2,680)	(2,941)	(4,843)	(11,010)	(18,692)
WILLOW PARK	(2)	(147)	(317)	(726)	(1,167)	(1,609)
COUNTY-OTHER	205	155	111	(412)	(2,285)	(6,378)
MANUFACTURING	332	277	190	(41)	(352)	(486)
MINING	467	141	146	118	95	0
STEAM ELECTRIC POWER	120	78	34	(20)	(59)	(88)
LIVESTOCK	255	255	255	255	255	255
IRRIGATION	129	129	129	129	129	129

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
ROCKWALL COUNTY						
SABINE BASIN						
BLACKLAND WSC	(25)	(74)	(101)	(120)	(146)	(177)
CASH SUD	10	0	0	0	0	0
FATE	(72)	(272)	(422)	(515)	(632)	(1,090)
LAVON SUD	(10)	(42)	(70)	(117)	(175)	(245)
ROYSE CITY	(81)	(250)	(360)	(928)	(1,745)	(2,292)
COUNTY-OTHER	(20)	(63)	(82)	(95)	(181)	(278)
MANUFACTURING	(3)	(9)	(13)	(17)	(21)	(26)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	(4)	(12)	(20)	(26)	(30)	(33)
TRINITY BASIN						
BLACKLAND WSC	(27)	(91)	(119)	(146)	(174)	(209)
DALLAS	(1)	(3)	(6)	(10)	(13)	(19)
EAST FORK SUD	(5)	(18)	(29)	(40)	(55)	(74)
FATE	(64)	(302)	(545)	(867)	(1,278)	(2,204)
FORNEY LAKE WSC	(5)	(23)	(35)	(47)	(62)	(81)
GARLAND	(1)	(1)	(1)	(1)	(1)	(2)
HEATH	(310)	(1,832)	(2,299)	(2,613)	(2,940)	(3,302)
HIGH POINT WSC	(2)	(7)	(14)	(23)	(29)	(39)
LAVON SUD	(10)	(39)	(63)	(108)	(161)	(226)
MCLENDON-CHISHOLM	(101)	(173)	(241)	(319)	(406)	(506)
MOUNT ZION WSC	(31)	(113)	(173)	(233)	(309)	(403)
ROCKWALL	(700)	(2,586)	(3,976)	(5,371)	(7,115)	(9,273)
ROWLETT	(94)	(269)	(333)	(378)	(424)	(477)
WYLIE	(45)	(136)	(175)	(203)	(232)	(274)
COUNTY-OTHER	(25)	(67)	(81)	(89)	(526)	(1,047)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	(9)	(25)	(42)	(53)	(62)	(68)
TARRANT COUNTY						
TRINITY BASIN						
ARLINGTON	0	(6,249)	(13,660)	(20,228)	(25,658)	(30,451)
AZLE	(141)	(221)	(323)	(510)	(770)	(1,366)
BEDFORD	0	(799)	(1,838)	(2,888)	(3,649)	(4,328)
BENBROOK	(760)	(1,214)	(1,685)	(2,813)	(6,160)	(6,160)
BETHESDA WSC	(534)	(718)	97	94	(47)	(233)
BLUE MOUND	0	10	19	24	24	24
BURLESON	(354)	(493)	(655)	(1,046)	(1,404)	(1,696)
COLLEYVILLE	0	(881)	(2,017)	(3,082)	(3,898)	(4,623)
COMMUNITY WSC	0	(33)	(77)	(124)	(171)	(218)
CROWLEY	(423)	(770)	(1,264)	(1,897)	(2,971)	(3,677)
DALWORTHINGTON GARDENS	(17)	(116)	(192)	(239)	(280)	(318)
EDGECLIFF VILLAGE	(9)	(95)	(152)	(183)	(207)	(229)
EULESS	0	(686)	(1,457)	(2,127)	(2,684)	(3,184)
EVERMAN	63	76	90	103	105	105
FLOWER MOUND	(7)	(17)	(23)	(29)	(31)	(35)
FOREST HILL	(11)	(267)	(458)	(655)	(945)	(1,358)
FORT WORTH	(6,169)	(35,343)	(74,863)	(98,806)	(119,815)	(141,152)
GRAND PRAIRIE	(1,286)	(1,691)	(2,279)	(2,667)	(3,054)	(3,287)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
TARRANT COUNTY						
TRINITY BASIN						
GRAPEVINE	(505)	(2,096)	(3,793)	(5,156)	(6,276)	(7,241)
HALTOM CITY	(44)	(1,011)	(1,680)	(2,180)	(2,661)	(3,201)
HASLET	(4)	(112)	(213)	(587)	(943)	(1,194)
HURST	(219)	(1,162)	(1,856)	(2,225)	(2,521)	(2,784)
JOHNSON COUNTY SUD	374	297	213	116	40	(34)
KELLER	(223)	(2,512)	(4,084)	(4,945)	(5,610)	(6,193)
KENNEDALE	62	(47)	(211)	(306)	(386)	(442)
LAKE WORTH	(21)	(175)	(322)	(470)	(651)	(1,039)
LAKESIDE	35	32	28	23	23	23
MANSFIELD	(4,839)	(7,453)	(11,296)	(18,499)	(23,159)	(28,312)
NORTH RICHLAND HILLS	(7,090)	(7,159)	(6,863)	(6,965)	(7,135)	(7,447)
PANTEGO	111	122	131	136	137	137
PELICAN BAY	11	9	7	5	3	1
RENO	1	1	0	1	0	(1)
RICHLAND HILLS	(10)	(182)	(312)	(434)	(555)	(703)
RIVER OAKS	0	(73)	(155)	(224)	(283)	(335)
SAGINAW	(26)	(678)	(1,227)	(1,561)	(1,769)	(1,953)
SANSOM PARK	44	33	(4)	(15)	(31)	(51)
SOUTHLAKE	(251)	(2,384)	(4,533)	(6,280)	(8,017)	(9,833)
TROPHY CLUB	(15)	(76)	(124)	(150)	(171)	(189)
WATAUGA	(1,004)	(1,152)	(1,281)	(1,243)	(1,236)	(1,278)
WESTLAKE	(24)	(394)	(936)	(1,369)	(1,818)	(2,292)
WESTOVER HILLS	(39)	(188)	(314)	(389)	(452)	(510)
WESTWORTH VILLAGE	(3)	(81)	(140)	(180)	(218)	(256)
WHITE SETTLEMENT	(17)	(207)	(350)	(551)	(914)	(1,330)
COUNTY-OTHER	(85)	(1,184)	(1,905)	(3,729)	(5,602)	(8,439)
MANUFACTURING	571	(3,542)	(7,311)	(10,337)	(13,049)	(15,900)
MINING	342	11	188	129	87	54
STEAM ELECTRIC POWER	959	(981)	(2,072)	(2,301)	(2,489)	(2,656)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	2,228	2,107	1,966	1,840	1,737	1,646
WISE COUNTY						
TRINITY BASIN						
ALVORD	41	19	(4)	(38)	(65)	(91)
AURORA	0	(9)	(24)	(47)	(87)	(141)
BOLIVAR WSC	0	(14)	(30)	(51)	(72)	(96)
BOYD	0	(14)	(48)	(92)	(207)	(296)
BRIDGEPORT	0	(139)	(356)	(792)	(1,618)	(2,445)
CHICO	(1)	(7)	(15)	(205)	(316)	(446)
DECATUR	(1,113)	(1,801)	(2,611)	(4,013)	(5,044)	(6,101)
FORT WORTH	(88)	(593)	(1,318)	(2,054)	(2,835)	(3,692)
NEW FAIRVIEW	0	(36)	(73)	(123)	(171)	(229)
NEWARK	0	(54)	(150)	(267)	(448)	(663)
RHOME	0	(26)	(90)	(259)	(566)	(986)
RUNAWAY BAY	0	(35)	(84)	(149)	(214)	(304)
WALNUT CREEK SUD	0	17	51	109	230	382
WEST WISE SUD	0	(38)	(83)	(125)	(166)	(204)

Water User Group (WUG) Needs/Surplus

REGION C	WUG (NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
WISE COUNTY						
TRINITY BASIN						
COUNTY-OTHER	(467)	(510)	(533)	(1,808)	(3,105)	(4,376)
MANUFACTURING	(250)	(473)	(793)	(1,129)	(1,479)	(1,859)
MINING	1,125	286	(892)	(2,530)	(4,118)	(6,434)
STEAM ELECTRIC POWER	0	(131)	(441)	(709)	(1,207)	(1,595)
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	(381)	(381)	(381)	(381)	(381)	(381)

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
COLLIN COUNTY						
SABINE BASIN						
CADDO BASIN SUD	15	48	82	115	153	201
FARMERSVILLE	2	0	0	0	2	2
JOSEPHINE	20	87	147	206	231	259
NEVADA	1	3	5	19	53	107
ROYSE CITY	12	140	379	710	1,511	1,820
COUNTY-OTHER	2	10	8	9	9	11
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
ALLEN	850	3,799	4,936	5,684	6,450	7,315
ANNA	0	85	962	2,172	6,424	10,954
BLUE RIDGE	0	92	266	1,301	3,075	5,260
CADDO BASIN SUD	8	24	40	55	74	100
CARROLLTON	1	1	1	2	2	2
CELINA	1,311	5,736	11,872	19,892	19,815	20,189
COPEVILLE SUD	22	83	128	191	373	714
CULLEOKA WSC	23	82	172	237	291	406
DALLAS	114	692	1,757	2,672	3,492	4,069
EAST FORK SUD	18	74	115	158	213	282
FAIRVIEW	274	1,100	1,865	2,126	2,398	2,702
FARMERSVILLE	65	520	652	736	822	920
FRISCO	818	5,566	8,720	10,074	11,476	13,056
GARLAND	3	14	23	31	41	56
HICKORY CREEK SUD	0	0	2	4	5	7
LAVON	33	147	285	446	1,123	2,827
LAVON SUD	23	81	120	154	401	1,120
LOWRY CROSSING	15	57	87	98	110	123
LUCAS	87	358	649	854	1,092	1,260
MARILEE SUD	0	0	0	0	0	0
MCKINNEY	1,944	8,083	14,999	22,367	25,311	28,618
MELISSA	58	369	663	1,806	3,460	5,914
MURPHY	291	1,035	1,329	1,520	1,720	1,944
NEVADA	7	22	33	150	420	846
NEW HOPE	8	31	49	67	90	120
NORTH COLLIN WSC	54	194	280	358	460	590
PARKER	153	3,809	5,397	5,365	5,336	5,308
PLANO	3,852	13,965	18,302	21,397	24,102	27,161
PRINCETON	68	276	444	1,181	2,083	3,188
PROSPER	211	2,036	3,813	4,814	5,555	5,526
RICHARDSON	438	1,583	2,080	2,435	2,749	3,102
SACHSE	86	294	372	422	478	537
SEIS LAGOS UD	13	101	134	156	178	204
SOUTH GRAYSON WSC	0	0	0	0	0	12
ST. PAUL	19	67	92	108	125	140
WESTON	66	615	4,331	11,176	17,976	17,912
WYLIE	445	1,575	2,146	2,546	2,947	3,396
WYLIE NORTHEAST SUD	18	72	112	252	469	839
COUNTY-OTHER	73	225	288	1,497	2,476	4,562

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
COLLIN COUNTY						
TRINITY BASIN						
MANUFACTURING	233	847	1,131	1,399	1,739	2,145
STEAM ELECTRIC POWER	56	141	217	199	294	306
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
COOKE COUNTY						
RED BASIN						
GAINESVILLE	0	0	0	0	0	2
TWO WAY SUD	0	2	4	6	7	9
WOODBINE WSC	0	3	8	13	19	25
COUNTY-OTHER	0	0	0	0	0	190
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
BOLIVAR WSC	0	15	35	51	68	83
GAINESVILLE	0	0	0	0	0	1,382
LAKE KIOWA SUD	0	0	0	0	0	0
LINDSAY	0	0	0	0	141	435
MOUNTAIN SPRING WSC	0	0	0	0	277	740
MUENSTER	0	0	0	0	0	0
VALLEY VIEW	0	4	6	9	11	14
WOODBINE WSC	0	38	94	155	221	288
COUNTY-OTHER	0	0	0	0	0	1,090
MANUFACTURING	0	0	0	0	0	169
MINING	684	83	7	72	134	206
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
DALLAS COUNTY						
TRINITY BASIN						
ADDISON	168	760	1,610	2,368	3,112	3,789
BALCH SPRINGS	104	351	660	898	1,119	1,310
CARROLLTON	245	946	1,730	2,218	2,591	2,841
CEDAR HILL	269	1,285	2,797	4,170	4,886	5,361
COCKRELL HILL	16	51	87	108	169	392
COMBINE	37	47	61	75	96	112
COPPELL	299	1,161	2,121	2,726	3,185	3,492
DALLAS	1,821	11,745	33,661	57,383	81,121	97,993
DESOTO	211	911	1,946	2,777	3,537	4,186
DUNCANVILLE	231	781	1,356	1,695	1,957	2,133
EAST FORK SUD	17	69	110	151	198	259
FARMERS BRANCH	205	857	1,778	2,471	3,074	3,567
FERRIS	0	1	0	1	2	2
GARLAND	2,277	7,855	10,619	11,876	13,272	14,858
GLENN HEIGHTS	51	226	511	801	1,102	1,596
GRAND PRAIRIE	3,637	5,892	9,809	11,430	13,036	13,966
HIGHLAND PARK	0	0	0	0	0	0
HUTCHINS	39	171	383	590	806	1,015
IRVING	0	0	0	0	0	0
LANCASTER	235	1,065	2,248	3,211	4,129	4,944

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
DALLAS COUNTY						
TRINITY BASIN						
LEWISVILLE	4	17	31	43	52	52
MESQUITE	1,569	5,297	7,470	9,117	11,008	13,240
OVILLA	2	15	34	53	72	138
RICHARDSON	1,026	3,822	5,017	5,876	6,626	7,478
ROCKETT SUD	0	45	124	210	313	412
ROWLETT	609	2,075	2,615	2,933	3,279	3,671
SACHSE	226	766	970	1,104	1,242	1,400
SEAGOVILLE	813	1,132	1,512	1,918	2,486	2,702
SUNNYVALE	141	695	1,138	1,496	2,023	2,279
UNIVERSITY PARK	0	0	0	0	0	0
WILMER	16	53	148	352	644	1,284
WYLIE	28	87	112	131	148	175
COUNTY-OTHER	0	265	454	592	699	782
MANUFACTURING	2,047	5,541	9,195	11,941	13,832	15,263
MINING	49	90	69	0	0	0
STEAM ELECTRIC POWER	0	0	425	728	958	1,117
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
DENTON COUNTY						
TRINITY BASIN						
ARGYLE	0	344	900	1,149	1,238	1,360
ARGYLE WSC	0	0	0	33	63	106
AUBREY	0	155	323	502	660	873
BARTONVILLE	0	127	239	324	354	393
BOLIVAR WSC	0	102	255	442	673	942
CARROLLTON	379	1,510	2,754	3,531	4,125	4,524
CELINA	41	638	2,605	6,631	6,604	6,728
COPPELL	8	32	58	75	86	95
COPPER CANYON	0	4	18	39	56	87
CORINTH	764	2,001	2,526	2,909	3,060	3,215
CROSS ROADS	0	122	274	364	400	438
DALLAS	47	304	868	1,470	2,072	2,499
DENTON	2,546	10,517	19,547	31,296	52,076	68,799
DENTON COUNTY FWSD #10	0	598	1,113	1,496	1,649	1,808
DENTON COUNTY FWSD #1A	0	1,055	2,385	3,231	3,649	4,233
DENTON COUNTY FWSD #7	0	659	1,220	1,632	1,798	1,965
DOUBLE OAK	0	11	30	42	42	58
FLOWER MOUND	2,052	5,212	7,451	9,096	10,097	11,046
FORT WORTH	0	58	2,702	5,541	8,803	12,604
FRISCO	544	3,711	5,813	6,716	7,650	8,703
HACKBERRY	18	81	131	186	255	348
HICKORY CREEK	0	122	286	490	530	581
HIGHLAND VILLAGE	0	373	727	988	1,070	1,221
JUSTIN	239	356	655	790	836	906
KRUGERVILLE	0	66	141	217	239	261
KRUM	0	144	396	711	1,003	1,395
LAKE DALLAS	0	192	416	539	590	649
LAKEWOOD VILLAGE	0	0	0	0	0	0

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
DENTON COUNTY						
TRINITY BASIN						
LEWISVILLE	550	2,362	5,160	8,091	10,977	10,867
LITTLE ELM	287	1,023	1,301	1,468	1,641	1,838
MOUNTAIN SPRING WSC	0	0	0	0	5	10
MUSTANG SUD	0	416	1,384	2,669	3,835	6,397
NORTHLAKE	0	620	2,072	3,812	5,429	5,946
OAK POINT	0	257	664	1,143	1,541	1,691
PALOMA CREEK	0	685	1,253	1,673	1,840	2,144
PILOT POINT	0	0	333	837	1,469	2,354
PLANO	110	402	517	601	677	764
PONDER	0	0	0	90	230	389
PROSPER	9	349	1,430	3,284	5,379	5,348
PROVIDENCE VILLAGE WCID	0	197	354	467	511	554
ROANOKE	0	465	954	1,169	1,332	1,473
SANGER	0	0	99	323	574	958
SHADY SHORES	0	86	151	200	221	243
SOUTHLAKE	0	89	192	292	409	546
THE COLONY	271	1,074	1,813	2,424	2,779	3,065
TROPHY CLUB	0	838	1,516	1,880	2,156	2,394
WESTLAKE	0	7	15	22	31	42
COUNTY-OTHER	0	0	0	1,034	3,464	9,357
MANUFACTURING	116	380	656	935	1,249	1,501
MINING	0	170	540	1,208	1,841	2,687
STEAM ELECTRIC POWER	0	0	0	0	0	0
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
ELLIS COUNTY						
TRINITY BASIN						
BARDWELL	23	43	67	95	127	313
BRANDON-IRENE WSC	0	0	0	0	0	0
BUENA VISTA - BETHEL SUD	0	0	0	0	311	977
CEDAR HILL	4	16	40	68	78	86
ENNIS	0	83	568	1,690	5,537	12,556
FERRIS	28	75	142	213	553	1,393
FILES VALLEY WSC	0	0	0	0	0	0
GARRETT	0	0	0	195	438	1,377
GLENN HEIGHTS	13	54	119	188	269	451
GRAND PRAIRIE	0	1	4	7	7	11
ITALY	0	67	154	258	407	642
JOHNSON COUNTY SUD	0	0	0	0	0	6
MANSFIELD	8	12	19	33	44	58
MAYPEARL	0	0	0	0	0	0
MIDLOTHIAN	0	691	2,049	3,431	4,745	5,816
MILFORD	0	0	0	0	0	0
MOUNTAIN PEAK SUD	142	381	758	1,108	1,418	1,984
OAK LEAF	19	38	58	90	143	184
OVILLA	28	131	294	469	673	1,355
PALMER	62	128	210	297	435	916
PECAN HILL	33	58	90	124	174	290

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
ELLIS COUNTY						
TRINITY BASIN						
RED OAK	362	554	867	1,271	1,712	2,771
RICE WSC	0	264	378	539	764	1,042
ROCKETT SUD	0	940	2,180	3,429	5,322	7,212
SARDIS-LONE ELM WSC	586	1,224	2,076	2,636	3,198	3,575
VENUS	3	17	22	27	32	39
WAXAHACHIE	0	0	432	514	2,393	5,388
COUNTY-OTHER	0	0	0	808	4,087	8,713
MANUFACTURING	0	0	110	345	817	1,289
MINING	0	0	0	0	0	0
STEAM ELECTRIC POWER	0	0	2,291	4,398	4,459	4,964
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
FANNIN COUNTY						
RED BASIN						
BONHAM	0	0	723	1,872	2,822	3,932
ECTOR	0	4	8	13	20	29
HONEY GROVE	0	0	0	0	0	0
LEONARD	0	0	0	1	1	1
SAVOY	0	3	5	9	16	25
SOUTHWEST FANNIN COUNTY SUD	0	27	78	123	222	324
TRENTON	0	0	2	3	3	4
WHITEWRIGHT	0	0	0	0	0	0
COUNTY-OTHER	0	0	0	220	1,857	3,644
MANUFACTURING	0	1	24	48	64	80
MINING	42	42	42	42	42	42
STEAM ELECTRIC POWER	0	4,911	5,347	5,880	6,529	7,212
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
SULPHUR BASIN						
HICKORY CREEK SUD	0	0	4	11	19	24
HONEY GROVE	0	0	0	0	0	0
LADONIA	0	22	33	53	86	85
LEONARD	0	1	1	1	1	2
NORTH HUNT SUD	0	0	0	0	0	0
COUNTY-OTHER	0	0	0	56	435	873
MINING	14	14	14	14	14	14
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
HICKORY CREEK SUD	0	0	0	0	2	2
LEONARD	0	16	32	48	77	109
SOUTHWEST FANNIN COUNTY SUD	0	2	4	7	12	16
TRENTON	0	44	461	872	1,202	1,528
COUNTY-OTHER	0	0	0	14	196	462
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
FREESTONE COUNTY						
BRAZOS BASIN						
TEAGUE	0	0	0	0	36	99
COUNTY-OTHER	22	21	11	41	146	462
MINING	461	436	451	454	462	487
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
FAIRFIELD	0	0	0	191	426	898
FLO COMMUNITY WSC	0	0	0	0	0	0
OAKWOOD	0	0	0	0	0	0
TEAGUE	0	0	0	0	35	101
WORTHAM	10	16	20	24	141	179
COUNTY-OTHER	166	164	148	391	1,148	3,011
MANUFACTURING	0	0	0	0	0	0
MINING	3,874	3,667	3,788	3,820	3,882	4,083
STEAM ELECTRIC POWER	0	0	0	2,909	8,677	15,347
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
GRAYSON COUNTY						
RED BASIN						
BELLS	0	22	46	76	403	592
DENISON	0	130	688	1,319	2,626	4,824
HOWE	1	2	4	8	12	20
KENTUCKY TOWN WSC	0	0	0	0	0	0
LUELLA SUD	0	0	0	0	0	0
POTTSBORO	0	45	148	401	1,079	2,388
SHERMAN	0	96	713	1,844	4,727	10,826
SOUTHMAYD	0	0	0	0	0	72
SOUTHWEST FANNIN COUNTY SUD	0	18	63	126	255	416
TOM BEAN	0	1	0	0	6	21
TWO WAY SUD	0	102	211	337	586	838
WHITESBORO	0	0	0	0	2	71
WHITEWRIGHT	0	0	0	0	0	0
COUNTY-OTHER	0	0	0	0	0	361
MANUFACTURING	0	0	0	410	1,343	2,489
MINING	0	0	0	1	20	41
STEAM ELECTRIC POWER	0	3,929	3,929	3,929	3,929	3,929
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
COLLINSVILLE	0	40	93	154	262	411
GUNTER	0	98	263	411	559	708
HOWE	0	5	12	23	37	52
KENTUCKY TOWN WSC	0	0	0	0	0	0
LUELLA SUD	0	0	0	0	0	0
MARILEE SUD	0	0	0	0	0	0
SOUTH GRAYSON WSC	0	0	0	0	0	19
TIOGA	0	3	11	18	318	477
TOM BEAN	0	0	0	1	41	158

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
GRAYSON COUNTY						
TRINITY BASIN						
TWO WAY SUD	0	60	124	198	343	491
VAN ALSTYNE	0	14	47	87	646	1,370
WHITESBORO	0	0	0	0	2	93
WHITEWRIGHT	0	0	0	0	0	0
WOODBINE WSC	0	1	1	2	3	4
COUNTY-OTHER	0	0	0	0	0	7
MANUFACTURING	0	0	0	3	6	12
STEAM ELECTRIC POWER	0	2,619	2,619	2,619	2,619	2,619
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
HENDERSON COUNTY						
TRINITY BASIN						
ATHENS	51	36	0	0	1,350	3,780
BETHEL-ASH WSC	0	0	0	0	0	0
EAST CEDAR CREEK FWSD	248	302	435	530	695	869
EUSTACE	0	0	0	0	50	97
GUN BARREL CITY	316	373	467	612	1,130	2,104
LOG CABIN	0	0	0	0	0	0
MABANK	0	12	29	70	204	498
MALAKOFF	0	0	2	4	11	22
PAYNE SPRINGS	0	4	17	34	59	107
SEVEN POINTS	35	75	119	197	329	467
TOOL	59	114	169	234	501	814
TRINIDAD	0	0	0	0	0	0
VIRGINIA HILL WSC	0	0	0	0	0	0
WEST CEDAR CREEK MUD	90	152	209	267	437	658
COUNTY-OTHER	0	14	28	32	33	31
MANUFACTURING	0	0	0	0	11	89
MINING	0	16	36	53	67	79
STEAM ELECTRIC POWER	950	3,950	4,950	5,950	6,950	7,950
LIVESTOCK	0	0	0	0	0	0
JACK COUNTY						
BRAZOS BASIN						
BRYSON	0	0	0	0	0	0
COUNTY-OTHER	0	0	0	0	1	2
MANUFACTURING	0	0	0	0	0	0
MINING	392	468	449	462	477	515
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
JACKSBORO	0	0	0	0	0	0
COUNTY-OTHER	0	0	0	1	4	5
MINING	589	703	675	695	717	773
STEAM ELECTRIC POWER	0	259	605	956	1,288	1,626
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
KAUFMAN COUNTY						
SABINE BASIN						
ABLES SPRINGS WSC	13	54	85	118	159	213
MACBEE SUD	0	0	0	0	0	0
COUNTY-OTHER	6	7	18	46	56	129
MINING	0	0	3	11	18	26
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
ABLES SPRINGS WSC	9	36	56	77	105	140
COLLEGE MOUND WSC	54	220	388	580	913	1,289
COMBINE	85	122	169	227	313	409
CRANDALL	159	326	522	745	740	734
FORNEY	224	825	1,363	1,866	3,030	5,549
FORNEY LAKE WSC	50	210	326	451	858	1,391
GASTONIA-SCURRY SUD	82	208	308	412	1,080	2,255
HIGH POINT WSC	30	118	206	310	588	875
KAUFMAN	71	265	410	691	999	1,372
KEMP	28	53	103	172	389	677
MABANK	0	56	148	438	914	1,490
MACBEE SUD	0	0	0	0	0	0
MESQUITE	1	7	9	11	17	21
OAK GROVE	6	20	29	50	76	170
POST OAK BEND CITY	7	25	38	66	99	221
ROSE HILL SUD	32	122	186	252	371	638
SCURRY	5	17	24	41	65	163
SEAGOVILLE	2	2	3	4	6	8
SEVEN POINTS	3	5	10	16	26	39
TALTY	21	83	130	180	278	519
TALTY WSC	282	567	766	1,125	1,576	2,338
TERRELL	264	1,494	3,030	5,198	7,311	9,571
WEST CEDAR CREEK MUD	87	185	312	481	874	1,535
COUNTY-OTHER	113	221	512	1,095	2,416	3,820
MANUFACTURING	0	0	0	0	0	49
MINING	0	0	52	199	329	489
STEAM ELECTRIC POWER	0	0	0	0	0	0
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
NAVARRO COUNTY						
TRINITY BASIN						
BLOOMING GROVE	0	54	65	81	103	125
BRANDON-IRENE WSC	0	0	0	0	0	0
CHATFIELD WSC	0	158	180	209	243	277
CORBET WSC	0	93	113	140	174	214
CORSICANA	0	2,110	2,584	3,269	4,099	5,031
DAWSON	0	52	64	80	101	124
FROST	0	9	13	21	30	40
KERENS	0	75	90	113	140	172
M-E-N WSC	0	174	214	268	334	408
NAVARRO MILLS WSC	0	0	0	0	35	89

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
NAVARRO COUNTY						
TRINITY BASIN						
RICE	0	60	74	93	115	141
RICE WSC	0	46	59	76	95	116
COUNTY-OTHER	0	125	143	345	870	1,954
MANUFACTURING	0	438	553	701	874	1,059
MINING	0	0	0	0	0	0
STEAM ELECTRIC POWER	8,000	13,440	13,440	13,440	13,440	13,440
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
PARKER COUNTY						
BRAZOS BASIN						
MINERAL WELLS	0	0	0	0	0	0
PARKER COUNTY SUD	0	0	158	412	709	1,052
WEATHERFORD	144	143	104	250	590	1,011
COUNTY-OTHER	0	0	0	1,243	4,204	7,828
MANUFACTURING	0	0	0	1	6	8
MINING	0	0	0	0	0	0
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
TRINITY BASIN						
ALEDO	0	0	275	415	438	521
ANNETTA	0	0	0	0	0	0
ANNETTA NORTH	0	0	0	0	0	0
ANNETTA SOUTH	0	0	0	0	0	0
AZLE	32	50	77	120	190	328
CRESSON	0	0	0	0	0	0
FORT WORTH	0	100	3,823	6,127	8,096	10,101
HUDSON OAKS	0	0	0	37	163	191
RENO	0	0	0	0	0	0
SPRINGTOWN	137	314	307	300	297	306
WALNUT CREEK SUD	0	0	0	0	0	0
WEATHERFORD	2,424	2,398	1,727	4,205	9,948	17,034
WILLOW PARK	0	137	306	706	1,135	1,562
COUNTY-OTHER	0	0	0	383	2,203	6,183
MANUFACTURING	0	0	0	16	325	456
MINING	0	0	0	0	0	0
STEAM ELECTRIC POWER	0	0	0	20	59	88
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
ROCKWALL COUNTY						
SABINE BASIN						
BLACKLAND WSC	20	66	91	108	132	161
CASH SUD	0	0	0	0	0	0
FATE	55	243	379	464	570	987
LAVON SUD	9	40	68	112	167	233
ROYSE CITY	73	239	348	892	1,669	2,185
COUNTY-OTHER	18	60	79	91	173	265
MANUFACTURING	3	9	12	16	19	24
LIVESTOCK	0	0	0	0	0	0

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
ROCKWALL COUNTY						
SABINE BASIN						
IRRIGATION	4	8	12	16	18	20
TRINITY BASIN						
BLACKLAND WSC	20	79	106	130	156	188
DALLAS	0	1	3	6	8	14
EAST FORK SUD	5	17	28	38	53	71
FATE	49	269	489	780	1,153	1,995
FORNEY LAKE WSC	4	21	31	42	56	73
GARLAND	1	1	1	1	1	2
HEATH	232	1,614	2,036	2,325	2,626	2,962
HIGH POINT WSC	2	7	14	22	28	38
LAVON SUD	9	37	61	104	154	215
MCLENDON-CHISHOLM	95	162	226	299	380	474
MOUNT ZION WSC	24	101	155	210	279	365
ROCKWALL	370	2,095	3,318	4,537	6,070	7,987
ROWLETT	84	256	322	363	405	454
WYLIE	40	129	169	195	222	261
COUNTY-OTHER	22	63	78	86	503	997
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	8	17	26	33	39	40
TARRANT COUNTY						
TRINITY BASIN						
ARLINGTON	0	4,287	11,444	17,896	23,088	27,645
AZLE	129	204	306	487	735	1,312
BEDFORD	0	0	1,534	2,531	3,257	3,900
BENBROOK	648	1,028	1,458	2,517	5,683	5,648
BETHESDA WSC	475	549	0	0	0	0
BLUE MOUND	0	0	0	0	0	0
BURLESON	352	490	652	1,040	1,395	1,684
COLLEYVILLE	0	622	1,708	2,727	3,508	4,197
COMMUNITY WSC	0	29	73	118	163	208
CROWLEY	403	740	1,231	1,845	2,889	3,565
DALWORTHINGTON GARDENS	0	91	164	207	245	278
EDGECLIFF VILLAGE	0	82	137	167	190	211
EULESS	0	337	1,128	2,008	2,535	3,006
EVERMAN	0	0	0	0	0	0
FLOWER MOUND	6	16	21	27	29	32
FOREST HILL	0	251	444	632	909	1,302
FORT WORTH	0	1,055	42,501	67,355	89,313	111,765
GRAND PRAIRIE	1,132	1,479	2,198	2,560	2,920	3,127
GRAPEVINE	166	1,559	3,171	4,468	5,520	6,417
HALTOM CITY	0	950	1,627	2,104	2,559	3,068
HASLET	0	96	187	515	835	1,061
HURST	0	888	1,563	1,914	2,189	2,430
JOHNSON COUNTY SUD	0	0	0	0	0	24
KELLER	0	2,169	3,697	4,517	5,139	5,679
KENNEDALE	0	13	165	243	314	364
LAKE WORTH	0	142	281	418	583	939
LAKESIDE	0	0	0	0	0	0

Water User Group (WUG) Second-Tier Identified Water Need

REGION C	WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
TARRANT COUNTY						
TRINITY BASIN						
MANSFIELD	4,504	6,906	10,540	17,393	21,760	26,571
NORTH RICHLAND HILLS	6,857	6,805	6,468	6,530	6,657	6,925
PANTEGO	0	0	0	0	0	0
PELICAN BAY	0	0	0	0	0	0
RENO	0	0	0	0	0	1
RICHLAND HILLS	0	168	300	416	530	669
RIVER OAKS	0	64	147	214	270	320
SAGINAW	0	639	1,188	1,507	1,701	1,872
SANSOM PARK	0	0	0	7	20	37
SOUTHLAKE	0	2,006	4,040	5,662	7,262	8,926
TROPHY CLUB	0	58	104	129	149	166
WATAUGA	980	1,119	1,254	1,208	1,192	1,225
WESTLAKE	0	343	847	1,250	1,665	2,102
WESTOVER HILLS	0	103	224	293	351	404
WESTWORTH VILLAGE	0	76	136	174	210	245
WHITE SETTLEMENT	0	183	329	518	862	1,254
COUNTY-OTHER	35	1,115	1,848	3,604	5,394	8,095
MANUFACTURING	0	3,495	6,755	9,503	12,130	14,901
MINING	0	0	0	0	0	0
STEAM ELECTRIC POWER	0	0	0	0	129	296
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0
WISE COUNTY						
TRINITY BASIN						
ALVORD	0	0	2	35	61	86
AURORA	0	7	22	44	83	135
BOLIVAR WSC	0	12	29	49	69	92
BOYD	0	0	17	87	198	284
BRIDGEPORT	0	99	301	709	1,496	2,279
CHICO	0	1	8	191	297	420
DECATUR	1,070	1,721	2,489	3,838	4,818	5,815
FORT WORTH	0	18	749	1,399	2,113	2,923
NEW FAIRVIEW	0	34	71	119	165	221
NEWARK	0	51	147	261	437	646
RHOME	0	11	68	219	508	906
RUNAWAY BAY	0	24	71	132	192	276
WALNUT CREEK SUD	0	0	0	0	0	0
WEST WISE SUD	0	33	79	119	159	195
COUNTY-OTHER	437	468	498	1,741	2,997	4,220
MANUFACTURING	250	473	792	1,128	1,478	1,858
MINING	0	0	805	1,296	1,717	2,412
STEAM ELECTRIC POWER	0	131	441	709	1,207	1,595
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	381	381	380	380	380	380

***Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.**

Water User Group (WUG) Second-Tier Identified Water Need

Water User Group (WUG) Second-Tier Identified Water Need Summary

REGION C

	2020	2030	2040	2050	2060	2070
MUNICIPAL	57,794	199,065	399,475	590,081	789,577	990,636
COUNTY-OTHER	894	2,758	4,113	13,329	33,371	67,054
MANUFACTURING	2,649	11,184	19,228	26,446	33,893	41,392
MINING	6,105	5,689	6,931	8,327	9,720	11,854
STEAM ELECTRIC POWER	9,006	29,380	34,264	41,737	50,538	60,489
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	393	406	418	429	437	440

*Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.

Water User Group (WUG) Unmet Needs

REGION C	WUG UNMET NEEDS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
FREESTONE COUNTY						
BRAZOS BASIN						
MINING	461	436	451	454	462	487
TRINITY BASIN						
MINING	3,874	3,667	3,788	3,820	3,882	4,083
HENDERSON COUNTY						
TRINITY BASIN						
ATHENS	0	0	0	0	0	1,856
MANUFACTURING	0	0	0	0	0	62
JACK COUNTY						
BRAZOS BASIN						
MINING	100	99	99	99	106	100
TRINITY BASIN						
MINING	150	151	151	151	144	150

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The unmet needs shown in the WUG Unmet Needs report are calculated by first deducting the WUG split's projected demand from the sum of its total existing water supply volume and all associated recommended water management strategy water volumes. If the WUG split has a greater future supply volume than projected demand in any given decade, this amount is considered a surplus volume. In order to display only unmet needs associated with the WUG split, these surplus volumes are updated to a zero and the unmet needs water volumes are shown as absolute values.

Water User Group (WUG) Unmet Needs Summary

REGION C

	2020	2030	2040	2050	2060	2070
MUNICIPAL	0	0	0	0	0	1,856
COUNTY-OTHER	0	0	0	0	0	0
MANUFACTURING	0	0	0	0	0	62
MINING	4,585	4,353	4,489	4,524	4,594	4,820
STEAM ELECTRIC POWER	0	0	0	0	0	0
LIVESTOCK	0	0	0	0	0	0
IRRIGATION	0	0	0	0	0	0

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The unmet needs shown in the WUG Unmet Needs Summary report are calculated by first deducting the WUG split's projected demand from the sum of its total existing water supply volume and all associated recommended water management strategy water volumes. If the WUG split has a greater future supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG category level, calculated surpluses are updated to zero so that only the WUGs with unmet needs in the decade are included with the Needs totals. Unmet needs water volumes are shown as absolute values.

Wholesale Water Provider
Demand and Needs/Surplus by Basin and County

Wholesale Water Provider	County	Basin	Demand (ac-ft/yr)						Need/Surplus (ac-ft/yr)					
			2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2070
Argyle WSC	Denton	Trinity	2,391	3,055	3,956	3,951	3,949	3,948	0	-373	-1,044	-1,398	-1,535	-1,714
Arlington	Dallas	Trinity	854	896	1,374	1,374	1,831	1,831	-854	-896	-1,374	-1,374	-1,831	-1,831
	Ellis	Trinity	0	0	1	1	1	1	0	0	-1	-1	-1	-1
	Johnson	Brazos	42	48	56	63	72	82	-42	-48	-56	-63	-72	-82
	Johnson	Trinity	851	984	643	667	766	894	-851	-984	-643	-667	-766	-894
	Tarrant	Trinity	70,458	73,509	74,835	75,498	76,221	76,731	-1,069	-7,612	-16,010	-23,175	-29,237	-34,567
Athens Municipal Water Authority	Henderson	Neches	3,234	3,237	3,240	3,244	3,253	3,260	-36	-187	-306	-463	-1,277	-1,809
	Henderson	Trinity	2,432	2,711	2,949	3,293	5,970	9,273	-25	-156	-278	-469	-2,341	-5,144
Corsicana	Ellis	Trinity	620	769	951	1,174	1,447	1,761	0	-271	-380	-542	-765	-1,044
	Freestone	Brazos	14	12	8	13	25	61	0	-4	-3	-6	-13	-36
	Freestone	Trinity	107	104	105	129	208	403	0	-37	-42	-60	-110	-239
	Hill	Brazos	430	450	463	480	492	504	0	-158	-185	-222	-260	-299
	Hill	Trinity	205	209	210	217	223	228	0	-74	-84	-100	-118	-135
	Limestone	Brazos	100	110	117	125	133	142	0	-39	-47	-58	-70	-84
	Limestone	Trinity	80	85	90	97	102	105	0	-30	-36	-45	-54	-62
	Navarro	Trinity	9,907	16,068	16,851	18,102	19,808	21,910	0	-9,133	-9,955	-11,239	-12,978	-15,140
Cross Timbers WSC (formerly Bartonville WSC)	Denton	Trinity	1,819	1,923	1,953	1,988	2,037	2,091	0	-176	-347	-492	-562	-679
Dallas (Dallas Water Utilities)	Collin	Sabine	1,108	1,534	1,969	2,438	2,974	3,503	-3	-33	-97	-155	-270	-253
	Collin	Trinity	19,048	19,389	19,477	19,667	20,282	20,700	-15	-152	-478	-861	-1,664	-1,720
	Dallas	Trinity	423,375	464,641	518,016	574,751	631,327	668,127	-6,989	-24,596	-46,666	-66,576	-108,686	-97,718
	Denton	Trinity	60,172	64,431	69,033	75,357	82,142	83,989	-5,748	-19,767	-37,391	-53,619	-88,260	-79,254
	Ellis	Trinity	1,648	2,316	3,608	5,384	7,238	13,261	-417	-1,490	-2,739	-3,771	-6,074	-5,942
	Kaufman	Trinity	3	4	4	6	5	6	0	-2	-23	-77	-194	-352
	Rockwall	Sabine	488	494	498	507	523	534	-683	-3,745	-9,815	-16,560	-30,353	-29,309
	Rockwall	Trinity	221	230	238	249	266	276	0	0	0	0	0	0
	Tarrant	Trinity	11,680	12,448	12,439	12,492	12,720	12,948	-6,262	-21,627	-40,398	-56,831	-92,010	-82,333
Dallas County Park Cities MUD	Dallas	Trinity	11,678	11,656	11,533	11,470	11,459	11,458	-97	-136	-115	-153	-191	-229
	Tarrant	Trinity	3,311	3,677	3,716	3,701	3,698	3,698	0	0	0	0	0	0
Denison	Grayson	Red	8,116	8,919	9,664	10,472	12,089	14,708	4	-735	-1,421	-2,181	-3,711	-6,241
	Grayson	Trinity	23	23	23	27	17	12	0	0	0	0	0	0
Denton	Denton	Trinity	31,160	39,934	49,768	62,433	84,594	102,615	-3,204	-11,891	-21,639	-34,217	-56,291	-74,217
East Cedar Creek FWSD	Henderson	Trinity	1,758	1,881	2,116	2,374	3,093	4,301	0	-169	-414	-687	-1,132	-1,867
Ennis	Ellis	Trinity	6,647	7,401	8,198	10,853	16,378	26,644	-156	-510	-1,312	-3,216	-8,741	-19,008
	Navarro	Trinity	9	8	6	6	7	8	0	0	-1	-2	-4	-6
Forney	Kaufman	Trinity	13,937	14,810	16,406	18,554	22,645	27,409	1,231	-56	-1,027	-2,167	-4,292	-8,252
	Kaufman	Sabine	0	0	4	14	15	27	0	0	-3	-9	-9	-16
	Rockwall	Trinity	98	120	147	173	205	236	-7	-29	-52	-83	-116	-152
Fort Worth	Dallas	Trinity	8,454	9,453	11,026	10,992	10,888	10,744	-719	-2,314	-4,033	-4,751	-5,184	-5,538
	Denton	Trinity	23,160	30,464	37,190	39,374	41,390	41,623	-396	-4,732	-10,874	-14,392	-17,348	-19,398
	Ellis	Trinity	4	5	6	7	7	8	0	-1	-3	-3	-4	-4
	Johnson	Trinity	17,847	23,243	29,210	32,275	35,989	40,300	-2,107	-6,413	-11,538	-15,095	-18,840	-23,008
	Johnson	Brazos	143	193	260	310	371	432	-4	-33	-79	-117	-160	-206
	Parker	Trinity	1,894	3,464	5,921	6,255	6,588	6,502	-10	-539	-1,730	-2,287	-2,760	-3,029
	Tarrant	Trinity	240,921	281,205	326,776	366,204	402,118	441,149	-8,991	-51,002	-99,142	-135,780	-170,066	-206,583
Gainesville	Cooke	Red	64	63	38	67	120	401	31	26	21	17	10	-199
	Cooke	Trinity	3,541	3,194	3,162	3,516	4,886	8,824	2,378	2,758	2,306	2,159	1,581	-2,158
	Denton	Trinity	0	39	60	82	109	136	865	846	846	840	825	810
	Grayson	Trinity	0	1	1	2	3	5	9	8	8	7	6	4
	Wise	Trinity	0	5	7	9	11	12	111	103	97	90	85	79
Garland	Collin	Trinity	103	95	121	121	155	169	606	417	458	338	405	327
	Dallas	Trinity	41,217	41,643	41,406	41,208	41,149	41,175	-3,238	-9,731	-12,162	-13,774	-15,476	-17,394
	Kaufman	Trinity	8,979	8,979	8,979	8,979	8,979	8,979	0	0	0	0	0	0
	Rockwall	Trinity	1	1	1	1	1	2	-1	-1	-1	-1	-1	-2
Grand Prairie	Dallas	Trinity	28,235	34,042	37,491	37,281	37,226	37,219	-4,554	-7,187	-10,681	-12,467	-14,234	-15,308
	Ellis	Trinity	48	51	52	53	60	60	-4	-6	-8	-10	-14	-16
	Tarrant	Trinity	9,042	8,890	8,831	8,823	8,839	8,873	-1,418	-1,890	-2,556	-3,001	-3,439	-3,720
Greater Texoma Utility Authority	Collin	Trinity	1,943	4,913	8,320	15,269	26,437	38,361	-143	-5,079	-7,498	-12,151	-22,289	-31,653
	Grayson	Red	15,014	28,275	29,543	30,609	34,650	44,520	-182	-12,465	-13,413	-14,587	-20,289	-32,465
	Grayson	Trinity	2,768	5,034	5,033	4,915	6,630	7,469	-4	-653	-678	-722	-1,806	-2,898
Lake Cities MUA	Denton	Trinity	2,140	2,406	2,715	2,915	2,909	2,908	0	-409	-868	-1,261	-1,385	-1,529
Mansfield	Ellis	Trinity	975	1,080	1,231	1,347	1,518	1,685	-913	-1,017	-1,166	-1,283	-1,450	-1,614
	Dallas	Trinity	5,124	5,376	5,493	5,493	5,494	5,492	-2,959	-3,035	-3,056	-3,211	-3,434	-3,631
	Johnson	Trinity	721	1,024	1,338	1,680	2,054	2,454	-184	-347	-572	-894	-1,186	-1,515
	Tarrant	Trinity	30,133	32,884	37,107	45,400	50,638	56,299	-14,682	-17,119	-20,847	-28,119	-32,759	-37,896
Midlothian	Dallas	Trinity	2,629	2,789	2,867	2,876	2,869	2,865	-266	-279	-289	-300	-299	-302
	Ellis	Trinity	8,407	10,052	12,204	14,340	16,452	18,351	-2,732	-4,052	-6,063	-8,133	-10,238	-12,216
	Johnson	Trinity	418	505	596	700	812	934	-149	-231	-334	-440	-551	-666
	Tarrant	Trinity	799	674	615	615	616	615	-69	-52	-44	-44	-45	-45
Mustang SUD	Denton	Trinity	7,182	12,154	14,554	16,837	19,056	20,723	0	-2,245	-5,022	-7,862	-9,924	-11,941
North Richland Hills	Tarrant	Trinity	15,632	16,169	15,879	15,718	15,686	15,684	-5,335	-6,058	-6,294	-6,571	-6,878	-7,353

Wholesale Water Provider
Demand and Needs/Surplus by Basin and County

Wholesale Water Provider	County	Basin	Demand (ac-ft/yr)						Need/Surplus (ac-ft/yr)					
			2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2070
North Texas Municipal Water District	Collin	Sabine	773	1,469	2,542	3,953	6,789	7,659	-53	-330	-722	-1,301	-2,548	-3,247
	Collin	Trinity	211,875	243,788	286,090	324,813	347,564	372,413	-16,133	-58,802	-87,132	-112,804	-136,064	-162,059
	Dallas	Trinity	106,358	112,451	117,759	124,594	133,840	141,308	-8,179	-25,594	-33,609	-41,166	-50,308	-59,972
	Denton	Trinity	25,222	32,926	40,614	45,206	50,691	52,552	-1,939	-7,625	-12,347	-16,869	-22,323	-25,182
	Fannin	Red	2,291	2,885	3,953	5,516	7,081	8,889	0	-16	-857	-2,292	-3,644	-5,280
	Hopkins	Sabine	10	10	13	12	13	11	-3	-4	-6	-6	-7	-6
	Hunt	Sabine	3,045	3,921	5,193	6,298	7,847	9,921	-829	-1,568	-2,300	-3,034	-4,150	-5,711
	Hunt	Sulphur	28	32	41	45	53	54	-10	-14	-19	-23	-30	-34
	Hunt	Trinity	4	15	22	52	7	45	-2	-9	-14	-38	-6	-40
	Kaufman	Sabine	217	277	343	428	540	669	-17	-63	-98	-142	-203	-284
	Kaufman	Trinity	13,449	19,071	23,804	30,470	40,689	51,918	-1,506	-4,823	-8,280	-13,276	-20,143	-29,691
	Rains	Sabine	56	63	74	66	54	52	-17	-27	-34	-32	-28	-28
	Rockwall	Sabine	2,484	2,952	3,602	6,500	9,333	12,197	-210	-690	-1,049	-2,602	-3,845	-5,594
	Rockwall	Trinity	13,979	17,322	21,171	25,229	32,850	41,826	-1,642	-4,409	-6,468	-8,314	-13,274	-19,242
	Van Zandt	Sabine	2	5	2	2	2	4	0	-1	0	-1	-1	-2
Princeton	Collin	Trinity	1,302	1,606	2,171	4,419	6,605	8,928	-102	-375	-638	-1,477	-2,484	-3,772
Rockett SUD	Dallas	Trinity	205	310	416	520	625	733	-28	-87	-179	-274	-387	-499
	Ellis	Trinity	10,888	12,828	15,130	17,186	20,958	28,154	-3,454	-5,708	-8,380	-10,686	-14,622	-21,936
Rockwall	Hunt	Sabine	7	7	7	8	6	7	-1	-2	-2	-3	-2	-3
	Rockwall	Sabine	562	615	654	716	870	1,017	-44	-143	-191	-238	-327	-430
	Rockwall	Trinity	14,124	20,264	22,882	25,546	29,570	33,654	-1,109	-4,738	-6,724	-8,542	-11,123	-14,219
Sabine River Authority	See Region D Regional Water Plan													
Seagoville	Dallas	Trinity	2,300	2,660	3,035	3,430	3,852	3,869	-929	-1,279	-1,684	-2,131	-2,752	-3,013
	Kaufman	Sabine	3	10	13	21	21	45	-1	-5	-7	-13	-15	-35
	Kaufman	Trinity	515	568	726	989	2,014	3,689	-231	-292	-419	-629	-1,600	-3,271
Sherman	Collin	Trinity	169	172	176	177	182	183	-28	-39	-56	-74	-101	-127
	Grayson	Red	19,997	20,675	22,368	24,447	29,385	38,405	-179	-836	-2,487	-4,527	-9,355	-18,297
	Grayson	Trinity	2,766	2,911	3,166	3,370	3,837	4,309	-78	-230	-505	-720	-1,260	-1,767
	Fannin	Red	0	0	0	0	1	1	0	0	0	0	-1	-1
Sulphur River Basin Authority[a]	Multiple	Multiple	0	0	0	72,670	127,120	489,800	0	0	0	-72,670	-127,120	-489,800
Sulphur River Municipal Water District (located in Region D)	See Region D Regional Water Plan													
Tarrant Regional Water District	Denton	Trinity	10,073	14,911	20,866	29,598	38,257	47,446	55	-1,726	-4,828	-9,187	-14,345	-21,144
	Ellis	Trinity	90	97	111	138	166	200	-36	-54	-64	-87	-112	-145
	Freestone	Trinity	9,985	9,893	9,769	9,801	9,844	9,966	0	-791	-1,709	-2,624	-3,444	-4,359
	Henderson	Trinity	2,990	2,949	3,147	3,293	3,878	4,908	-383	-737	-1,046	-1,381	-2,130	-3,366
	Jack	Trinity	3,956	4,235	4,491	4,816	5,149	5,549	0	-339	-786	-1,290	-1,802	-2,427
	Johnson	Trinity	2,004	2,634	3,155	4,916	6,345	7,617	-795	-1,458	-1,828	-2,691	-3,633	-4,775
	Kaufman	Sabine	31	31	31	31	32	31	0	-2	-5	-8	-11	-14
	Kaufman	Trinity	2,510	2,883	3,278	4,146	5,469	7,482	-90	-399	-746	-1,473	-2,834	-4,986
	Parker	Brazos	12	89	179	551	1,106	1,823	0	-10	-31	-195	-723	-1,453
	Parker	Trinity	22,074	33,324	38,648	49,962	64,875	83,237	-728	-4,796	-9,180	-15,990	-28,520	-45,410
	Tarrant	Trinity	427,122	474,196	529,053	581,273	630,249	682,764	-30,481	-89,236	-150,463	-215,626	-278,849	-353,463
	Wise	Trinity	17,853	20,452	24,216	28,839	34,965	41,275	-852	-2,828	-5,355	-8,773	-13,287	-19,066
Terrell	Hunt	Sabine	268	361	501	697	1,047	1,526	-23	-86	-148	-234	-395	-645
	Hunt	Sulphur	1	0	0	0	0	0	0	0	0	0	0	0
	Hunt	Trinity	5	10	13	29	5	21	0	-2	-4	-10	-2	-9
	Kaufman	Trinity	4,962	8,223	10,106	12,763	15,858	19,102	-410	-1,920	-3,841	-6,618	-9,883	-13,371
	Kaufman	Sabine	2	5	13	35	41	84	0	-1	-5	-18	-25	-57
	Rockwall	Trinity	98	121	145	169	201	232	-7	-29	-53	-85	-121	-158
Trinity River Authority (Region C only)	Dallas	Trinity	577	1,029	1,470	1,619	1,814	2,085	-677	-947	-1,249	-2,113	-1,928	-1,977
	Ellis	Trinity	39,857	45,392	53,791	65,636	82,501	111,837	23,288	1,936	-9,721	-35,560	-51,666	-80,587
	Freestone	Trinity	0	0	0	14,177	13,307	12,686	0	0	0	47,499	34,702	28,554
	Navarro	Trinity	50,901	44,169	39,582	32,106	28,149	24,944	-81,487	-50,318	-36,405	-42,086	-27,822	-20,803
	Tarrant	Trinity	113,532	107,897	104,525	92,036	86,282	82,254	-17,599	-22,097	-29,243	-51,406	-45,962	-43,997
Upper Neches River Municipal Water Authority	see Region I Regional Water Plan													
Upper Trinity Regional Water District	Collin	Trinity	5,808	9,929	16,413	24,822	24,787	24,469	18,790	-2,731	-10,788	-19,044	-20,490	-22,057
	Denton	Trinity	40,411	56,237	68,250	81,743	94,862	110,682	-10,059	-5,199	-22,362	-38,632	-52,343	-72,112
	Tarrant	Trinity	45	57	57	53	54	54	0	-6	-18	-24	-29	-33
Walnut Creek SUD	Parker	Brazos	127	160	175	215	282	372	0	-15	-34	-62	-123	-212
	Parker	Trinity	1,684	1,864	2,120	2,712	3,979	5,262	0	58	170	401	849	1,399
	Tarrant	Trinity	1	1	0	1	0	0	0	0	0	0	0	0
	Wise	Trinity	2,592	3,160	3,876	5,248	7,701	10,073	-1,825	-2,157	-2,597	-3,473	-5,405	-7,427
Waxahachie	Ellis	Trinity	10,649	11,682	15,756	20,480	24,612	29,455	2,367	1,025	-3,381	-5,738	-9,124	-14,017
Weatherford	Parker	Brazos	309	359	422	1,752	2,693	3,764	-152	-158	-175	-1,367	-2,303	-3,355
	Parker	Trinity	6,031	7,230	8,587	13,691	21,136	30,713	-2,560	-2,856	-3,302	-6,192	-13,866	-23,201
West Cedar Creek MUD	Henderson	Trinity	1,557	1,638	1,714	1,865	2,425	3,058	-207	-375	-536	-747	-1,341	-2,043
	Kaufman	Trinity	985	1,221	1,495	1,816	2,509	3,594	-135	-284	-473	-734	-1,393	-2,409
Wise County WSD	Wise	Trinity	3,558	4,321	5,184	7,898	10,230	12,553	-1,708	-2,471	-3,334	-6,048	-8,380	-10,703

[a] These demands and needs are for Tarrant Regional Water District (TRWD), Upper Trinity Regional Water District (UTRWD), and North Texas Municipal Water District (NTMWD). SRBA currently has no supplies available for allocation. The approximate division of the demands and needs/surpluses by basin and county can be seen by looking at TRWD, UTRWD, and NTMWD who each are contracted to receive 57%, 7%, and 36%, respectively of the SRBA supplies.

Appendix V

APPENDIX V

COMMENTS ON INITIALLY PREPARED PLAN

APPENDIX V
COMMENTS ON INITIALLY PREPARED PLAN

Count*	Name	Representing
Comments Received via letter or report format		
1	Jeff Walker	Texas Water Development Board
2	Ross Melinchuck	Texas Parks and Wildlife
3	Transcript of June 24, 2015 Public Hearing	
4	Oran Caudle	self
5	David Foster & Rita Beving	Clean Water Fund
6	Denis W. Qualls, P.E.	Dallas Water Utilities
7	Jo M. (Jody) Puckett, P.E.	Dallas Water Utilities
8	Kara Shuror	City of Fort Worth
9	Rachel Baker Ford	Garland Democratic Voice
10	Ken Kramer	Lone Star Chapter of the Sierra Club
11	Wayne Owen	Tarrant Regional Water District
12	Janice Bezanson	Texas Conservation Alliance
13	Monty D. Shank	Upper Neches River Municipal Water Authority
14	Larry Patterson	Upper Trinity Regional Water District
Comments Received via email		
Count**	**Name**	**Subject Line**
15	Sharon Manicom	Water Conservation
16	Curtis and Jane Hoffman	from Curtis and Jane Hoffman Dallas TX
17	Judy Jones	PROPER WATER CONSERVATION
18	Margaret and Clay Elkins	Regional Reservoirs Not a good option
19	Pavlos and Deborah Papathanasiou	water recycling project that we all want tohe
20	Judy and Tristan Hunt	Water Conservation
21	Susan Chazanow	Region C Water Plan
22	Patty Canavan	Reservoirs
23	Carol Reeder	Water Conservation
24	John & Sandra Dickey	Water planning
25	Jane Shaw Taylor	water recycling
26	Mike Shelby and Susan Bishop	New reservoirs North Texas
27	Anne Redelfs	Region C water
28	Becky Bornhorst	Region C comments
29	League of Women Voters of Dallas (Susybelle Gosslee)	Testimony from League of Women Voters of Dallas on Region C Water Plan
30	Sharon Richey	Region C Water - What's needed: Additional conservation, and additional education to get the job done
31	283 Individuals (listed at the end of the comment letter)	Comments on the 2016 Region C Initially Prepared Plan (IPP)

*After initial comments by TWDB, TPWD & Transcript of Public Hearing, letter comments are listed alphabetically according to entities represented (or last name of commenter if representing self).
** Email comments are listed according to the date they were received.

Texas Water Development Board
P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

August 25, 2015

Ms. Jody Puckett, Chair
c/o City of Dallas Water Utilities
1500 Marilla St., RM 4AN
Dallas, Texas 75201

Mr. Kevin Ward Kevin
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004

Re: Texas Water Development Board Comments on the Region C Initially Prepared Plan, Contract No. 1148301314

Dear Ms. Puckett and Mr. Ward:

Texas Water Development Board (TWDB) staff completed a review of the Initially Prepared Plan (IPP) submitted by May 1, 2015 and the supplemental information that constitutes Appendix Y submitted on August 19, 2015 on behalf of the Region C Regional Water Planning Group. The attached comments follow this format:

- **Level 1:** Comments, questions, and online regional water planning database revisions that must be satisfactorily addressed in order to meet statutory, agency rule, and/or contract requirements; and,

- **Level 2:** Comments and suggestions for consideration that may improve the readability and overall understanding of the regional water plan.

As previously requested by our Executive Administrator, please inform TWDB in advance of your final plan if your planning group believes that an interregional conflict exists. Additionally, subsequent review will be performed as the planning group completes its data entry into the regional water planning database (DB17). If issues arise during our ongoing data review, they will be communicated promptly to the planning group to resolve.

Title 31 TAC§357.50(d) requires the regional water planning group to consider timely agency and public comment. Section 357.50(e) requires the final adopted plan include summaries of all timely written and oral comments received, along with a response explaining any resulting revisions or why changes are not warranted. Copies of TWDB's Level 1 and 2 written comments and the region's responses must be included in the final, adopted regional water plan. While the comments included in this letter represent TWDB's review to date, please anticipate the need to respond to additional comments regarding data integrity, including any water source overallocations, in the regional water planning database (DB17) once data entry is completed by the region.

Standard to all planning groups is the need to include certain content in the final regional water plans that was not yet available at the time that IPPs were prepared and submitted. In your final regional water plan, however please be sure to also incorporate the following:

a) Completed results from the regional planning group's infrastructure financing survey (IFR) for sponsors of recommended projects with capital costs *[31 TAC §357.44]*;
b) Completed results from the implementation survey *[31 TAC §357.45(a)]*;
c) The socioeconomic impact evaluation provided by TWDB at the request of the planning group *[31 TAC §357.33(c)]*;
d) Documentation that comments received on the IPP were considered in the development of the final plan *[31 TAC §357.50(d)]*;
e) Evidence, such as a certification, that the final, adopted regional water plan is complete and adopted by the planning group *[31 TAC §357.50(j)(1)]*; and,
f) The required DB17 reports, as made available by TWDB, in the executive summary or elsewhere in the plan as specified in the Contract *[31 TAC §357.50(e)(2)(B), Contract Scope of Work Task 4D(p), Contract Exhibit 'C', Table 2]*. Please ensure that the numerical values presented in the tables throughout the final, adopted regional water plan are consistent with the data provided in DB17. For the purpose of development of the 2017 State Water Plan, water management strategy and other data entered by the regional water group in DB17 (and as presented in the regional plan) shall take precedence over any conflicting data presented in the final regional water plan. *[Contract Exhibit 'C', Sections 12.1.3. and 12.2.2]*

The following items must accompany, separately, the submission of the final, adopted regional water plan:

- The prioritized list of all recommended projects in the regional water plan *[Texas Water Code 15.436(a), Contract Scope of Work Task 13]*; and,
- Any remaining hydrologic modeling files or GIS files that may not have been provided at the time of the submission of the IPP but that were used in developing the final plan. *[31 TAC §357.50(e)(2)(C), Contract Exhibit 'C', Section 12.2.1; Contract Scope of Work Task 3-III-13]*

Note that provision of certain content in an electronic-only form is permissible as follows: Internet links are permissible as a method for including model conservation and drought contingency plans within the final regional water plan; hydrologic modeling files may be submitted as electronic appendices, however all other regional water plan appendices should be incorporated in hard copy format within each plan. *[31 TAC §357.50(e)(2)(C), Contract Scope of Work Task 5e, Contract Exhibit 'C', Section 12.2.1]*

The following general requirements that apply to recommended water management strategies must be adhered to in all final regional water plans including:

- Regional water plans must not include any strategies or costs that are associated with simply maintaining existing water supplies or replacing existing infrastructure. Plans may include only infrastructure costs that are associated with volumetric increases of treated water supplies delivered to water user groups or that result in more efficient use of existing supplies *[31 TAC §357.10(28), §357.34(d)(3)(A), Contract Exhibit 'C", Section 5.1.2.2, Section 5.1.2.3]*; and,
- Regional water plans must not include any retail distribution-level infrastructure costs (other than those costs related to conservation strategies such as water loss reduction). *[31 TAC §357.10(28), §357.34(d)(3)(A), Contract Exhibit 'C", Section 5.1.2.3]*

To facilitate efficient and timely completion, and Board approval, of your final regional water plan, please provide your TWDB project manager with early drafts of your responses to these IPP comments for preliminary review and feedback.

If you have any questions regarding these comments or would like to discuss your approach to addressing any of these comments, please do not hesitate to contact Connie Townsend at (512) 463-8290. TWDB staff will be available to assist you in any way possible to ensure successful completion of your final regional water plan.

Sincerely,

Jeff Walker
Deputy Executive Administrator
Water Supply and Infrastructure

Attachments

cc w/att: Ms. Amy Kaarlela, Freese & Nichols, Inc.

TWDB Comments on the Initially Prepared 2016 Region C Regional Water Plan

Level 1:	**Comments and questions must be satisfactorily addressed in order to meet statutory, agency rule, and/or contract requirements.**

1. Please consider including a general statement clarifying whether or not the planning group met all requirements under the Texas Open Meetings Act in the final, adopted regional water plan. *[31 Texas Administrative Code (TAC) §357.21 and §357.50(d)]*

2. Please describe how publicly available plans for major agricultural, municipal, manufacturing and commercial water users were considered in the final, adopted regional water plan. *[31 TAC §357.22(a)(4)]*

3. Chapter 2: Please include a summary of the the municipal demand savings due to plumbing fixture requirements (as previously provided by TWDB) in the final, adopted regional water plan. *[31 TAC §357.31(d)]*

4. Please provide a statement regarding any water availability requirements promulgated by a county commissioners court pursuant to Texas Water Code (TWC) §35.019, which in Region C applies to the North-Central Texas Trinity and Woodbine Aquifers Priority Groundwater Management Areas. *[31 TAC §357.22(a)(6)]*

5. The plan does not appear to include a listing of the water rights that are the basis for the surface water availability in the plan. Please include such a listing in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.1]*

6. The plan does not appear to tabulate the local supplies used in the plan along with an explanation of the basis of the associated local supply water volumes. Please include the required information on local supplies in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.3]*

7. Please clarify how the run-of-river availabilities were calculated for municipal water users to ensure that all monthly demands are fully met for the entire simulation of the unmodified Texas Commission on Environmental Quality Water Availability Model run 3 in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.4]*

8. The plan does not appear to include documentation of the public process for identifying potentially feasible water management strategies. Please include this documentation in the final, adopted regional water plan. *[31 TAC §357.12(b)]*

9. Page 3.2, Table 3.1: Please include a description of the basis for the estimated increase in reuse availability between 2020 and 2070. *[31 TAC §357.32(a)(1)]*

10. Page 5B.5,Table 5B.2; Appendix P: The plan in some instances, does not appear to include a quantitative reporting of environmental factors. For example, the summary table 5B.2 for water management strategy evaluations in Appendix P appears to present qualitative scores (e.g., "medium") but it is unclear if the scores are based upon quantitative data. Please include quantitative reporting in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(B)]*

11. Page 5B.5,Table 5B.2; Appendix P: The plan in some instances, does not appear to include a quantitative reporting of impacts to agricultural resources. For example, the summary table 5B.2 for water management strategy evaluations in Appendix P appear to present qualitative (e.g., "medium") scores but it is unclear if the scores are based upon quantitative data. Please include quantitative reporting in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(C)]*

12. Pages 5B.10, 11.16, and P.57: The plan appears to incorporate by reference Marvin Nichols strategy evaluation material from the 2011 Region C Regional Water Plan. For example, page P.57 states that "Region C is retaining the original configuration of Marvin Nichols Reservoir (at elevation 328 msl, as detailed in the 2011 Region C Water Plan) as an alternative water management strategy for the 2016 Region C Water Plan." Please include the relevant additional strategy information for that alternative strategy in the final, adopted regional water plan. *[31 TAC §357.34(e)]*

13. Page 5C.10; Appendix P, Pages P.8 and P.62: In some instances, the plan appears to present incomplete water management strategy evaluations. For example, the George Parkhouse Lake (South) strategy and the Neches River Run-of-River strategy configurations. The Neches Run-of-River strategy states the preferred project "would include run-of-river diversion …operated conjunctively with tributary storage, groundwater, and/or system operations with Lake Palestine…", however it is not clear that the strategy evaluation for the conjunctive components of the project are included. Please clarify strategy labels or include the full strategy evaluations for all alternative and recommended strategies in the final, adopted regional water plan. *[31 TAC §357.35(g)(3)]*

14. Pages 5D.285 and 5D.288: The plan does not appear to consider conservation as a potentially feasible strategy for all identified water supply needs. For example, there does not appear to be an explanation for why Navarro County Manufacturing and Steam Electric Power Water User Groups (WUGs) do not have conservation strategies. Please include documentation that conservation was considered to meet identified needs and, if not recommended, please document reason in the final, adopted regional water plan. *[31 TAC §357.34(c)(3), §357.34(f)(2)(B)]*

15. Pages 5E.30 and 5E.31; Appendices P and Q: Some conservation water management strategies for municipal, manufacturing, and mining WUGs appear to be combined with reuse strategies. For example, the components listed on page 5E.30 for the 'Expanded Water Conservation Package' WMS include "reuse of treated wastewater effluent." Unless the projects are directly interdependent, and reflected as such in the regional water planning database, each strategy type must be associated with separate volumes of water provided and should not be lumped together with other types of strategies. Strategy types must remain independent of one another to reflect implementation and to facilitate project prioritizations for funding. Please modify as appropriate throughout the final, adopted regional water plan and in the regional water planning database. *[31 TAC §357.34(e); Contract Exhibit 'D', Section 5.3]*

16. Chapter 5: Please confirm that the calculated firm yields are based upon water available during the drought of record for the strategies utilizing sources from Lake Hugo, Lake Palestine, Lake Ralph Hall and Reuse, Lake Texoma, Lower Bois d'Arc Reservoir, Neches

River Run-of-River, and Toledo Bend Reservoir. Please clarify in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.4]*

17. Chapter 7: The plan does not appear to provide a general description of the local drought contingency plans that involve making emergency connections between water systems or wholesale systems. Please include these descriptions of local drought contingency plans, if any, in the final, adopted regional water plan or, if no local drought contingency plans involve making emergency connections, please indicate so in the final, adopted regional water plan. *[31 TAC §357.42(e)]*

18. Please clarify whether the plan development was guided by the principal that the designated water quality and related water uses as shown in the state water quality management plan shall be improved or maintained. *[31 TAC §358.3(19); Contract Exhibit 'C', Section 3.3]*

19. Appendix K; Appendix Q, Tables Q-10 and Q-11: Please clarify the water savings volumes associated with recommended conservation strategies that have capital costs. Please include this information in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A) and (e); Contract Exhibit 'D', Section 5.4]*

20. Appendix P, Page P.1: As noted in the plan, the plan does not appear to include a strategy evaluation for the "Reuse-General" strategy referenced in the plan on page P.1. Please include this information in the final, adopted regional water plan. *[31 TAC §357.34(d) and (e)]*

21. Appendix P, Page P.61: The plan does not clearly state whether the Neches River Run-of-River water management strategy evaluation incorporated environmental flow requirements. Please clarify whether analyses considered environmental flow requirements in the final, adopted regional water plan. If environmental flow requirements were not considered, please present results with environmental flow requirement considerations in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(B)]*

22. Appendix P: The plan does not appear to include strategy evaluations for the following potentially feasible strategies as described in the contract scope of work: "Lake Livingston," "Tawakoni Pipeline," "DWU Southside (Lake Ray Hubbard) Reuse," and "DWU Lake Lewisville Reuse." Please include these strategy evaluations or explain why this contract scope of work item was not included in the final, adopted regional water plan. *[Contract Scope of Work, Task 4D Subtask 2A]*

23. The technical evaluations of the water management strategies do not appear to estimate anticipated water losses of the associated strategies. Please include an estimate of water losses in the final, adopted regional water plan, for example in a format of an estimated percent loss. *[31 TAC §357.34(d)(3)(A); Contract Exhibit 'C', Section 5.1.1]*

24. Appendix Q, Page Q.10: The cost estimate for "New Groundwater Wells" states that costs do not include engineering or land costs. Please ensure that all cost estimates include required costing elements in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A); Contract Exhibit 'C', Sections 5.1.2 and 5.1.2.1]*

25. Appendix Q, Page Q.22, Table Q-10: The plan does not appear to present a supply volume associated with the Oakwood WUG's Municipal Water Conservation water management

strategy. Please present the associated supply volume for this strategy in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A), Contract Exhibit 'C', Sections 5.1.2 and 5.1.2.1]*

26. Appendix Q, Tables Q-12 and Q-13: The plan does not appear to present unit costs of municipal water savings in the dollars per acre-foot format as required. Please present information in the dollars per acre-foot format in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

27. Appendix Q, Page Q.68, Table Q-39: The capital and annual costs for the Lake Columbia water management strategy in Table Q-39 ($241,149,000 and $53,284,000) do not appear to match the Lake Columbia costs presented in Appendix L, page 7.7-6 ($288,640,000 and $32,549,000). Please reconcile as appropriate in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A)]*

28. Appendix Q, Tables Q-67 and Q-74: It appears that, in some instances, cost estimates may include retail distribution infrastructure including for the Fort Worth Direct Reuse and Frisco Direct Reuse strategies. Please remove any costs associated with retail distribution from the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A), §357.34(e); Contract Exhibit 'C', Section 5.1.2.3]*

29. Appendix Q, Table Q-46: The cost estimate includes a negative value representing an "avoided cost." Please remove cost elements that are not directly part of the required planning cost elements for the Lake Texoma desalination plant project in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

30. Appendix Q, Tables Q-18, Q-23, and Q-39: The plan in some instances, does not appear to present, separately, the estimated land purchase costs for reservoir footprint and mitigation land areas. For example, the Sulphur Basin Supply Strategy, Lower Bois d'Arc Creek Reservoir Strategy, and Lake Columbia Strategies do not separately present the estimated cost of conservation pool or mitigation land acreage. Please include land areas and estimated costs, separately, in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

31. Appendix Q, Table Q.54: The project components and costs include $600,000 for "equipment/vehicle storage" and $4,250,000 for "foundation improvements." Water management strategy components included in regional water plans must be limited to the infrastructure required to develop and convey increased water supplies from sources and to treat the water for end user requirements. Please remove these and other costs that are not associated with providing additional supplies to WUGs from the final, adopted regional water plan. *[TAC §357.34(d)(3)(A); Contract Exhibit 'C', Section 5.1.2 and Section 5.1.2.3]*

Level 2:	Comments and suggestions for consideration that may improve the readability and overall understanding of the regional water plan.

1. Section 3.3, Page 3.9; Appendix I, Page I.16: Please consider providing a complete description of the groundwater availability methodology employed for non-relevant portions of the Nacatoch Aquifer and "Other" aquifer groundwater sources in the final, adopted regional water plan.

2. Page 3.11, Table 3.5: Please consider including a line item for the non-relevant portion of the Nacatoch Aquifer in Henderson County in the final, adopted regional water plan.

3. Page 5E.49, Item (3): Please consider correcting the URL reference to http://www.texas.gov/conservation/doc/SB181Guidance.pdf in the final, adopted regional water plan.

TEXAS
PARKS &
WILDLIFE

Life's better outside.®

August 14, 2015

Mr. J. Kevin Ward, Administrative Agent for
Region C Regional Water Planning Group
c/o Trinity River Authority
P.O. Box 60
Arlington, Texas 76004

Re: 2016 Region C Initially Prepared Regional Water Plan

Dear Mr. Ward:

Thank you for seeking review and comment from the Texas Parks and Wildlife Department ("TPWD") on the 2016 Initially Prepared Regional Water Plan for Region C (IPP). As you know, water impacts every aspect of TPWD's mission to manage and conserve the natural and cultural resources of Texas. As the agency charged with primary responsibility for protecting the state's fish and wildlife resources, TPWD is positioned to provide technical assistance during the water planning process. Although TPWD has limited regulatory authority over the use of state waters, TPWD is committed to working with stakeholders and others to provide science-based information during the water planning process intended to avoid or minimize impacts to state fish and wildlife resources.

TPWD understands that regional water planning groups are guided by 31 TAC §357 when preparing regional water plans. These water planning rules spell out requirements related to natural resource and environmental protection. Accordingly, TPWD staff reviewed the IPP with a focus on the following questions:

- Does the IPP include a quantitative reporting of environmental factors including the effects on environmental water needs and habitat?
- Does the IPP include a description of natural resources and threats to natural resources due to water quantity or quality problems?
- Does the IPP discuss how these threats will be addressed?
- Does the IPP describe how it is consistent with long-term protection of natural resources?
- Does the IPP include water conservation as a water management strategy?
- Does the IPP include Drought Contingency Plans?
- Does the IPP recommend any stream segments be nominated as ecologically unique?
- If the IPP includes strategies identified in the 2010 regional water plan, does it address concerns raised by TPWD in connection with the 2010 Water Plan.

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

The population of Region C, which comprises 25 percent of Texas' population, was nearly 6.5 million in 2010 and is expected to more than double to over 14 million by 2060. Regional water use, which was about 1.5 million acre-feet in 2011 is expected to nearly double to 2.9 million acre-feet by 2070. According to the Region C IPP if only water user groups with projected shortages (and not reserves) are considered, there is a need for approximately 127,000 acre-feet per year of additional supply by 2020, growing to a need for 1.3 million acre-feet per year of additional supply by 2070.

Approximately 90 percent of the current water use in Region C is for municipal supply. In addition, about 90 percent of the water use in Region C is supplied by surface water. Water conservation and reuse comprise 27 percent of the recommended strategies for meeting future water demands in Region C. The 2060 projected demand is almost 600,000 acre-feet per year lower than the projections in the 2011 Region C Water Plan, in part due to water conservation efforts.

Other proposed water management strategies (WMS) include interbasin transfers from existing surface water supplies (Lake Palestine and Toledo Bend Reservoirs), interbasin transfer and desalination of water from Lake Texoma, interbasin transfer of water from the Neches and Sulphur Basins, and construction of new reservoirs (Lower Bois d'Arc, Lake Columbia, Lake Ralph Hall, Lake Tehuacana). In addition importation of water from Oklahoma and marine seawater desalination are recommended strategies. In the previous three Region C water plans, Marvin Nichols Reservoir was a recommended strategy while the reallocation of flood storage at Wright Patman Lake has been an alternative strategy in previous plans. The 2016 IPP includes a new Sulphur Basin Supplies strategy that combines a reconfigured Marvin Nichols Reservoir with reallocation of Wright Patman Lake storage. Marvin Nichols Reservoir is also retained as an alternate water management strategy.

Chapter 1 adequately describes the natural resources in Region C and how water development projects threaten natural resources. Few details are given on the how the threats will be addressed. In Chapter 1 (Section 1.12), it would be appropriate to reference Chapter 6 (Section 6.4.1). This section provides some descriptions of ways in which threats can be minimized, including water conservation, reuse, full utilization of surface supplies, and federal and state permitting requirements. Section 1.10.3 (page 1.35), Table 1.14 (pages 1.36-1.37), and Table 2 in Appendix I (pages 4-7) provide information related to threatened and endangered species. Please note that recent updates have been made to the TPWD County Lists of Protected Species (http://tpwd.texas.gov/gis/rtest/) and Species of Greatest Conservation Need (SGCN) (https://tpwd.texas.gov/landwater/land/tcap/). The Smalleye Shiner and Sharpnose Shiner are now listed as Federally Endangered species and should be included in the table. The Texas Pigtoe, Texas Heelsplitter, Texas Fawnsfoot, Louisiana Pigtoe, Southern Hickorynut, and Sandbank Pocketbook are now State Threatened. The Fawnsfoot, Wabash Pigtoe, Common Pimpleback, Little Spectaclecase, Wartyback, and White Heelsplitter are no longer considered SGCN species.

According to the IPP, groundwater development and the resulting water level declines have caused many springs to disappear and greatly diminished the flow from those that remain. New groundwater supplies in the Region are limited since most groundwater has already been developed. In addition, concern about groundwater drawdown is likely to prevent any substantial increase in groundwater use in Region C and may require conversion to surface water in some areas. TWDB planning rules now require that groundwater supplies not exceed the Modeled Available

Groundwater (MAG) values that were determined to meet the desired future conditions (DFCs) of the groundwater source. However, adopted DFCs for the primary aquifer in Region C, the Trinity, do not address protection of springs or groundwater surface water interaction. Ultimately TPWD would like to see DFCs adopted to protect these features.

We applaud the fact that, when compared to the Region C 2011 IPP, the 2016 IPP provides more quantitative information for impacts on natural resources from water management strategies. It appears a concerted effort was made to include quantitative environmental impact information when available. Much of the additional quantitative information provided in Appendix P is in the form of acres of vegetation/habitat types impacted. TPWD encourages Region C to continue to improve the quantitative impact analysis, as environmental information for WMS becomes available. In addition to providing acres of habitat impacted by a reservoir WMS, please attempt to include estimates on linear stream distances impacted or inundated. Quantitative information is needed for impacts associated with environmental flows. For example, environmental flow impact data, including changes in downstream mean annual flow and changes in monthly or seasonal flows, is available for Lower Bois d' Arc Creek Reservoir WMS. Appendix P (page p.34) appears to be a missing table under Water Management Strategy Evaluation for Lake Columbia. Appendices G, H, and I include interim environmental assessment information related to the Sulphur Basin Supplies WMS but the quantitative impact analysis on natural resources is not yet available to review. TPWD encourages enhanced coordination regarding proposed reservoir projects and the Sulphur Basin Supplies WMS in an effort to avoid, minimize and mitigate impacts to fish and wildlife resources, including the White Oak Creek Wildlife Management Area. Attachment A summarizes information regarding potential impacts of raising the elevation of Wright Patman Lake.

Appendix I of the IPP includes information regarding threatened and endangered species that may be impacted by the Sulphur Basin Supplies WMS. Alligator snapping turtle, Blackside darter and Paddlefish all thrive in rivers and large streams and the Rafinesque's big-eared bat is a bottomland hardwood species. TPWD's TXNDD database has records from 2012 of the Texas Pigtoe occurring in the Sulphur River, and the "Field Guide to Texas Freshwater Mussels" indicates both the Texas Pigtoe and Louisiana Pigtoe as occurring in the Sulphur River. Riverine and bottomland hardwood habitat types would be altered or lost by a proposed reservoir and/or the Wright Patman reallocation, creating at least a moderate potential for these species to be negatively impacted. Updated occurrence data for can be requested from TPWD's TXNDD database at: http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/txndd/data.phtml.

Water conservation and reuse comprise 27 percent of the recommended strategies for meeting future water demands in Region C. According to the IPP, the total municipal gallons per capita per day (gpcd) for municipal users has been revised from 200 to 165. TPWD commends Region C for progress made toward implementing water conservation strategies and encourages further progress towards meeting the statewide goal of 140 gallons per person per day. According to the IPP, about half of the water used for municipal supply in Region C is discharged as treated effluent from wastewater treatment plants, making wastewater reclamation and reuse a potentially significant source of water supply for the region. Table 7.1 of the IPP includes existing drought contingency plans (DCPs). Model DCPs were also developed for entities without DCPs.

As in the previous planning cycles TPWD staff appreciates the time the planning group gave to evaluating whether to recommend stream segments as ecologically unique. Ultimately the Chapter 8 workgroup and the Region C voting members decided to take no action on recommending stream segments as ecologically unique. TPWD continues to see importance in recommending and designating significant stream segments and will support Region C in this regard in the next planning cycle. We also support the planning group's legislative recommendation to form a working group comprised of representatives of TWDB, TPWD, TCEQ, and the sixteen water planning regions to bring clarity, purpose, and direction to designating streams as ecologically unique.

Section 1.11.3 of the 2011 IPP addresses TPWD's 2010 comments regarding invasive species. Please include updated information to help clarify the present status of zebra mussels in Texas. The present known distribution (as of July 27, 2015) of zebra mussels in Texas reservoirs is: Texoma, Ray Roberts, Lewisville, Bridgeport, Lavon, Waco and Belton. Zebra mussels have also been found on isolated occasions in the Red River below Texoma, the Elm Fork of the Trinity River below Lake Ray Roberts, Sister Grove Creek above Lake Lavon, and a boat with zebra mussels attached was found in Lake Ray Hubbard. Transporting zebra mussels is illegal. To prevent the transmission of invasive species TPWD recommends avoiding transport of water from basins where these species are known to occur. If this is unavoidable these transfers of water should be directly to water treatment plants.

We appreciate the opportunity to provide these comments. While TPWD values and appreciates the need to meet future water supply demands, we must do so in a thoughtful and sound manner that ensures the ecological health of our state's aquatic and natural resources. If you have any questions, or if we can be of any assistance, please feel to contact Cindy Loeffler at 512-389-8715. Thank you.

Sincerely,

Ross Melinchuk
Deputy Executive Director, Natural Resources

Attachment

RM:CL:ms

cc: Craig Bonds, Division Director, Inland Fisheries Division, TPWD
Clayton Wolf, Division Director, Wildlife Division, TPWD
Adam Whisenant, Water Resources Branch, Coastal Fisheries Division, TPWD

WATER PLANNING FOR NORTH TEXAS

REGION C

7:00 P.M.

THE BOB DUNCAN CENTER

2800 South Center Street

Arlington, Texas 76014

P R O C E E D I N G S

JODY PUCKETT: Good evening. Welcome to the public meeting for the IPP for the Region C. My name is Jody Puckett. I'm the Chair of Region C. And for the record, I'm also the director for Dallas Water Utilities.

And so I've got some of our Region C board members here. If you just want to raise your hand and say, hey, I'm here. Raise your hand, Region C members or participants or advisory people.

And then we also have the Chair of another neighboring region, Region D, Linda Price is here. She's joined us tonight. Thanks, Linda, for coming.

LINDA PRICE: You're welcome.

JODY PUCKETT: And so with -- I -- I guess, really without further ado, we're going to go ahead and kick off the presentation with Tom Gooch.

We have some board -- water board employees here, too. Connie is here with us, as well.

So we're going to go through the process tonight of a -- a presentation tom is going to do for us, Tom Gooch, with Freese & Nichols. His firm is the primary consultants for our planning group.

And then we'll entertain public comments.

I think we may have said something about three minutes or five. I don't even know what time we put in there. We'll sort of keep time, because it's a packed house.

And so we also have a representative from Kay Granger's office here, the Congresswoman from the Fort Worth area. So thank you for joining as, as well.

So any questions about our process or anything? I'm kind of a little casual, I guess.

Colby, am I doing okay so far?

All right. Tom, you ready? All right. Thanks.

TOM GOOCH: Hi. I'm going to keep this to a brief description of our plan. The plan is available on -- on the Texas Water Development Board website, and it has a lot more detail than we can go into tonight.

After that brief opening, we'll use the opportunity for public comments, and that's really all our purpose is for today.

So Region C, it has 15 and a half, all are a part of 16 counties in North Texas. It includes Dallas and Tarrant Counties and the surrounding counties.

There are 40 what are called wholesale water providers in those regions. Wholesale water providers are entities that supply water to other water suppliers, more than 1,000 acre feet year. And 40 is a fairly large amount for a region.

And there are 360 water users. Water user groups are cities, other -- and other water suppliers plus county-wide aggregations of industrial, mining, irrigation, steam electric power demand.

So 360 water user groups is, again, a large number for a region, and the reason for that is this region has about four-quarters of the state's population. Of the 16 regions in the state, this is the largest.

Our population in 2020 for the region is projected to be seven and a half million people. And it's projected to increase by 2070 to 14.3 million people, slightly more than double of what we have now, and slightly less than double we'll have in 2020.

A per capita population for this plan, the board set a base requirement that we would use 2011 -- 2011 gallons per capita per day. That was based on the number for the state as a whole.

2020 was a -- 2011 was severe drought and certainly the most severe one for the state as a whole in recent years. But it really wasn't a very severe drought in Region C. 2006 and 2008, were both more severe in terms of water use for many Region C water suppliers.

For entities in 2011 wasn't the highest water use year or the most severe dry year case. The development board allowed an adjustment for the 2011 gallons per capita per day. But they -- they didn't allow the use of higher per capitas that occurred in 2008 and 2006. And that probably results in a slight underestimated dry year projections in Region C in this plan.

The 2011 plan, we had 260 gallons per capita per day of 200 gallons per capita per day for the region. And that's before any limitation of the conversation of reuse strategies that were included in the 2011 plan, which we've reduced that significantly.

In the 2016 plan to -- to the 2060, per capita is 165 gallons per capita per day. Substantially, that's -- again, that's before conservation and reuse strategies were implemented.

Really, there are two things that drove that reduction. One is the slight underestimate of per capita demand that I mentioned earlier. And the other is the successful implementation of pretty major conservation efforts in this region in the last decade or so.

So our 2060 total demand from the 2011 plan, the previously approved plan, was 3.27 million acre feet a year for the region. And this plan was 2.68 million acre feet a year, a difference of about 600,000 an acre per year.

Now, this plan goes through 2070, so there is a -- also a 2070 projected demand in this plan, which is slightly higher, but still a little bit lower than the projected 2060 demand for the last plan.

And this kind of graphically shows that the -- the red bars here are the projected demands by decades through 2060 from the 2011 Region C water plan, region-wide demands. The gold bars -- the smaller bars are projected demand for this plan, the 2016 plan.

Having looked at the projected demands, the next thing the plan process asks us to look at is the supplies available to the region. And this graph shows the total supplies that are able available to the region.

And we're saying total supplies to distinguish them from connecting supplies. Not all these supplies are currently connected and in use.

For example, North Texas has supplies in Lake Texoma that aren't fully connected yet. Dallas has supplies that aren't fully connected yet. So this is all the supplies that are out there, some of which will require some effort to make available.

The blue bar here is a supply that's from reservoirs in this region. The yellow is reservoirs that are in other regions where water is imported to Region C, Lake Chapman, Lake Tawakoni, Lake Fork Reservoir, Lake Palestine are the largest of those.

The red -- red bar is from-the-river water. It's diversions from the river when it's available.

The white is ground water, and the green is -- is reuse. And the amount available from each source changes slightly over time. In general, the water level of the reservoirs goes down slowly, because of sedimentations in the reservoirs reducing storage.

The amount for reuse generally goes up slightly over time, because with the facilities that are available, already built, as return flows increase in the future to be able to get more supply from them.

And the -- the overall total is that we have about two-and-quarter million acre feet a year of total available supplies in this region before we have to take any water management strategies to develop new supplies.

And the black line above here, that's a

comparison to what the available supplies were last -- in the last plan, in the 2016 regional water plan.

This is another look at supplies. The bars have the same color codes. With the blue being in-basin reservoirs and other yellow being imported reservoirs, the red being the river water, the white being ground water, and the green being reuse.

But in this case, this is limited to only supplies that are currently connected. So it doesn't include supplies that are out there ready for use, but we haven't built the pipelines and the treatment plans in order to make use of them.

And -- and that total is about 1.7 million acre feet a year. And, again, the black line there is what that number looked like in the last regional water plan.

Well, if you take the demands and the supplies, the difference between them is these, and it's not just the difference between the total demands for the region and the total supplies for the region. It's the difference for each individual user added up.

Because there are some supplies -- some -- some suppliers have supplies in excess of their needs. But that doesn't make it available to another supplier in a different county in a different area.

So this is the total of all of these -- all the water user groups in the region. Again, the red bar here is what the needs were in the last plan. And the blue bars is what they are in this plan through 2060.

And they grow over time to about 1.2 million acre feet a year. And then they're larger than that in 2070. I think they get to about 1 million 4 million acre feet a year.

So established projected demands, currently available supplies, then the question is, there's a gap, a gap of needs for additional water. How are we going to do that?

And I want to go through kind of the changes to the major water management strategies between the 2011 plan, which is the last one, and this plan. Dallas has more reuse in their last plan, and it has Lake Columbia as a source.

Lake Columbia is a proposed source in East Texas that it -- it has the state water approval. It has not yet been developed. Tarrant Regional Water District has more reuse. They've gotten new permits, and they proposed the development of Lake Tawakoni in the Trinity Basin.

Sulfur Basin supplies, which are supplies for Tarrant Regional Water District, North Texas waters of the Upper Trinity Regional Water District Dallas. And the Sulfur River Basin Authority, there's a change in the proposal for Marvin Nichols Reservoir. It has a smaller footprint. And it's combined with an increasing conservation storage in Lake Wright Patman.

Those reservoirs are both in the Sulfur Basin, and Martin Nichols reservoir is a proposed reservoir, which does not yet have a permit. Wright Patman has an existing reservoir that provides water for the lake -- for the City of Texarkana and others in East Texas. And the plan is to increase the conservation storage in that and get some supply for the other plans.

The supply from a water management strategy development, and this plan is 1.6 million-acre feet a year, and that's compared to 2.21 in the last plan.

The management supply factor, which has developed for its term for the difference between ratio of the supplies you plan to have to the demand you have for the region as a whole. That factors 1.127. 12.7 percent more supply than demand in 2070. In the 2011 plan that ratio was 1.22.

The total cost involved in implementing all the water management strategies of the plan is 22 billion compared to 21 billion in the last plan. And, mostly, you're getting less supply, but the cost has gone up because of increase in construction costs for the same projects.

If you look at the plan sources of water that are going to be available to the region in 2070, conservation and reuse will be about 27 percent of total demand. A connection of existing supplies, 16 percent. Current supplies, not including the reuse and the stuff that's already there, is 37 percent, a little over a third.

New run-of-the-river supply is one percent, and new reservoirs are 19 percent. So the biggest chunk of what we propose to have by 2070 is current supplies followed by conservation and reuse followed by new reservoirs followed by connecting existing supplies. That's what's in this plan.

Chapter six deals with the impacts of the plan. There are no changes. If you'll look at impacts on water quality, it's been updated for the different water management strategies that are in this plan.

There's a new section on ground water, surface water interrelationships. A new section on needs by basin, which is related to the interbasin transfers. If you propose interbasin transfers, you need to look at the needs in the basin you're taking the water from, and the needs of the basin you're taking the water to.

And there is a plan to develop a quantitative analysis for the Sulfur Basin supplies on a reconfiguration. It just may have that available sometime this summer.

That's going to be similar to the effort that we did on Marvin Nichols Reservoir in the input to the Water Development Board on the Region C, Region D -- in the two plans that we completed a year ago.

In this plan -- in -- in the last plan, we didn't have any water use groups with unmet needs. This plan we have a few. Freestone County mining, basically that represents a historical demand for the dewatering of lignite mines.

That was included in the demands or what was included in the demands for the county, but wasn't included as available supply. Their historical needs was not considered to be available under development for the rules. So it's an unmet need.

In all probability, as long as that lignite mine and a power plants get supplies, remain in operation, people -- they will continue to dewater the lignite mines. And that use will continue. It would be just under development rules, it can't be put into the plan.

Jack County mining, we have unmet need. It's a -- mining in this case is oil and gas development, and there's really no reliable resources needed out there, so we didn't have that met.

In 27, there's an unmet need for Athens. And that represents another conflict between reality and the rules for planning. Athens is developing a ground water supply, but under the rules for planning, that supply cannot be included as an available supply.

But Athens is using and developing it. There's no law or rule that prevents them from developing it. And they said, we'll just -- we're going to develop that.

So if your rules say you can't count it, just put it in there as an unmet need and, we'll develop it and meet it that way. So that's a change from last time. Those are all pretty small numbers.

Chapter seven is a unique chapter in this version of the plan. And it's a drought response. The drought record for most of Region C was still the drought in the 1950s, 1950 to 1957. There are some supplies that were used in this regions that have other droughts.

Jim Chapman which is also called Cooper Lake, in the Sulfur Basin which supplies several entities in the metroplex. It's one supply that has a new drought record in the early 2000s.

The drought response plan chapter has in it drought triggers where those are levels in -- if you're using a supply and reach a certain level, it's called the drought trigger. And you take measures to react to the drought, to reduce demands and develop supplies, et cetera.

And for surface water, we followed the triggers in the drought contingency plans of the suppliers of the region and the same for ground water.

Also, that chapter looks at the possibility of emergency interconnects. We have several recommendations in the drought response chapter that suppliers monitor drought conditions, that wholesale water supply providers coordinate on drought response and drought response stages.

That people continue what's currently mandated in the state law, which is a regular update of their drought plans. That they continue to communicate with the customers during times of decreased supply. That they make the system enforcement divisions.

And there are also model plans available for -- conservation plans and drought plans on the Region C website, RegionCwater.org. This is it there.

Chapter eight talks the unique stream segments of reservoirs sites and legislative recommendations. There was a subcommittee established that developed those recommendations.

Columbia and George Parkhouse North were added to the list of recommended unique sites for reservoir construction in addition to the sites of plan which included Mineral Fall (sic) and Willow Creek Reservoirs, Martin Nichols Reservoir, and Tawakoni Reservoir.

And then there were several new legislative recommendations expanding the eligibility for SWIFT funding. SWIFT is a state loan program for unification of the water plan. And the Sulfur River Basin Authority is a wholesale water provider and other small changes to our existing recommendations we had before.

Chapter nine is the infrastructure fund -- funding recommendations. And that chapter is not included in the initially prepared plan, not included in the draft plan, which is what's out now. That work will be performed by the water board and be put in the final plan.

Chapter ten is a discussion of public participation. It talks about the planning members, our outreach efforts, our public meetings and hearings. And it has a summary discussion of the Region C-D interregional conflict that was resolved by the development board.

And then chapter 11 is an information. It's a new chapter. It's also -- there was not a similar chapter in the last plan. This deals with the changes since the last plan.

And there have been a fair number of them. There have been 29 water management strategies implemented, 252 water management strategies that were in the last plan. They're not in this plan.

Most of those, about two-thirds -- about three-quarters of those are -- what we call them in the last one is supplement wells. And they were wells to replace aging groundwater wells. Groundwater well only has a certain life and then you have to replace it.

We had that in the last plan. But we've changed the rules so it's not allowed to put such wells in the current plan, so they're not in there. And that's the biggest number of the water management strategies.

It's no longer considered. But there's

still 68 others with the way we've been planning next.

The decreased total demands were a big change. Decreased total available supplies were changed. Decreased total need, and we say a similar total cost a little bit larger, five percent larger.

That is the presentation.

Are there any questions before we go to public comments?

JODY PUCKETT: Tom, I'd like for you clarify when the quantitative analysis for the Sulfur is going to be available?

Is it going to be available before August 23rd? I just don't remember.

Because I thought you might want to comment. That's why I'm asking?

TOM GOOCH: Yeah, they may. We kind of --

JODY PUCKETT: Not to put you on the spot, I just didn't remember.

TOM GOOCH: Yeah. We hadn't made a commitment of a specific time, but I think we -- we'll -- we'll seek to have that done by the end of July.

JODY PUCKETT: Okay.

TOM GOOCH: That would be the time to

look at and comment on it if they wish.

JODY PUCKETT: Thank you.

TOM GOOCH: Other questions or comments?

Now we're going to have public comments, and we'll let Jody talk about that.

JODY PUCKETT: So what I'm saying about that? Okay.

It looks like we established about three minutes for each speaker. And someone might keep time. I left my iPhone back there.

So if anyone has an iPhone that might help me. But I'm not -- you know, I'm not going to, like, throw you out after three and a half minutes or whatever.

So I'm going to sit up here. We have a court reporter for our transcript of what we're doing this evening. So we want to hear from everyone that has comments to make.

And, then, of course, written comments are also important. Is it listed up there? Is it on the next slide? Is there another slide?

The e-mail address for Kevin Ward who is our administrative agent, our secretary, the RegionCWPG@trinityRA.org. We have that later if you need that.

So -- so without further ado and no music, so thank you for being here on this wonderful Wednesday.

It was my city council meeting today so that's why I'm kind of spunky.

So our first speaker today, no real order, I don't guess, is David Foster representing Clean Water Action and Clean Water Fund. David.

DAVID FOSTER: Thank you for the opportunity to speak. My name is David Foster. I'm the state director for both Clean Water Fund and Clean Water Action here in Texas.

Clean Water Action and our affiliate, Clean Water Fund, are national non-profit organizations established in the 1970s, and our mission is to protect our water resources.

We've been active here in Texas since 1988. In recent years, our major focus has been on building a culture of water efficiency or for water conservation to make sure that we can meet the needs of our growing population in a way that's both cost effective and protective of the environment.

We will be submitting written comments before your August deadline. What I want to do this evening is just highlight a couple various (sic) where I think your draft plan could be substantially improved.

I want to talk very briefly about just the water conservation plans and encourage the region to set ambitious targets to lower per capita balance and consumption of GPCD. And I also want to say a few things about focusing on repairing your leaky pipes.

I'll start with leaky pipes first. Your -- your draft plan states that Region Y municipal water loss is -- is around 15 percent. This is 15 percent of the water being distributed lost in the breaks from leaky water pipes.

That adds to up more 58 billion gallons of water lost each year. But it's the industry standard according the American Water Works Association is ten percent or less. So there's quite a gap there.

Your draft water plan does state that the quota against water loss control programs are still a potentially feasible water conservation strategy. But that's about as far as it goes.

You don't really have specific policy recommendations or goals for fixing leaky pipes. I don't think it makes sense to build new reservoirs in East Texas. Then pipe that water to this region if 15 percent of that water is going to be lost to leaks in the distribution system.

It's fair better use of money and more protective of the environment if we focus on fixing the leaks first. And I want to point out by way of contrast that Region H's plan does have a specific water loss reduction strategy addressing leaky pipes.

What they call for is that cities that lose more than ten percent -- ten percent of their water per year, to implement a plan to reduce water loss by one percent annually until they achieve that ten percent goal or less. So I think that's a missed opportunity. I encourage you to take a second look at that.

Now on the subject of municipal conservation. Simply put, this is the most cost-effective way to meet future need. Study after study has documented this. This is critical.

The Texas Water Development Board projects that the municipal sector will use more water than any other sector in the state by 2060. This is the fastest growing sector.

And over $54 billion of the latest plan for water that the Water Development Board has put out, about $27 billion is needed, they say, for our municipal needs. So that's the area of water you need to be focusing on.

The good news is that municipal

conservation programs are the most cost-effective way to meet this need. I do want to say that there are some good parts in your plan.

I really appreciate that you're increasing the amount of water that you're factoring for use for in conservation from 23 percent in 2011 and 27 in the latest plan.

Certainly, I want to acknowledge and express appreciation for programs like Lawn Whisperer. I think the water efficiency number for North Texas (unintelligible). In Dallas and Fort Worth in particular programs we see drops in the GPCD. So you to have some providers, some cities that are doing the right thing.

But this is not the case across the region. It's spotty at best. We did an analysis in our Austin office a couple of months back of conservation programs in the Dallas/Fort Worth suburbs. And very, very few of them, frankly, have anything that compares with what Dallas and Fort Worth are doing.

Many of them, if not most, have cursory conservation programs at best. They simply have some tips on how to save water. They have a link to the EPA's water web page and so forth. That's it.

So I think you can do a lot better than

that. I think it's important to point out that even during the most recent drought, the worse we've had since the 1950s; a lot of cities in the region did not propose outdoor watering restrictions.

Farmers Branch, for example, didn't do that. So I would encourage you to ask each city of the regions to lower GPCD as the state recommends by the one percent per year until you reach that number of 140 gallons per person per day.

(Coughing.)

(Unintelligible) and I want to point out that Austin, Texas, about ten years ago, their GPCD was 177. Now it's less than 140. So in ten short years, less than ten years, Austin achieved that number.

It can be done. And I think you'll all aware of the fine example of San Antonio and El Paso. But -- so we will -- will be submitting written comments and -- and emphasize other programs, as well. That -- that's my comments for this evening, and I thank you again for your time.

JODY PUCKETT: Thank you. For the record, that was five minutes.

Okay. So that was -- you know, if I didn't let him speak the whole so five minutes, he wouldn't have said good things, see. So five minutes is good.

Rita Bevin is next up.

THE REPORTER: Could you repeat the name, please?

JODY PUCKETT: Rita Bevin with the Clean Water Fund, as well.

RITA BEVIN: Okay. Jody, because you said that, I'm going to say how good the Lawn Whisperer and the Water IQ campaign is. And I do mean that, that it should be done statewide. So with that, I will continue with comments.

Yes, I'm Rita Bevin. I'm the North Texas outreach coordinator for Clean Water Fund. David talked about water conservation measures, and he talked about leak detection.

By the way, Region H is pushing one percent water drop in water loss til they roll down their water loss figure.

There's a particular conservation measure that I wanted to bring up that was in the water plan that really wasn't given any discussion whatsoever. And that's Aquifer storage and recovery. Aquifer storage and recovery is mentioned as a possible conservation measure in the draft 2016 Region C plan.

However, not unlike leak detection, there is no meaningful discussion of this measure in Chapter five. This is perplexing to me, because in the interim report to the 84th Texas Legislature submitted to the House Committee on natural resources in January 2015, it specifically mentions that there are 13 study sites around Dallas for ASR, and that these studies were motivated by the 2011 drought evaporation losses.

It would be nice to see a -- a more elaborate discussion of that in the water plan. There was a mention in the Texas Tribune that the Tarrant Regional Water District had been entertaining the study of an ASR project.

Yet, again, there's no mention of it in the Region C water plan. When we're looking at $8 billion will be in reservoirs, I think a more prudent, aggressive study should be pursued in an aquifer storage and recovery.

CBS reported last month that three trillion gallons of water gushed from Texas swollen rivers into the Gulf of Mexico in May alone this year. And two trillion gallons will likely have evaporated by year's end. Combining the water loss would being enough to serve Texas' entire booming population for a year.

ASR is a proven technology. Its benefits include water can be stored during dry, hot months.

Underground storage means no evaporation.

And we know from East Texas to West, evaporation is three inches all the way to seven. Water is less vulnerable to contamination in surface storage. And, lastly, land above a reservoir is a not inundated and can be continued for prior use.

According to a consultant from CH2M featured in an April 4th, 2014 Texas Tribute story, ASR can cost ten percent of what reservoirs do. And the permitting process is much faster.

This is a proven technology that's been looked at since 1983. Of the 133 projects nationwide, Texas is home to three of such projects. Some that go as far back as 1985, including El Paso in 1985, San Antonio in 1995, and Kerrville in 2004.

Six regional plans have ASR as a recommended strategy in its 2012 water plan. Unfortunately, Region C was not one of them and it isn't in the 2016 plan despite this notes to the legislature about 13 studies sites, which I can't find any information about.

Reservoirs will see evaporation, seepage, silting and depletion. The water loss is coupled with the thousands of acres that are inundated and out of productive use, both farmland and forest. Not to mention the mitigation acres for the construction of such reservoirs.

So we should pursue a much more aggressive strategy on ASR. It's been done. I even talked to a consultant today who said he didn't see any reason why it couldn't be pursued in the Trinity.

He also mentioned to me that The Colony had considered a project. Unfortunately, that particular well for The Colony was too expensive. But I would like more information on what ASR studies are being done in the region.

Lastly, as we know, there are $22 billion in infrastructure projects. Eight billion of those are proposed reservoirs. Reservoirs should be the last resort, not the first resort, of expanding water supply.

Yet Region C has put George Parkhouse North, Marvin Nichols, George Parkhouse South, Lower Bois d'Arc Creek, Lake Ralph Hall, Lake Columbia, Lake Tonkawa, and Main Stem Reservoir as some of those options as recommended or alternatives in the 2016 plan.

Existing reservoirs should be considered first -- existing reservoirs such as Lake of the Pines were left on the table with 89,600 feet -- acre feet of water per year. Lake of the Pines is half the distance of Toledo Bend.

Yet the cost of Lake of the Pines is one-third the cost of Lake Ralph Hall and Lake Tonkawa. So I am curious as to why Lake of the Pines was not put in here as a recommended alternative option as it was before.

Lastly, and I'll finish up. Region C, their -- well, to finish up, at one time, our state had 16 million acres of creek flood plain and forested river. Today that's down to 6 million acres.

Measures such as those described could reduce the need for economic and environmentally damaging reservoirs, such as that and the Marvin Nichols and others.

Thank you for your time, and I appreciate it.

JODY PUCKETT: You bet. Thank you. The next speaker is Ms. Helen Bush.

And I let David speak and then Rita, so the last speaker is going to speak an hour and a half. I'll be late for work in the morning, so.

HELEN BUSH: My name is Helen Bush.

JODY PUCKETT: Could you get a little closer to the microphone?

HELEN BUSH: I wanted to say --

JODY PUCKETT: Thank you.

HELEN BUSH: -- first, that I needed to defend those people in the region of the Marvin Nichols planned reservoir. They are against this reservoir. And so I'm here to defend them.

This is a prosperous region with agricultural land, a -- a viable river and forests that are profitable. And it's a stable region. And these people do not want their land, their 70,000 acres, under water.

Then, in addition to that, that they are against a reservoir, reservoirs pollute in many ways. One thing they do is drown 70,000 acres of soil. Soil actually stores more than C02 than the forest above the water level.

And on the earth, the -- the agricultural land that's been tilled has released more CO2 than all of the cars that have ever been on the highway. And if you notice why agricultural land has just expanded and also expanded to this -- this desertification. So a reservoir can be like desertification.

Because you've inundated (unintelligible) land with plain stable agricultural land. So my argument is against specifically Marvin Nichols. That's what I understood when I came here. I'm surprised to learn that there are five reservoirs planned.

Another thing I learned from studying is that there are sources of water from conservation. For instance, Region C is highly populated in the Dallas/Fort Worth and the surrounding towns.

Region D is more agricultural area. So I figured you want the water from this water-rich area in comparison to Region C. And west of that line, which is still in the drought, and east of Fort Worth, which is -- has had plenty of rain which we need to be thankful for.

But this is an arid region. It had huge droughts in the 30s, huge drought in the 50s, huge droughts going on in 2000, from 2000 to 2010. And 2011 was just a nationwide culmination, and it's continuing in California.

We need to work with nature instead of technologically against nature. There are other sources of water, all the water you need besides Marvin Nichols. And I'll stop there. Thank you.

JODY PUCKETT: Thank you, Ms. Bush.

Next up, Janice Bezansor with the Texas Conservation Alliance. Come on down.

JANICE BEZANSOR: Thank you. Madame Chairman, I want to start by congratulating the water providers of Region C for (inaudible).

THE REPORTER: I'm sorry, I'm having a hard time hearing you.

JANICE BEZANSOR: Oh, I said, I want to start by congratulating the water providers of Region C for the tremendous amount conservation that's been put in place over the last ten years. They've handled the drought with aplomb.

It is has not been easy to provide for this large of a population. And, you know, I want to congratulate them on their success.

The result of that conservation is that the -- as Tom Gooch was saying awhile ago, is that the projected demand for 2060 is 600 -- about 600,000-acre field less than in the previous plan. That's a very big difference.

Texas Conservation Alliance and my colleagues actually are very disappointed that the Region C water planning group didn't decide to take Marvin Nichols out of the plan. It provides about not less than that 600,000 acre feet that's been that region's demand, and which makes it clear that it isn't absolutely essential anymore.

We appreciate the Dallas Water Utilities for leaving that as an alternative water supply rather than a recommended water supply. And we urge the

Region C water planning group to make Marvin Nichols as it's -- as it is currently styled in the Sulfur Basin supplies with the Marvin Nichols part of that to make it an alternative for the other water user groups as well as the providers, as well.

Even with the reduced size of what is going to be 2,000 acres to 42,000 acres, this is still the most damaging project plan in the map and would have a tremendous economic (unintelligible)

It would be economically devastating to the timberland and businesses of the community, and the economy of northeast Texas.

There are two ways -- two primary ways of getting -- meeting the demands that are coming that cost a lot less than building new reservoirs and can adequately supply the gap in future demand.

The first is water recycling and reuse. If this 2.6 -- or actually the municipal water of 2.2 million acre feet projected for 2070 comes to that part, there's going to be something like 1.3 million acre feet of returning floods.

We appreciate the amount of reuse that's in the plan. All the major water providers have projects for either indirect or direct reuse. We appreciate that very much. But there could be a whole lot more. There could probably be twice what's been proposed.

The other sources to use right now, right now the Sulfur Basin supplies is a blend of Wright Patman and Marvin Nichols. Wright Patman is and existing reservoir. And if water -- water doesn't really require a whole lot of change in operation or effecting anyone's water supply.

The water is just taken from Wright Patman when it's available and used conjunctively with the vast amount of storage that's already been developed. 250,000 acre feet could be developed each year at a much lower cost per unit of water than Marvin Nichols, and 400,000 at somewhat lower cost per unit of water.

Texas Conservation Alliance has repeatedly advocated increased use of Lake Texoma. There's a lot different ways do it. You can blend it. You can partially desalinate it and put back it back in its undesalinated part. You can use it for nonconsumptive -- for consumptive uses, for lawn watering and free up fresher water for other things.

Together those two things, water recycling of Lake Texoma can meet our future needs without building any new reservoirs. The -- a quick note on the Tawakoni reservoir that's been now recommended for the first time. In the past, it's been recommended to -- for the first time, it's recommended for Tarrant regional.

Instead of building a reservoir there. It's much simpler to take the water out of Tawakoni Creek, put it into Richland Chambers reservoir which is right nearby, and increase the yield of that.

All of these things together, you maybe have seen a theme, is go for what's low cost, go for what's low impact, and try to avoid the devastation of that reservoirs have, not only to the environment, but to families and economies.

Thank you very much. We will be submitting written comments on this.

JODY PUCKETT: Great. Thank you.

Next up is Wayne Owen with the Tarrant Regional Water District.

WAYNE OWEN: My name is Wayne Owen. I'm the director of planning for the Tarrant Regional Water District, which is the wholesale water provider for the western third of the Metroplex.

We have an 11-county service area that expands from Jack County in the northwest to Freestone and Henderson County in the southeast. I operate a system of reservoirs and water transmission pipelines that deliver water back to the western third of the Metroplex. Our primary customers are the City of Fort Worth, Arlington, the Trinity River Authority and the City of Mansfield.

I just wanted to comment today about what's new about this plan. Many of us have been at this state and regional water planning exercise since 1997, with 2001, 2006, 2011 and now 2016 initially prepared plans.

And that includes us water management professionals as well as many people in this room who have provided comments who have been at this for a very, very long time and have been very polite in moving their concerns as well as comments forward.

And I -- I appreciate that, and I appreciate them being -- everyone being -- being here tonight. One of the interesting things is water efficiency.

I just wanted to comment that the 165 GPCD number that's essentially a regional state of water use in the -- in the region is a much reduced number than we've seen in previous region -- regional plans.

Water efficiency in the Metroplex in this region have been extremely effective, and I just want to applaud the citizens of this region for their response to the call for water efficiency.

And that has been very effective. We have seen it in our system with a significant reduction in peak-to-average ratio, peak day to average day ratio. That's one of the measures that's used in statewide planning for efficient water use.

And in addition to that, our -- our demands are down significantly. And one of the things you will notice in the 2016 initially prepared plan that not only has the population projections decreased, but also water use has significantly decreased.

And that has had a profound effect in when these large expensive water supply projects are required to come online to meet a projected shortfall, those dates are moving out.

In the first regional plan, a level of large expensive water supply strategies from the Sulfur River Basin were projected to be needed by 2025. And in this plan, that's now projected out toward 2040.

And there's an expectation that in this region continued water efficiency enhancements will continue to occur. And I think this initial plan recognizes that, and I think that's new in this plan.

Once again, I've mentioned that since the

2001 plan, the Marvin Nichols project date indeed has moved back to 2040. The planning has also had to take into consideration the new drought of record in many river basins, will not only impact existing water supply but will impact the supply projected to be garnered from the new projects.

So all the planning has had to respond to those new characteristics based on the drought year just apparently coming out of and as much as all our reservoirs are full to the brim or beyond at the moment, that's new.

The decreased demand, the decreased supply, the decreased need, and but once again, similar costs for the projects that we're projecting as necessary to meet those needs.

I want to comment on aquifer storage and recovery, ASR. We are working on that at Tarrant Regional Water District. The ASR strategies that were evaluated, we have currently have a grant with reclamation on a study that we're partnering with the City of Wichita Falls, another neighboring region and city with a challenging water supply situation.

Looking at ASR, and we do not understand the costs, the scale and the scope of ASR enough to effectively place them as a even a preliminary strategy at this point. But we are looking at that and expending a good -- good amount of money to consider adding that to Tarrant Regional's portfolio of water supply.

That's new, and I think in subsequent regional plans, that will be -- will work into the portfolio of supply specifically in this region. Thank you.

JODY PUCKETT: Thank you.

Next up is Larry Patterson from the Upper Trinity Regional Water District.

LARRY PATTERSON: I'm Larry Patterson. I'm deputy executive director of the Upper Trinity Regional Water District. Thanks for allowing our comments tonight.

The Upper Trinity Regional Water District provides service to Denton County and a portion of Collin County, and that in the future, we would serve portions of Cooke, Grayson and Wise County.

And because of our expanding service area and the demands of our customers, our member cities have placed upon our -- our system, we do take our regional water planning very seriously and have done so essentially from the creation of our district 25 years ago.

We have reviewed the initially prepared

plan, and we want to compliment the -- the team that put it together for the diligence that they had and have displayed as far as meeting with many of the water providers and with -- with our group several times to clarify things.

The regional planning group itself should be commended for the excellent work that they've done and the dedication they've shown with the many meetings and -- and reviews over the last several years to get to this point.

We do think that the water demands, the projections, and the populations identified for the Upper Trinity are reasonable and within the bounds of what we expected. We fully support the initially prepared plan, and we urge its adoption with the correction or additions that may be presented tonight by others and as well as the Upper Trinity.

We do have a few minor corrections related to the Upper Trinity section that we'd like to offer up a copy of it. I'll leave it with you, and we'll probably submit also by e-mail that clarify some of the customers we have and just a few minor typographical errors we'd like to correct.

But thank you for the opportunity to comment.

JODY PUCKETT: Thanks, Larry.

Next up is Julia Bergen. Did I say that right? Fellow Texan. Welcome.

JULIA BERGEN: Thank you. It's Burgen, B-U-R-G-E-N.

JODY PUCKETT: Burgen, right.

JULIA BERGEN: Did you-all bring the sound system or is that was here for you to use?

JODY PUCKETT: I believe that it belongs to the rec center here.

JULIA BERGEN: Well, I will call the city hall tomorrow, and I will tell them maybe you can do something about it, because it's really bad. It's the echo, and the sound projection is not good at all.

JODY PUCKETT: Oh, well, I'm sorry.

JULIA BERGEN: I'll let them -- I'll let them know tomorrow.

I -- since no one -- only two or three people here know me, I would just need to preface some of my comments that I'm a graduate of SMU, member of Phi Beta Kapa, graduate degree from UTA. I have four or five --

(Coughing.)

THE REPORTER: Could you repeat that? I'm sorry.

JULIA BERGEN: Four local ones and one national award for what I have done. I have learned from Nick Fritz in Dallas in the early 70s, and I wish his spirit would speak to us here tonight.

He would tell us the same thing he told us then, and I will attempt to sort of do that. I have noted some things on here that says that despite the good talk, we are still the highest GPCD consumers of water in the state.

And it appears that the major thrust here so far has been reuse. We need some further conservation strategies by reforming all customer cities and maybe all cities to implement water conservation programs.

I am particularly concerned about the sprawl. We are building all the way to the Red River. I flew in last Friday evening from Denver and got quite a good view from my window seat of the rain, which was evidently dumped on us again Thursday, maybe some Friday. But I think it was most Thursday.

Lewisville was all over the place, and many other small lakes were also way out of their banks, but those things only happen a very few times.

I remember 1949, but I don't remember anything really since 1949 that compares with now. And that's a long time. If we continue building residential all the way to the Red River like we are, those smaller towns are not doing the conservations things that the bigger cities here are.

If we don't somehow regulate the purchase of large tracts of land for one or two houses and the conversion of natural prairie or natural whatever up there, forest, into lawns that you water and exotic south coast plants, we're not going to get very far.

And I noted that that was one of the things that was definitely mentioned in here. We need to support the matrix of as much land and as little water use as possible. No Marvin Nichols. Go with native plants, down with exotics. Natural foliage, natural forests. Down with reservoirs.

These are the things that we really need to do. To convert these grasslands and forests to reservoirs is to continue to mess up the basic balance.

We may have an unusual abundance of water right now, but I have lived in Texas for 80 years. And the smartest plans are those that are for serious conservation. Thank you.

JODY PUCKETT: Thank you. All right. Our next commenter is Rachel Baker Ford with the Garland Democratic (unintelligible).

(Coughing.)

THE REPORTER: Garland Democratic?

THE WITNESS: Garland Democratic Voice.

THE REPORTER: Thank you, ma'am.

RACHEL BAKER FORD: Good evening. Good evening. I'm not going to be around in 2070, neither probably are my children.

But I'm around now, and when I came in -- when I -- I was here before for the last hearing. When I went out, I parked over in the handicapped area. And there were -- the sprinkler heads had been broken, and had been broken for quite a long time.

THE REPORTER: Excuse me, could you get closer to the mic? I'm having a hard time hearing.

RACHEL BAKER FORD: I'm truly sorry. I'll will do what I can.

THE REPORTER: I'd like to be able to hear. Thank you.

RACHEL BAKER FORD: You're welcome. That better?

THE REPORTER: Much better. Thank you.

RACHEL BAKER FORD: Okay. All right. Last time I was here when I went out, there was water running and ran all the way downhill, you know, like water does in the alley. And there were broken sprinkler heads, and it's been awhile.

Well, this afternoon when I came in, there was water running all over the cement over here which probably could have been fixed by a 15-cent washer in the outlet.

Conservation is the key. I read an interesting article in the Longview Journal, and it stated, you know, East Texas is willing to compromise and go together. But why should they sacrifice land and property and employment when Dallas refuses conservation? It doesn't make sense.

The -- I remember hearing one of the -- one of the folks say, if I have -- I have an oak tree, I need to plant it today to be harvested in 30 years. And that makes sense. It's the long term.

So if we hold these folks out there in -- in bondage that can't sell a property, who wants to buy a piece of property that's got -- got Dallas leaning on top of it? So the -- the point being, that we have other ways.

I look at San Antonio, and they've reduced their usage of water. I looked at projects, and we just went through in Dallas, they were planning on putting condensing centers on the Trinity. The Trinity goes through 37 counties and supplies, I think, 57 percent of the water for the municipalities.

Those figures, I don't quite remember, but that's close. And a condensing center, a spill, would take out the Trinity, 37 counties.

Where was -- where was the water planning in that? Why don't those groups work together instead of holding the folks, the good folks in East Texas, who have lived on that land for generations?

Yes, I stand opposed to the -- the Marvin Nichols. We need to reduce (unintelligible) --

(Coughing.)

-- aquifers where we don't have evaporation and take care of all Texans, not do a land grab. Thank you very much.

JODY PUCKETT: Thank you.

RACHEL BAKER FORD: I do have a printed one for you.

JODY PUCKETT: Oh, great. Thank you. Great. Super. Appreciate it. Did you (unintelligible) --

(Coughing.)

RACHEL BAKER FORD: Yes. It's two copies of the same thing.

JODY PUCKETT: All right. Great. Thanks.

Our next speaker is Bob -- is it Fusinato?

BOB FUSINATO: Fusinato, yes.

JODY PUCKETT: Did I say that right or was I close?

BOB FUSINATO: Close enough.

JODY PUCKETT: Oh, Bob. Bob. Bob.

BOB FUSINATO: (Inaudible)

JODY PUCKETT: I thought you were going to say close enough for water planning. A little humor here.

Just for the record, if you would say your name correctly so she could get it.

BOB FUSINATO: Yes. My name Robert Fusinato.

THE REPORTER: Could you spell that, sir?

BOB FUSINATO: F, as in Frank, U, S, as in Sam, I-N-A-T-O.

THE REPORTER: I appreciate that.

BOB FUSINATO: Thank you. I live in Richardson, Texas. And as a resident of Richardson in Region C, I want you and the folks in East Texas to know that not everyone in Richardson -- in Region C is in favor the Marvin Nichols in the Region C water plan.

In my opinion, the Region C, even though we have made improvements over the previous plans, still overestimates demand growth and underestimates the value of conservation and recycling of (inaudible).

Furthermore, I don't believe that Marvin Nichols is a viable solution or any other giant reservoir of its type. We have reached the point of (unintelligible) on building reservoirs especially ones as big as Marvin Nichols, to build more reservoirs when we can't make (unintelligible). If I recall, that this area is likely to experience more periods of extreme drought in years for a short (unintelligible).

(Coughing.)

During these long periods of drought, the water from these reservoirs are likely to evaporate more rapidly than in the past. I don't believe we can continue to rely on reservoirs as a primary solution to going forward.

We need -- we simply need to start on alternative solutions. And as long as you include a development of the large-scale reservoirs in your plan, people will not have the incentive to develop (unintelligible) plan. As a result, we're left with no real solutions when you need them.

DFW would be better served by first fixing it's leaking infrastructure, implementing more smart water conservation efforts. And this includes some local water caching systems, water reuse especially in large industrial applications, and recycling instead of using potable water for irrigation.

This is an example now where we have all this water that's -- that's basically going to the -- to the Gulf of Mexico instead of being caught somewhere and going back into our aquifers.

So, I mean, I think if we do a better job of not just making the water go away from the reservoir, making it going down to the reservoir. And I have an example of that. My cousin lives in San Jose, California, and, you know, they built percolation ponds to be used. The (unintelligible) that was -- was happening there and kept the city from sinking down below the bay level.

So I think that this is a consideration that we ought to look at. Also, aquifers storage and recovery is a promising alternative to reservoirs. A number of sites have been identified, not included in the 2016 plan.

I believe ASR is a viable solution and should be a priority over building new reservoirs. To put the East Texas farms and forests under water, you don't get them back, as other people have said.

So I think we need to basically look at the true impact on these people and also on the fact that, you know, at some point in time, we may require more local food sources. And if we put these under water, we're actually, you know, risking our -- our food supply.

Also, I believe that this plan does not include mitigation acres that are needed in order to effect the reservoir building. A previous report said that Marvin Nichols would include an additional 40,000 -- 47,000 acres. And so I think we need to put those mitigations issues back in the plan so that we have an idea of what really is being affected by this plan.

That's all I'm going to say for tonight. I will defer further comments to somebody else here in a second.

JODY PUCKETT: Thank you very much for your comments. The last speaker I have signed up is Carol Spruiell. Did I say that -- was I close?

CAROL SPRUIELL: You were close.

JODY PUCKETT: Okay. She's with the Texas Conservation Alliance. I think I recognize you.

CAROL SPRUIELL: Yes.

JODY PUCKETT: Yeah, I think I saw you in

Fort Worth now that -- I'm, like, I know you. Welcome.

DEFENDANT: Thank you, Madame Chairman. First of all, I'd like to commend the plan for increasing the reuse by 51 percent between today and 2070. I also want to commend your consideration of increased supplies from Wright Patman and Texoma, and such activities as indirectly used from the Dallas Main Pump station. These all represent a huge step (unintelligible). However, in spite of the numbers of increase, the impact of reuse for the overall water region supply is only 5.5 percent. If you will pardon the pun, Region C appears to be approaching water reuse by drips and drops.

We stand on the threshold of a bold new opportunity to become leaders in the next generation of water though increased recycling whether through wetlands indirect return to reservoirs or direct reuse.

We stand on the cusp of being able to circumvent drought in view of an increasing population. But we appear unwilling to start and implement the new ones with enthusiasm.

(Ringing.)

Do I get music. Okay.

JODY PUCKETT: Not everyone has had music.

CAROL SPRUIELL: That's right. That's right. Just hope I don't start singing, too. All right.

So in this plan right now today, why not embrace the future. California has found itself in a horrific situation and is now embracing recycling with gusto. Unlike the foresight of Orange County decades ago.

Before Texas slips back into drought, why not rethink the potential for recycling and move toward projects with 21st century technology with less environmental impact than new reservoirs? Why not say that Texas will be first, not an also ran in building the future of water? Why wait until the next plan when we can write in more of reuse projects today?

JODY PUCKETT: Thank you. I -- I have no other speakers signed up, but I hate to say this, but if you hadn't signed up and you still want to speak, you have the opportunity. Does anyone else want to speak? Okay. Why don't you come up. And so the court reporter can get your -- get your name and your --

SHARON RICHEY: Sharon Richey, R-I-C-H-E-Y.

THE REPORTER: I appreciate it, ma'am.

SHARON RICHEY: Fort Worth. I've been a

Texan since 1971, and have had the pleasure of living in Fort Worth since -- over 20 years. I'm really grateful to --

JODY PUCKETT: Get closer to the mic so we can hear you.

SHARON RICHEY: Okay. I'm really grateful for the conservation education like in the programs that we're having in Fort Worth in the Region C, such as the Lawn Whisperer and others and gains have been made. I think there's so much more that could be done with education and conservation examples have already been cited in San Antonio and El Paso and other cities have been noted.

So much more can be accomplished with conservation and education. And I think that's really what we need more of. Region C really need to use less water per person, and it doesn't -- it seems like our conservation should come before the sacrifice of the Region D's people, their properties, their jobs, their livelihoods.

Also six other regions, I believe, have embraced aquifer storage and recovery more than Region C. It seems like that would be much preferable to reservoirs, which cost so many billions and are, as I mentioned, disruptive of lives and properties and livelihoods of other regions.

And besides, the reservoirs have been noted to be much less water efficient than aquifers.

Thank you very much.

JODY PUCKETT: Thank you. I didn't see any other hands so if that -- I think that may conclude our speakers for tonight. So as the chair Region C, I'd say we're done so. Thanks for coming I appreciate it. Again, send your comments in, in writing if you have some others. Appreciate our court reporter efforts tonight. Thank y'all. And y'all be careful.

(Meeting adjourned at 8:27 p.m.)

THE STATE OF TEXAS)
COUNTY OF TARRANT)

This is to certify that I, Vicki L. Smith, a Certified Shorthand Reporter in and for the State of Texas, reported in shorthand the proceedings had at the time and place set forth, and that the above and foregoing pages contain a full, true and accurate transcript of the said proceedings.

GIVEN UNDER MY HAND on this the 20th of July, 2015.

VICKI L. SMITH, RPR, CSR
Texas CSR No. 8061
Expiration: 12/31/15
Firm Registration No. 126
MWA Reporters
6440 North Central Expressway
Suite 410
Dallas, Texas 75206
(214) 424-0762

THE STATE OF TEXAS)
COUNTY OF TARRANT)

This is to certify that I, Vicki L. Smith, a Certified Shorthand Reporter in and for the State of Texas, reported in shorthand the proceedings had at the time and place set forth, and that the above and foregoing pages contain a full, true and accurate transcript of the said proceedings.

GIVEN UNDER MY HAND on this the 20th of July, 2015.

Vicki L. Smith

VICKI L. SMITH, RPR, CSR
Texas CSR No. 8061
Expiration: 12/31/15
Firm Registration No. 126
MWA Reporters
6440 North Central Expressway
Suite 410
Dallas, Texas 75206
(214) 424-0762

1)

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: David Foster

Representing: Clean Water Action + Clean Water ~~Fund~~ Fund

Mailing Address: 600 W. 28th st #202
Austin Tx 78705

E-mail Address: dfoster@cleanwater.org

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: RITA BEVING

Representing: CLEAN WATER FUND

Mailing Address: 13214 Glad Acre Dr.
Dallas, TX 75234

E-mail Address: rita.beving@gmail.com

)

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Helen Bush

Representing: self

Mailing Address: 8650 Southwestern Blvd
75206

E-mail Address: hlmcbush@yahoo.com

5)

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Janice Bozanson

Representing: Texas Conservation Alliance

Mailing Address: 1605 Mission Tr
Salado Tx 76571

E-mail Address: bezanson@texas.net

---

5)

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Wayne Owen

Representing: Tarrant Regional water District

Mailing Address: P.O. Box 4508
Fort Worth, Tx. 76164

E-mail Address: Wayne.owen@trwd.com

---

6)

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Larry N. Patterson

Representing: Upper Trinity Regional Water District

Mailing Address: P. O. Drawer 305
Lewisville, Texas 75067

E-mail Address: lpatterson@utrwd.com

7

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Julia Burger

Representing: myself as a Texan & member of multiple eco-groups

Mailing Address: 2312 Winewood Ln. Arlington 76013

E-mail Address: jburgen@sbcglobal.net

8

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: RACHEL BAKER FORD

Representing: ~~[illegible]~~ Garland DEMOCRATIC VOICE

Mailing Address: 3317 Knights Haven LANE
Garland, TX

E-mail Address: MultiSmus @ AOL.COM

MultiSmus@aol.com

9

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Bob FUSINATO

Representing: SELF

Mailing Address: 408 NORTHVIEW DR
Richardson, TX 75080

E-mail Address: Bob Fusinato @ TX. RR. com

REGION C WATER PLANNING GROUP PUBLIC HEARING
JUNE 24, 2015

PUBLIC HEARING COMMENT REGISTRATION FORM

Name: Carol Spruiell

Representing: Tx Conservation Alliance

Mailing Address: 11116 Candlelight
Dallas Tx 75229

E-mail Address: ~~caroljack @ sbcglobal.net~~
carol@tcatexas.org

August 2016

New Water Supply and Delivery Strategies for Region C

Prepared for:

Region C Water Planning Group
Region D Water Planning Group
Texas Water Development Board

Prepared by:
Oran Caudle
Caudle Consulting
P.O. Box 5714
Texarkana, TX 75505
ocaudle@outlook.com

Table of Contents

New Water Supply and Delivery Strategies for Region C

Introduction

This study introduces five new water supply and delivery strategies for consideration by the Region C Water Planning Group. All five strategy options provide better cost versus yield ratios for Region C than Marvin Nichols 1a does, or any other published strategy that includes the building of any new reservoirs within the Sulphur River Basin.

The first two options are newly updated versions of the Patman/Chapman System of Reservoirs using pipeline strategies. These two options provide more water from the Sulphur River Basin than MN 1a would provide for Region C. The study of these two options uses information from the 2003 US Army Corps of Engineer's "System Operation Assessment of Jim Chapman and Wright Patman Lakes," the 2016 Region C Water Plan, and the December 2014 Sulphur River Basin Feasibility Study.

The last three options are canals based on a January 2015 US Army Corps of Engineer report that studied moving large quantities of water from the Missouri River to Western Kansas. That COE study has been adapted to fit the needs of Region C. These options provide a path to provide more water for Region C than any strategy that has ever been published by Region C.

The five main options in this study are as follows:

Patman/Chapman System of Reservoirs Option A.
Replacement for the Marvin Nichols (MN) 1a strategy. This option would provide 27 percent more water than MN 1a while costing the same as MN 1a is published to cost in the 2016 Region C Water Plan, even when the costs for raising Lake Wright Patman are added. Option A would be able to proceed to construction soon, saving both time and money for Region C.

Patman/Chapman System of Reservoirs Option B.
A larger replacement for MN 1a that supplies 60 percent more water than MN 1a would for Region C while costing only 49 percent more than what MN 1a is published to cost in the 2016 Region C Water Plan. Option B would be able to proceed to construction soon, saving both time and money for Region C.

Northeast Texas Canal (NTC) Option
The Northeast Texas Canal (NTC) Option would transport water from the Sulphur River Basin to Region C. It has provision to add water from other Northeast Texas and Arkansas sources. The NTC's initial yield from the Sulphur River is 850,000 acre-feet, with the ability to carry up to 1.4 million acre-feet to Region C. The NTC would transport more water at less cost than water strategies published in the 2016 Region C Water Plan.

East Texas Canal (ETC) Option
The East Texas Canal (ETC) would transport water from Lake Toledo Bend, Lake Sam Rayburn, Lake Steinhagen and Lake Livingston to Region C. It has a yield of 1 million acre-feet, with the ability to carry up to 1.4 million acre-feet. The ETC would transport more water at less cost than options studied for water supply from East Texas lakes that are published in the 2016 Region C Water Plan.

Arkansas-Texas Canal (ATC) Option
The Arkansas-Texas Canal (ATC) would transport Arkansas water to Region C by way of the NTC, and has the potential to add a supplementary yield of up to 700,000 acre-feet to the NTC. The ATC provides water from more diverse river basins. It would provide superior water availability during a time of long-term drought.

These options would reduce many adverse impacts over the methodologies currently considered by Region C. This study indicates that there should be a reconsideration of Region C's recommended and proposed water supply strategies.

As this study presents new options that would provide more water for Region C, we should recall the words of a Texan who wrote a book that began the road to the 1968 Texas Water Plan. Nationally known researcher and historian Walter Prescott Webb, who wrote "More Water for Texas, the Problem and the Plan" in 1954, said this in his book...

> *"If this were a political pamphlet, designed to please everybody, we would find a way of saying that with proper management, every section of Texas could have all the water needed for municipal use, for irrigation and for industry. The only trouble with such a statement is that it would be false."*

Patman/Chapman System of Reservoirs Option A

Both the Sulphur River Basin Feasibility Study (SRBFS) and the 2016 Region C Water Plan have published the cost of Marvin Nichols 1a as $4.3 Billion. The SRBFS states that the reason MN 1a is recommended over Lake Wright Patman is that MN 1a would cost less to build than the cost of the pipelines needed to go to Lake Patman. By using the calculations of the SRBFS and the 2016 Region C Water Plan, the math now weights to using Option A or B rather than MN 1a.

In 2003, the U.S. Army Corps of Engineers published a system reservoir study of Lakes Patman and Chapman to determine the yield from those lakes combined. The study stated that if extra pipeline capacity was added, the yield could be greater than 600,000 acre-feet. The study proposed, for its maximum pipeline, one 10-foot diameter pipeline from Lake Patman. The study goes on to state that more pipeline capacity would not be competitive with the 2001 Region C Marvin Nichols 1 cost estimate of $1.7 Billion.

With Region C now publishing that MN 1a would cost $4.3 Billion, the pipeline cost cap changes substantially. Option A would use two 10-foot diameter pipelines, just as is proposed in the MN 1a strategy. By comparison with the 2016 Region C Water Plan cost estimate of building MN 1a, Option A would cost about the same as MN 1a.

The 2003 COE System Study conducted an analysis of Lake Patman up to an elevation of just over 228 feet above sea level. However, the 2014 SRBFS has now calculated yields of Lake Patman at elevations well beyond 228 feet. A Lake Patman elevation of 231 feet will produce the additional yield needed to protect the current senior water rights of the City of Texarkana, while providing 620,000 acre-feet for Region C.

A run-of-river system would be created for some lakes in Region C. These lakes would immediately include: Lavon, Hubbard, Lewisville, Eagle Mountain and Worth. During implementation of Option A, Region C could add a discharge (to the pipeline going from Lake Lewisville to Eagle Mountain Lake) and Option A would be able to add water to Lake Grapevine for even more water storage.

There exist additional water sources that could be combined with Option A. A pipeline segment to Booster Station #1 could provide for a less expensive way to pump water from Lake O' The Pines to Region C.

The Arkansas Natural Resources Commission has corresponded that there are two lakes in Southwest Arkansas that have water available that could be available to Texas. These are Lake Erling and Lake Millwood. It is feasible that pipeline segments to these lakes could provide an additional 70,000 acre-feet per year to the water availability for Option A.

With successful negotiations with agencies in Arkansas and the granting of a Title III Interstate Water Transfer Permit by the Legislature of Arkansas, Option A could improve water availability yields far beyond 620,000 acre-feet yield stated for Option A, and could pump water at near the maximum pipeline capacity of 720,000 acre-feet.

Cost Estimates for Option A

Option A, as shown in detail in Table-1, would cost $4.1 Billion to construct, and $4.3 Billion when the costs for raising Lake Patman are added, if the added costs were actually that high. The construction cost estimates are calculated using the same data for pipeline infrastructure that is published in the 2016 Region C Water Plan for MN 1a in Table Q-18. The cost estimates of Option A and of MN 1a are an apple vs. apple comparison. Both use the same Table Q-18 cost estimates.

The SRBFS states that the additional costs associated with raising Lake Patman to elevation 232.5 feet would be $292 million. However, the land that would be additionally inundated, and the land that likely would be used to mitigate with, is under a US COE easement arrangement. That land's value is actually much lower due to numerous constraints about how the land can be used, such as no homes or permanent buildings of any kind. That land is generally valued and appraised at less than $1,000 per acre. The SRBFS used a generalized figure of $2,000 per acre in its calculations, making the costs stated in their study for land mitigation over-inflated for this strategy's mitigation requirements. While it is true that those landowners could generally not find replacement land at that value, that is nonetheless the appraised and market values that would be used under eminent-domain proceedings in Texas.

There are three caveats about the costs stated in the SRBFS as how it would apply to Option A. The first caveat is that Option A would only raise Lake Patman to an elevation of 231 feet above sea level, not the 232.5 feet studied by the SRBFS. That would reduce the number of acres inundated by about 3,000 acres, and lower the cost. The second caveat is that the cost for acreage would be 50 percent less than what is stated in the SRBFS. The third caveat is that the costs for building MN 1a, published in the SRBFS and by the 2016 Region C Water Plan, remain understated by at least $1.5 Billion (as reported in the "MN 1a Analysis" section of this study.)

Cost vs. Yield Analysis of Option A and MN 1a

As is reported in the "MN 1a Analysis" section of this study, an independent estimate contracted in 2002 for Oklahoma found that Marvin Nichols 1 would cost at least $5.1 Billion. By adjusting the Oklahoma estimate for inflation at a modest rate since the estimate was published, the current actual cost for Marvin Nichols would be at least $5.8 Billion. This means that Region C should expect at least an additional 35 percent cost increase for MN 1a over what Region C has published for 2016.

Option A would provide a 620,000 acre-foot yield to Region C. The total available yield of MN 1a for both Region C and Region D, according to the SRBFS, would be 590,000 acre-feet. Of that amount, Region C would get 489,800 acre-feet. That means that Option A would provide 27 percent more water than MN 1a would provide for Region C.

The cost of 27 percent more of MN 1a, which is currently understated as $4.3 Billion in the 2016 Region C Water Plan, would equal $5.5 Billion. That would require about $1.2 Billion more of MN 1a to statistically equal the same cost/yield ratio of Option A.

The adjusted Oklahoma estimate of building MN 1 is $5.8 Billion. The cost of 27 percent more of MN 1a, using the adjusted Oklahoma estimate, would make the cost of MN 1a to be $7.4 Billion. That would require about $3.1 Billion more of MN 1a to statistically equal the same cost/yield ratio of Option A. This analysis shows that Option A is superior in cost/yield to that of building the Marvin Nichols 1a Reservoir.

Patman/Chapman System of Reservoirs Option B

Option B is similar to Option A in that it provides for a system of reservoirs to supply water to Region C. The difference is that Option B adapts from the best reservoir strategy outlined in the December 2014 Sulphur River Basin Feasibility Study. The SRBFS published a pipeline system that proposes using Lake Patman, MN 1a and Lake Chapman. Option B removes MN 1a.

Design of Option B

Option B would start by using three 114-inch pipelines at Lake Patman, just as is used starting at MN 1a in the SRBFS. Option B would transport water to two additional important lakes, Lake Ray Roberts and Lake Bridgeport, than the stand-alone MN 1a strategy. This will enhance the system yield of Option B. Lake Grapevine could be added by providing a discharge at Denton Creek as Option B goes from Lake Ray Roberts to Lake Bridgeport, which would additionally increase the yield. That would bring the number of storage lakes available to nine: Chapman, Lavon, Hubbard, Lewisville, Grapevine, Ray Roberts, Bridgeport, Eagle Mountain and Worth.

More acre-feet could be provided if Region C would later decide to add Lake Fork and Lake Tawakoni to the system of reservoirs by adding pipelines from Option B pipelines to those lake's northern tributaries. Region C could later decide to also add off-channel and/or on-channel storage reservoirs near the pipeline in Region C to hold more water from the Sulphur River.

There exists pipeline capacity to add water from Lake Millwood and Lake Erling if an agreement can be made with those lake's controlling agencies and with the State of Arkansas, and could provide an ability to add water from Oklahoma's Little River reservoirs. Water from Lake O' The Pines could be added at Booster Pump Station #1.

Cost Estimates for Option B

Option B is an apple vs. apple comparison of cost estimates. The cost of Option B, as stated in Table-2 of this proposal, is estimated to be $6.2 Billion. When the SRBFS cost analysis for raising Lake Patman is added, the price would rise to $6.4 Billion. It would raise the elevation of Lake Wright Patman to 232.5 feet above sea level. It would provide more than 60 percent more water than MN 1a, yet would cost only 49 percent more than

MN 1a when compared to the 2016 Region C estimate. The cost of MN 1a is published in the 2016 Region C Water Plan in Table Q-18.

The SRBFS states that the additional costs associated with raising Lake Patman to elevation 232.5 feet would be $292 million. However, the land that would be additionally inundated, and the land that likely would be used to mitigate with, is under a US COE easement arrangement. That land value has been lowered due to numerous constraints about how the land can be used, such as no homes or permanent buildings of any kind. That land is generally valued and appraised at less than $1,000 per acre. The SRBFS used a generalized figure of $2,000 per acre in its calculations, making the costs stated in their study for land mitigation over-inflated for this strategy's mitigation requirements. While it is true that those landowners could generally not find replacement land at that cost, that is nonetheless the appraised and market values that would be used under eminent-domain proceedings in Texas.

The addition of the estimates for raising Lake Patman would bring the total cost to $6.4 Billion for Option B. There are two caveats. The additional costs published by the SRBFS regarding raising Lake Patman to elevation 232.5 are overstated, and the costs for building MN 1a as stated in the 2016 Region C Water Plan remain understated by about $1.5 Billion.

Cost vs. Yield Analysis of Option B and MN 1a

As is reported in the "MN 1a Analysis" section of this study, an independent estimate contracted in 2002 for Oklahoma found that Marvin Nichols 1 would cost at least $5.1 Billion. By adjusting the Oklahoma estimate for inflation at a modest rate since the estimate was published, the current actual cost for Marvin Nichols would be at least $5.8 Billion, which agrees with the "MN 1a Analysis" of this study. This means that Region C should expect at least an additional 35 percent cost increase for MN 1a over what Region C has published for 2016.

Option B would provide a 785,000 acre-foot yield for Region C. The total yield of MN 1a for Region C and for Region D, according to the SRBFS, would be 590,000 acre-feet. Of that amount, Region C would get 489,800 acre-feet according to the 2016 Region C Water Plan as stated in its Table Q-18. That means that Option B would provide more than 60 percent more water than MN 1a for Region C.

The cost of 60 percent more of the project cost of MN 1a, as currently understated in the 2016 Region C Water Plan, would be $6.9 Billion. That would require $500,000,000 more of MN 1a to statistically equal the cost/yield of Option B.

The current adjusted Oklahoma estimate of building MN 1 is $5.8 Billion. That would make the cost of 60 percent more of the cost of MN 1a to be $9.3 Billion. That would require $2.9 Billion more of MN 1a to statistically equal the cost/yield of Option B

CANAL OPTIONS

The information from this part of the study is based on a January 2015 US Army Corps of Engineer report titled "Update of 1982 Six State High Plains Aquifer Study." It studied a method for supplying large quantities of water across Kansas using water from the Missouri River. The COE Study also compared itself with a canal recently completed in Arizona using the Colorado River, and compares itself with two additional projects, which indicate that the study's estimates are credible. An adaptation has been made in this proposal to use the same constructs to supply water for Region C.

Canal options have generally not been studied as a major water transportation option for Region C. The US COE study for Kansas indicates that canals should be considered as a methodology for transporting large amounts of water for Region C.

The Northeast Texas Canal (NTC) Option

The Northeast Texas Canal (NTC) Option provides the least expensive method for transporting large quantities of water from the Sulphur River Basin. The NTC will provide a water supply of 850,000 acre-feet to Region C from the Sulphur River Basin, and could increase to carry 1.4 million acre-feet depending on additional water supply connections. The NTC would provide a run-of-river to Region C reservoirs as well as transport water stored at Lake Wright Patman and from other water supplies available and connected.

Design of the NTC

The NTC is a 2,000 cubic-foot per second canal from Lake Wright Patman to Lake Ray Roberts, then a 1,200 cfs canal from Lake Ray Roberts to Lake

Bridgeport. It would start on the south side of Lake Patman and proceed to the south side of the White Oak Creek, south of the White Oak Creek Wildlife Management Area. It would then crest to the South Sulphur River to Lake Chapman to begin its delivery of water to Region C reservoirs. The NTC would continue along the South Sulphur River to the Upper Trinity River Basin and then on to Lake Ray Roberts. The canal would then reduce in size to 1200 cfs and proceed to Lake Bridgeport.

The NTC would stay inside the northern reaches of the Trinity River Basin. There are eleven lakes that would receive water from the NTC: Chapman, Tawakoni, Fork, Lavon, Hubbard, Lewisville, Grapevine, Ray Roberts, Bridgeport, Eagle Mountain and Worth. Region C could later add more reservoirs (off-channel or otherwise) for storing additional surplus waters.

The NTC is designed so that it can provide additional water supply from sources in Arkansas and Northeast Texas to Region C. Water from the Arkansas-Texas Canal (ATC), described later in this study, could add up to 700,000 acre-feet. If the ATC is not added, there exists canal capacity to add water from Lake Millwood and Lake Erling if an agreement can be made with those lake's controlling agencies and with the State of Arkansas, and could provide an ability to add water from Oklahoma's Little River reservoirs. Water from Lake O' The Pines could be added with a short pipeline segment to the NTC. In addition, as a pipeline segment crosses the area of the Lower Sulphur River from Lake Erling, it might be possible to add run-of-river supply from the Sulphur River near its confluence with the Red River.

The NTC would raise the elevation of Lake Wright Patman to 231 feet above sea level. The SRBFS states that the additional costs associated with raising Lake Patman to elevation 232.5 feet would be $292 million. Since the NTC only raises Lake Patman to 231 feet, it would flood about 3,000 fewer acres. Additionally, the land that would be inundated, and the land that likely would be used to mitigate with, is under a US COE easement arrangement. That land value has been lowered due to numerous constraints about how the land can be used, such as no homes or permanent buildings of any kind. That land is generally valued and appraised at less than $1,000 per acre. The SRBFS used an overly generalized figure of $2,000 per acre in its calculations, making the costs stated in its study for land mitigation over-inflated for this scenario. While it is true that those landowners could generally not find replacement land at that cost, that is nonetheless the appraised and market values that would be used under eminent-domain proceedings in Texas.

It will be easier to add water charging and discharging sites along the way with a canal. One example would be deciding later to add water from Lake O' The Pines, or to provide water to a reservoir near Wichita Falls. It would be easier than pipeline reconstruction and design.

The NTC will be much less expensive to build per mile. It is arguable more reliable since canals are not subject to the long-term pressures and corrosions that pipelines face. The reduced friction levels of a canal make for a more economical solution over that of a pipeline. The pumps use less electricity to pump the same water in a canal system since backpressures are greatly reduced over that of a high-pressure pipeline system.

Cost Analysis of the NTC

Cost estimates are based on the published January 2015 study completed by the US Army Corps of Engineers (COE) regarding a canal project in the State of Kansas. The gain in elevation of the NTC would be less than the altitude gain required in Kansas, so fewer pumps, and the infrastructure associated with the pumps, will be necessary.

The NTC construction cost estimate is $3.9 Billion. With the cost of raising Lake Wright Patman to an elevation of 231 feet added, the cost rises to $4.1 Billion. The summary of costs for the NTC is shown in Table 4.

East Texas Canal (ETC) Option

The East Texas Canal (ETC) Option provides a less expensive method for transporting water from Lake Toledo Bend, Lake Sam Rayburn, Lake Steinhagen, and Lake Livingston. The ETC would supply 1 million acre-feet of water to Region C. It could be increased to supply 1.4 million acre-feet if that amount of water supply were made available.

For this study, the water supply scenario considered is 700,000 acre-feet from Toledo Bend, 100,000 acre-feet from Lake Sam Rayburn, 100,000 acre-feet from Lake Steinhagen, and 100,000 acre-feet from Lake Livingston. All four lakes are capable of greater yields than what are listed for this scenario; therefore, many different water supply scenarios are possible.

The Toledo Bend water availability has been stated as higher than 700,000 acre-feet by the Sabine River Authority, and could be higher still if the State of Louisiana will allow the sale of any of its share of Toledo Bend water to Texas. The 100,000 acre-feet for Lake Steinhagen and 100,000 acre-feet for Lake Sam Rayburn is based on data from the TWDB Study "Volumetric Survey of Sam Rayburn Reservoir." In addition, Region C has a run-of-river strategy for the Neches River, which could be captured instead at Lake Steinhagen. The water availability for Lake Livingston is based on the 2011 Region C Water Plan, where Tables Q-33, Q-34 and Q-35 all planned 200,000 acre-feet from Lake Livingston for different Region C water agencies.

The ETC is a superior water strategy for several reasons. It will provide more water at a lower cost. Most importantly, it will provide water from basins that are more likely to have water available during a sustained drought event in Region C. The ETC adds water originating from river basins that are further south and east and receive more rainfall. That means a more drought resistant strategy for Region C, which is what one of the primary goals should really be, at least until the price of desalination becomes more affordable.

The ETC will be less expensive to build per mile. It is arguable more reliable since canals are not subject to the long-term pressures and corrosions that pipelines face. The reduced friction levels of a canal make for a more economical solution over that of a pipeline. The pumps use less electricity to pump the same water in a canal system since backpressure is reduced over that of a high-pressure pipeline system.

Design of the ETC

The ETC would be a 2,000 cubic-foot per second concrete-lined canal transporting water from near the dam of Lake Toledo Bend to a tributary leading into Lake Sam Rayburn. From there water would be released by spillway and power generation facilities to Lake Steinhagen. From Lake Steinhagen, a canal would carry the water to Lake Livingston. From Lake Livingston, the ETC would carry the waters to Lakes Richland-Chambers and Cedar Creek.

The gain in elevation of the ETC would be a small fraction of that which was studied for the Kansas system. There would be no need to build a source or destination reservoir for the ETC, no need to build a dedicated power generation facility, or a lock and dam.

Since the ETC does not need reservoir storage in Region C, there exist numerous options for proceeding from Lakes Richland-Chambers and Cedar Creek. Much would depend on how Region C addresses obtaining water from the Sulphur River Basin, and what water agencies would participate in funding the ETC. From that determination, canals and/or pipelines could proceed to other reservoirs, or proceed directly to water treatment facilities. Therefore, the study of the ETC ends with the ETC at Lakes Richland-Chambers and Cedar Creek.

(It should be pointed out that the river basin in which the ETC travels could be changed to follow the Sabine, Angelina or Neches River Basins rather than the Trinity River Basin. However, those could be longer canals and would deprive the generation facility at Lake Sam Rayburn of using the additional water from Toledo Bend for making electricity.)

Cost Analysis

Cost estimates are based on the published January 2015 study completed by the US Army Corps of Engineers (COE) regarding a canal project in the State of Kansas. The estimated cost of building the ETC is $4.5 Billion. Table 6 shows a summary of these costs.

Getting 1 million acre-feet to Lakes Richland-Chambers and Cedar Creek is a considerable amount of water at a price much lower than the $6.3 Billion it would cost to get just 348,000 acre-feet from Toledo Bend via pipelines to Region C as is stated in the 2016 Region C Water Plan.

The Arkansas-Texas Canal (ATC) Option

First, it is important to point out that the Arkansas-Texas Canal (ATC) Option is a strategy somewhat similar to one that was published by the Texas Water Development Board in December 1976. The TWDB report, "An Assessment of Surface Water Supplies of Arkansas with Computations of Surplus Supplies and a Conceptual Plan for Import to Texas," sought to find more water for Texas after the 1968 Texas Water Plan failure at the polls. Therefore, the ATC Option is not a totally new idea or strategy. The ATC, however, is based on the analysis of the 2015 COE Kansas study.

The ATC is a supplementary option to the Northeast Texas Canal; it is not presented as a standalone option. The cost versus the potential yield available would not be as low as other options of this study if it was constructed by itself.

The ATC should be a water strategy for Region C. Rather than building a facility in the same rain shadows within Texas, the ATC can reach to water supplies that originate in Colorado, Kansas, Oklahoma, Missouri and Arkansas. That means a more drought resistant strategy for Region C, which is what one of the primary goals should really be, at least until the price of desalination becomes more affordable.

After communicating with agencies in the State of Arkansas, it was discovered that the State of Arkansas could be interested in water agreements that would assist them in meeting their domestic priority to provide its water to the people of Arkansas. Therefore, a key to obtaining water with Arkansas is to help it with its priorities.

The farmers in Eastern Arkansas are now drilling for groundwater at an increased rate to irrigate their crops, and groundwater is depleting. If trends continue, many farms may have to either change to less valuable drought-resistant crops, or to cease operation completely.

Southern Arkansas has been given a critical groundwater designation, as was published in a status report produced by the Arkansas Natural Resources Commission (ANRC) to the State of Arkansas Legislature in 2012. The report includes many Southern Arkansas counties that are classified as being in Critical Areas. Some of these include Bradley, Calhoun, Columbia, and Ouachita Counties, all of which happen to lie along the route of the ATC.

By partnering with the State of Arkansas, Region C could build the ATC with a surplus of capacity, and work with Arkansas to carry and deliver water to meet the needs of its people as the ATC passes through the State. Because canals are much less expensive to build than pipelines, this would be a win-win for both Arkansas and Region C.

The calculated excess surface water available for interbasin/interstate transfers for non-riparian use by the Arkansas and Ouachita Rivers has been published by the ANRC as 4,334,200 acre-feet per year. Near the proposed pump facility location on the Arkansas River is the White River, just before it flows into the Mississippi River. The White River is published to have 2,131,300 acre-feet per year available. The total possible available and uncommitted water in Arkansas from all three rivers is 6,465,500 acre-feet per year. It may be possible that the State of Arkansas would permit up to 700,000 acre-feet per year of its uncommitted waters from the Arkansas and Ouachita Rivers to the State of Texas. That would equal 16.2 percent of the available water yield of the Arkansas and Ouachita Rivers, and 10.8 percent of the available water yield if the Arkansas, Ouachita and White Rivers were all accessed.

Design of the ATC

The ATC provides a 2,000 cfs concrete-lined canal from the Lower Arkansas River to Bayou Bartholomew, then a 1,200 cfs concrete-lined canal to Lake Wright Patman. It could proceed to construction once a successful Title III interstate permit has been submitted to the Arkansas Natural Resources Commission and is approved by the Arkansas Legislature.

The ATC will be much less expensive to build per mile than pipelines. The ATC is arguable more reliable than pipelines since canals are not subject to the long-term pressures and corrosions that pipelines face. The reduced friction levels of a canal make for a more economical solution over that of a pipeline. The pumps use less electricity to pump the same water in a canal system since backpressure is greatly reduced over that of a high-pressure pipeline system.

The ATC would transport water from the Arkansas River (just before it enters the Mississippi River,) the Ouachita River (just before it exits to the State of Louisiana,) then on to Lake Wright Patman. The ATC would likely start at a pumping facility near the Pendleton bridge, upstream from the Wilbur Mills Dam, on the Arkansas River. The ATC begins in a Southwesterly direction and will intersect current small canals, making water available for each as it passes. It would continue to a pumping facility at Bayou Bartholomew where it would release water into the Bayou, reduce in size to 1,200 cfs, and begin its travel over to the Saline River. After reaching the Saline River Basin, the water would flow into the Saline River.

The water would flow down the Saline River until it joins with the Ouachita River. A pump station would be located on the Ouachita River south of the Calion Lock and Dam. From there the ATC would continue west across Southern Arkansas, following Smackover Creek. When the ATC is just east of the Red River, the water would be transported by pipeline under the Red River. From there the ATC would proceed to Lake Wright Patman to join with the Northeast Texas Canal.

Cost Analysis of the ATC

Cost estimates are based on the published January 2015 study completed by the US Army Corps of Engineers (COE) regarding a canal project in the State of Kansas. The gain in elevation of the ATC would be less than the altitude gain required in Kansas, so fewer pumps, and the infrastructure associated with the pumps, will be necessary. There would be no need to build a source or destination reservoir for the ATC, no need to build a dedicated power generation facility, or a lock and dam.

The estimated cost for building the ATC is $2.2 Billion. The summary of costs for the ATC, as well as the cost when the ATC is combined with the NTC, is shown in Table 5.

Marvin Nichols 1a Analysis

For background purposes, it should be considered why Marvin Nichols 1a came into being. Marvin Nichols 1a is the third mutation of a site that originally was one cog in a 1968 Texas Water Plan strategy to pump a massive volume of water from the Lower Mississippi River, across Louisiana, through Texas, and then on to Albuquerque, New Mexico. Outside of that water strategy, the Naples Reservoir site (later renamed the Marvin Nichols Reservoir site) serves no essential purpose.

In 2001, Region C published that the Marvin Nichols 1 Reservoir would cost $1.7 billion. In the next Region C Water Plan, the cost was published as over $2 billion. Later still, the cost was published at over $3 billion. The 2016 Region C Water Plan states that Marvin Nichols 1a will cost $4.3 Billion. The published costs for building Marvin Nichols have increased over 250 percent in only 14 years, even though the dam site was moved several miles closer to Region C (which made the pipelines shorter and should have made MN 1a less expensive.) These figures illustrate the trend that the Region C Water Plan's cost estimates for Marvin Nichols have "always" been wrong and unreliable. The 2016 Region C published cost estimate for MN 1a has nearly reached the 2002 Oklahoma estimate of $5.1 Billion. That validates the 2002 Oklahoma estimate and Oklahoma's need to get an independent estimate over relying on the estimates given to Oklahoma in negotiations with Region C.

Years of inflation have increased the 2002 Oklahoma cost estimate of Marvin Nichols. When adjusted for inflation, the MN 1a cost estimate should be published as being at least $5.8 Billion. That means that MN 1a's actual estimated cost is at least 35 percent more than what is published in the 2016 Region C Water Plan.

The actual cost of building MN 1a has been, and still is, misrepresented in the Region C Water Plans due, in part, to stipulations that have been allowed by the Texas Water Development Board. Some impacts do not even have to be fully considered in site-cost analysis due to TWDB allowances (i.e. TWDB stipulations that do not demand accurate mitigation estimations for new reservoirs.) Unfortunately, this creates cost estimates in water plans that fall far short from being truly representative as to how high the costs would actually be. That denies important information to the taxpayers of Texas. Detailed here are three examples of cost errors regarding MN 1a:

Example 1: Mitigation Underestimation

The 2014 SRBFS analysis regarding the amount of mitigation for MN 1a is vastly understated, and therefore underestimates the actual cost of building MN 1a. In Table 6-2 of the SRBFS it states that the "Approximate Acres needed for Mitigation" for the 67,000 acre MN 1a at elevation 328 feet is 47,060. That calculates a mitigation rate average of only 0.71 acres for each acre inundated. The much lower quality habitat associated with the building of Lake Gilmer had an average of 1.5 acres for every acre flooded by that lake. Lake Chapman, further upstream from the MN 1a site, had only a small segment of about 6,000 acres of Priority 3 bottomland hardwood habitat in its less than 20,000 acre footprint, and Lake Chapman's mitigation was over 35,000 acres. That mitigation amount was only that low because the COE used superior habitat downstream to mitigate the lower quality habitat being lost at Lake Chapman; otherwise, the mitigation for Lake Chapman would have been more. MN 1a would inundate Priority 1 bottomland hardwood habitat, much higher quality than the Priority 3 bottomland hardwood habitat inundated at Lake Chapman. The SRBFS analysis fails comparisons with the lesser sized reservoir's mitigation, which had substantially lower habitat values.

It was shown in previous mitigation studies that the mitigation rate in the Sulphur River Basin, in the area of Marvin Nichols, can be 5 acres for every 1 acre inundated (and only that low if there is enough land of the same quality available to use for mitigation.) If the land quality that is used to mitigate with falls in its quality, it was shown that the ratio could advance upwards to 10 to 1. The MN site study by the U.S. Fish and Wildlife Service and the Texas Parks and Wildlife Department indicated this in their analysis of the original MN site. The SRBFS never approached these ratios in its study. Since the US FWS and the TPWD actually have seats at the table for the final mitigation determinations in Texas, their analysis must be seen as expert. The mitigation analysis of the SRBFS made a massive mitigation calculation error. The cost would be more than what is published in the 2016 Region C Water Plan.

Example 2: Underestimation of Archeological Impacts

Archeological analysis in two reports showed significant and high quality artifacts and burial locations consistent with a large and important Native-American settlement in what is now the footprint of MN 1a. A Corps of Engineer study worked between US Hwy 271 and the old Magnolia pipeline site, which is upstream of US Hwy 259. It studied from the Sulphur River up to an elevation of 320 feet. Archeological findings were cataloged and published by the COE and the Ark-Tex Council of Governments.

The COE study put actual "boots on the ground" for several weeks at what is now known as the MN 1a site. The study's investigation easily found highly significant Native-American burial sites and artifacts in the designated study area; some from tribes from the Southwestern United States not previously known to be in that area of Texas. Those artifacts were given to East Texas State University-Commerce, now known as Texas A&M University-Commerce. It is predictable that a required full investigation under the US COE 404 permit process would, at the very least, greatly extend the time and costs for construction. It is likely that the 404 permit research, by the COE, could inhibit the construction of MN 1, MN 1a (at any of its three studied water elevations,) and MN 1b.

<u>Example 3: Underestimation of Necessary Freeboard Allowance</u>
The freeboard (distance from the water to the top of the dam) design for MN 1a is too low, so the size and cost of the dam will have to be increased. In the guide "Freeboard Criteria and Guidelines for Computing Freeboard Allowances for Storage Dams" (which uses the same COE constructs as the SRBFS states that it used), it shows, in examples, that the freeboard should be 11-feet for a generic lake with a concrete soil surface on the lakeside of the dam, a fetch (open straight-line distance from the dam to where waves could begin) of 10 miles, and with 50 mph sustained winds. MN 1a would have substantially more fetch than just 10 miles at flood stage (about twice that), and it is likely to get winds greater than 50 mph for more than 1 hour during a significant encounter with the remnants of a hurricane. MN 1a's freeboard is published as being only 7-feet in the SRBFS.

The SRBFS states "*The total wave runup calculations under Normal Pool conditions assume the full design wind speed, producing large runup, while the calculations under PMF conditions **<u>allow</u>** for the use of a percentage of the design wind speed, producing lesser runup. This reduction factor ranges from 20% to 50% depending on the nature of the PMF reservoir stage hydrograph relative to the rainfall hydrograph.*"

While the COE has **<u>allowed</u>** calculations that would reduce the freeboard that a dam should have by up to 50 percent in certain situations, lowering the freeboard on a lake the size and depth of MN 1a would not be a safe consideration, and would likely be challenged.

The lakeside slope of the MN 1a dam is published in the SRBFS as being constructed using soil cement. The freeboard guide states that the freeboard, for soil cement dams, is supposed to be multiplied by a factor of 1.5. That means that MN 1a's freeboard should include a 50 percent increase in its height for wave runup (to stop the waves and to stop the run of the waves up the dam's angled and smoother concrete surface.) For MN 1a to need only 7-feet of freeboard, the largest probable waves to hit the dam, during flood conditions with maximum sustained winds, would need to be no greater than 4 feet 8 inches in height. There are flood events and wind conditions that would significantly exceed that wave height according to weather analysis and the tables from the freeboard guide.

The freeboard guide details the Choke Canyon Dam south of San Antonio, which is similar in embankment design and directional orientation as that of MN 1a. The Choke Canyon Reservoir has a fetch length of about 5.8 miles, and its freeboard's calculation was 6.6 feet. That was broken down in the example as 4 feet 7 inches for the freeboard times the factor increase for the use of soil cement on the dam.

Due to the long fetches of MN 1a and the lakeside soil cement dam surface, the graph from the freeboard guide times 50 percent indicates that the MN 1a dam should be engineered with a 15-foot freeboard for sustained 60 mph winds. That doesn't mean that MN 1a would have 15-foot waves; however, it does mean that the waves, plus conditions caused by the way the waves would interact with the design of the dam, indicates a safety zone of 15-feet of height above the probable maximum flood elevation for a prolonged 60 mph wind event.

Lake Patman, less than one-half the size that MN 1a would be, has over 26-feet between PMF and the top of the dam, and Lake Patman required no soil cement freeboard height increase. Cooper Lake, an even smaller lake, has a freeboard of over 13 feet and it has no soil cement surface on the dam. The elevation of the top of the MN 1a dam should not be lower than 350 feet above sea level instead of the published 342 feet; and really should be at least 355 feet above sea level. If MN 1a was built to an elevation of 355 feet, that would still be 20-feet lower than the freeboard of Lake Patman when adjusted to Lake Patman's lack of the smoother soil cement dam surface, as MN 1a would have. One likely probability for MN 1a needing more freeboard than only 7-feet would be a dam gate malfunction from a raft of floating trees during a flooding event (a likely fact of life if MN 1a were built.) It should be pointed out that the calculated probable maximum flood level in no way precludes the water level from getting higher than the PMF.

Given the weather events witnessed May 2015 in Texas, Lake Texoma and Lake Patman comes to mind as the examples to use in designing the freeboard for MN 1a, not the version that is published in the 2016 Region C Water Plan. The MN 1a dam would need to be longer, wider, and higher. The dam would cost more than what is estimated.

Summary of MN 1a analysis

The three examples detailed previously would increase the cost of building MN 1a, and calls into question the ability to permit a reservoir within Marvin Nichols' footprint. Some additional cost issues for the MN 1a site include: an underestimation by the SRBFS of the cost for soil stabilization for the dam, underestimation of the negative impacts from the nearby Talco-Mexia fault on MN 1a dam integrity, underestimation of the negative impacts to current and potential petroleum field activity in the vicinity by MN 1a, and that there are no meaningful measures planned to mitigate the continuing issue of floating tree masses and log jams in that area of the Sulphur River. The longtime issue of floating tree masses would not only predictably endanger the public if they would travel on the reservoir, but would also predictably threaten the operation of the outlet structures of the dam. The methods to address the negative impacts of the floating tree masses and bank erosion would likely require channel reconstruction and the building of check dams/weirs on the Sulphur River above MN 1a.

The examples and issues presented in this analysis indicate a substantial increase to the published cost for building MN 1a. Given the options to avoid MN 1a, it is likely that MN 1a would not be permitted by the U.S. Army Corps of Engineers 404 permit process.

CONCLUSION

Now is the time to diversify the water portfolio of Region C, not to choose strategies that simply trap the same rainwater just a few miles further up the same stream. Region C needs a more strategic water strategy. Options A or B should be recommended over MN 1a, and the Northeast Texas Canal, with the Arkansas-Texas Canal, and the East Texas Canal are strategies that should be pursued in the Region C Water Plan. The NTC/ATC together and the ETC each would provide much more water at less cost than the best scenarios studied in the Sulphur River Basin Feasibility Study. They would provide water from more diverse river basins.

The analysis of this study indicates that Marvin Nichols 1a would be a very large and costly "gotcha." The sponsors would predictably find themselves embroiled in a fiasco, in too deep to back out of the project, as in what happened with the Big Dig in Boston, Massachusetts. There, the taxpayers got stuck with a series of cascading gotchas, all while the designers proclaimed their surprise when the true realities of the project became obvious. It was discovered too late that many elements had been underestimated; important realities had been ignored as being "nothing to worry about." In the end, the public's piggybank got busted for Billions of dollars more with the Big Dig. Marvin Nichols 1a is a Big Dig in waiting.

During the U.S. Army Corps of Engineers 404 permitting process, Options A and B would indicate that Marvin Nichols 1a is neither essential, nor necessary, to provide water for Region C. The high negative impacts of MN 1a would not be recommended over alternative strategies that would provide substantially lower impacts as well as better cost vs. yield of water. This indicates that Marvin Nichols 1a would not be permitted by the COE. Even before the permitting process could possibly begin, there would be years of court battles. This means that Region C is likely wasting Texas taxpayer planning dollars and the time that Region C could be using to pursue doable strategies for Texans.

The options presented in this study provide more water, are less expensive, are less controversial, have fewer negative impacts, can be done, and can be done soon. They are projects that would be good legacies to leave for the people. Most of all, the options of this study are very much in the best interests of Region C, of Region D and of the whole State of Texas.

Table 1

OPTION A

Advanced Patman/Chapman System of Reservoirs

Yield 620,000 acre-feet per year yield to Region C

Costs are based on Table Q-18 from the 2016 Region C Water Plan
(By some dredging of Patman, and locating the Lake Pump Station west of Atlanta State Park, distance for Patman to Chapman pipelines could be 10 miles shorter, thus this option could be even less expensive than what is listed in this table.)

ITEM	COST
Pipeline Rural (Lake Wright Patman to Lake Chapman) 2 x 124-inch	1,285,872,000
Right of Way Easements Rural (ROW)	18,297,000
Engineering and Contingencies (30%)	391,251,000
Permitting & Mitigation	13,288,000
Pump Stations with Intake (Wright Patman to Lake Chapman)	118,700,000
Ground Storage Tanks at booster station	18,428,000
Engineering and Contingencies for pump stations (35%)	47,995,000
Permitting & Mitigation for booster station	1,263,000
Subtotal of Pipeline Infrastructure (Lake Patman to Lake Chapman)	1,895,094,000

Pipeline Rural (Lake Chapman to Lake Lavon) 2 x 124-inch	480,804,000
Pipeline Urban (Lake Chapman to Lake Lavon) 2 x 124-inch	37,340,000
Right of Way Easements Rural (ROW)	6,841,000
Right of Way Easements Urban (ROW)	927,000
Engineering and Contingencies (30%)	157,774,000
Permitting & Mitigation	5,777,000
Pump Station with Intake	61,000,000
Engineering and Contingencies for Pump Station (35%)	21,350,000
Permitting & Mitigation for pump station	1,263,000
Subtotal of Pipeline Infrastructure (Lake Chapman to Lake Lavon)	773,076,000

Pipeline Rural (Lake Lavon to Lake Lewisville) 2 x 102-inch	131,677,000
Pipeline Urban (Lake Lavon to Lake Lewisville) 2 x 102-inch	276,552,000
Right of Way Easement Rural (ROW)	5,238,000
Right of Way Easement Urban (ROW)	9,589,000
Engineering and Contingencies (30%)	122,469,000
Permitting and Mitigation	4,082,000
Pump Station	18,954,000
Ground Storage Tanks	12,285,000

Engineering and Contingencies for Pump Stations (35%)	10,934,000
Permitting and Mitigation for Pump Station	312,000
Subtotal of Pipeline Infrastructure (Lake Lavon to Lake Lewisville)	592,092,000

Pipeline Rural (Lake Lewisville to Eagle Mountain Lake) 1 x 96-inch	232,294,000
Pipeline Urban (Lake Lewisville to Eagle Mountain Lake) 1 x 96-inch	139,364,000
Right of Way Easement Rural (ROW)	5,173,000
Right of Way Easement Urban (ROW)	5,412,000
Engineering and Contingencies (30%)	111,497,000
Permitting and Mitigation	3,717,000
Pump Station	22,476,000
Ground Storage Tanks	12,285,000
Engineering and Contingencies for Pump Stations (35%)	12,166,000
Permitting and Mitigation (for Pump Station)	348,000
Subtotal of Pipeline Infrastructure (Lake Lewisville to Eagle Mountain Lake)	544,732,000
CONSTRUCTION TOTAL	3,804,994,000
Interest During Construction	292,985,000
TOTAL CAPITAL COST	**$4,097,979,000**

COMPARISON - Patman/Chapman System Option A and MN 1a	
The Patman/Chapman System acre-feet yield for Region C	620,000
Marvin Nichols 1a proposed total acre-feet yield for Region's C and D	590,000
Marvin Nichols 1a acre-feet yield for Region C according to Table Q-18	489,800

Percentage of increase of Patman/Chapman System yield over Marvin Nichols 1a yield for Region C	27%

Approx. Cost savings of Patman/Chapman System Option A over MN 1a versus 27% more water to Region C. **(using the 2016 Region C Water Plan's estimate of $4.3 Billion for MN 1a and adding the costs associated with raising Lake Patman)**	**$1,160,000,000**

TABLE 2

Option B

Advanced Patman/Chapman System of Reservoirs

Lake Wright Patman to Lake Bridgeport
Yield 785,000 acre-feet per year

Costs are based on December 2014 Sulphur River Basin Feasibility Study (By some dredging of Patman, and locating the Lake Pump Station west of Atlanta State Park, distance for Patman to Chapman pipelines could be 10 miles shorter, thus this option could be even less expensive than what is listed in this table.)

ITEM	COST
Pipeline Rural - WP/LPS to LPS/Chapman 3 x 114-inch	1,655,536,000
Right of Way Easement Rural (ROW)	2,980,000
Engineering and Contingencies (30%)	542,472,000
Permitting and Mitigation	22,656,000
Patman Intake Facility	83,710,000
Engineering and Contingencies for Intake Facility (35%)	29,299,000
Permitting and Mitigation (for Intake Facility)	1,005,000
LPS/Patman Pump Station	159,510,000
Engineering and Contingencies (35% for Pump Stations)	55,829,000
Permitting and Mitigation (for Pump Station)	1,914,000
Pump Station BPS #1	159,510,000
Engineering and Contingencies (35% for Pump Stations)	55,829,000
Permitting and Mitigation (for Pump Station)	1,914,000
BPS #1 Storage Reservoir	39,633,000
Engineering and Contingencies (35% for Storage Reservoir)	13,872,000
Permitting and Mitigation (for Storage Reservoir)	476,000
Subtotal of Pipeline Infrastructure from Wright Patman to Chapman	2,826,145,000

Pipeline Rural - LPS/Chapman to North WTP 3 x 114-inch	617,003,000
Pipeline Urban - LPS/ Chapman to North WTP 3 x 114-inch	23,564,000
Right of Way Easement Rural (ROW)	6,899,000
Right of Way Easement Urban (ROW)	1,146,000
Engineering and Contingencies (30%)	192,170,000
Permitting and Mitigation	7,687,000
Pump Station BPS #2	159,510,000
Engineering and Contingencies (35% for Pump Stations)	55,829,000

Permitting and Mitigation (for Pump Station)	1,914,000
Subtotal of Pipeline Infrastructure from LPS/Chapman to North WTP	1,065,722,000

Pipeline Rural - North WTP Split to Wylie WTP Split/BPS#3 3 x 108-inch	163,169,000
Right of Way Easement Rural (ROW)	2,007,000
Engineering and Contingencies (30%)	48,951,000
Permitting and Mitigation	1,958,000
Pump Station	76,268,000
Engineering and Contingencies (35% for Pump Stations)	26,694,000
Permitting and Mitigation (for Pump Station)	915,000
BPS#3 Storage Reservoir	28,705,000
Engineering and Contingencies (35% for Storage Reservoir)	10,047,000
Permitting and Mitigation for Storage Reservoir	344,000
Subtotal of Pipeline Infrastructure	359,058,000

Pipeline Rural - BPS #3/Wylie WTP Split to Trinity 2 x 120-inch	534,678,000
Pipeline Urban - BPS #3/Wylie WTP Split to Trinity 2 x 120-inch	23,278,000
Right of Way Easement Rural (ROW)	5,513,000
Right of Way Easement Urban (ROW)	1,029,000
Engineering and Contingencies (30%)	167,387,000
Permitting and Mitigation	6,695,000
Discharge Structure - Wylie WTP	2,885,000
Engineering and Contingencies (30%)	866,000
Permitting and Mitigation - for Discharge Structure	35,000
Subtotal of Pipeline Infrastructure	742,366,000

Pipeline Rural - Trinity River/Ray Roberts Split to BPS #4 1 x 114-inch	57,567,000
Pipeline Urban - Trinity River/Ray Roberts Split to BPS #4 1 x 114-inch	6,170,000
Right of Way Easement Rural (ROW)	795,000
Right of Way Easement Urban (ROW)	361,000
Engineering and Contingencies (30%)	19,121,000
Discharge Structure - Trinity River	13,590,000
Engineering and Contingencies (30%)	4,044,000
Permitting and Mitigation - for Discharge Structure	163,000
Subtotal of Pipeline Infrastructure	101,811,000

Pipeline Rural - BPS #4 to Lake Bridgeport 1 x 114-inch	250,595,000
Pipeline Urban - BPS #4 to Lake Bridgeport 1 x 114-inch	3,526,000
Right of Way Easement Rural (ROW)	3,461,000
Right of Way Easement Urban (ROW)	206,000
Engineering and Contingencies (30%)	76,236,000

Permitting and Mitigation	3,049,000
Pump Station #4	51,192,000
Engineering and Contingencies (35% for Pump Stations)	17,917,000
BPS#4 Storage Reservoir	14,940,000
Engineering and Contingencies (35% for Storage Reservoir)	5,229,000
Permitting and Mitigation for Storage Reservoir	179,000
Permitting and Mitigation (for Pump Station)	614,000
Discharge Structure - Bridgeport	4,356,000
Engineering and Contingencies (30%)	1,307,000
Permitting and Mitigation - for Discharge Structure	52,000
Subtotal of Pipeline Infrastructure	432,859,000

Pipeline Rural - North WTP Split to NWTP TSR 1 x 84-inch	13,498,000
Right of Way Easement Rural (ROW)	340,000
Engineering and Contingencies (30%)	4,049,000
Permitting and Mitigation	162,000
Discharge Structure	2,885,000
Engineering and Contingencies (30%)	866,000
Permitting and Mitigation - for Discharge Structure	35,000
Subtotal of Pipeline Infrastructure	21,835,000

Pipeline Rural - Wylie WTP Split/BPS#3 to Wylie WTP 1 x 96-inch	153,328,000
Pipeline Urban - Wylie WTP Split/BPS#3 to Wylie WTP 1 x 96-inch	6,507,000
Right of Way Easement Rural (ROW)	2,870,000
Right of Way Easement Urban (ROW)	516,000
Engineering and Contingencies (30%)	47,951,000
Permitting and Mitigation	1,918,000
Subtotal of Pipeline Infrastructure	213,090,000

Pump Station - Existing Chapman LPS Upgrade	10,000,000
Engineering and Contingencies (35% for Pump Stations)	3,500,000
Permitting and Mitigation (for Pump Station)	120,000
Subtotal (Existing Chapman LPS Upgrades)	13,620,000

Pump Station (Existing Irving BPS Upgrades)	5,000,000
Engineering and Contingencies (35% for Pump Stations)	1,750,000
Permitting and Mitigation (for Pump Station)	60,000
Subtotal (Existing Irving BPS Upgrades)	6,810,000

Total Pipeline Cost	5,783,316,000

Interest During Construction	445,315,000

TOTAL CAPITAL COST of OPTION B	**$ 6,228,631,000**

COMPARISON - Patman/Chapman System Option B and MN 1a	
The Patman/Chapman System acre-feet yield for Region C	785,000
Marvin Nichols 1a proposed total acre-feet yield for Region's C and D	590,000
Marvin Nichols 1a acre-feet yield for Region C according to Table Q-18	489,800

Percentage of increase of Patman/Chapman System yield over Marvin Nichols 1a yield for Region C	60%

Approx. Cost savings of Patman/Chapman System Option B vs. MN 1a times the increase of 61% more water yield to Region C **(using the 2016 Region C Water Plan's estimate of $4.3 Billion for MN 1a and adding the costs associated with raising Lake Patman)**	**$500,000,000**

Table 3

Costs of raising Lake Patman to elevation 232.5 according to Sulphur River Basin Feasibility Study (all tables from SRBFS)

Total Reallocation Costs according to Table 3-5	92,403,951
Real Estate Costs according to Table 4-3	9,400,000
Reservoir Conflicts & Relocation Costs according to Table 5-3	31,396,484
Mitigation Costs according to Table 6-2*	157,266,600
Cultural Resource Mitigation according to Table 6-4	1,550,000
Total Cost to Raise Wright Patman according to SRBFS	292,017,035

Partially Corrected Cost Analysis of Raising Wright Patman to elevation 232.5*	$ 213,383,735

*It is important to point out that during the course of eminent domain proceedings that private landowners are paid only the appraised costs of land, not what some might think they should get. The mitigation for Wright Patman at 232.5 feet is land that is under a US COE easement arrangement. The land is devalued because use is restricted and no permanent structures may be built there, i.e., no homes or barns. Therefore the cost of mitigation published in Table 5-3 of the SRBFS is stated over twice as high as the actual land mitigation cost for the scenarios studied. The land valuation should be averaged at no more than $1,000 per acre, which would still be high over what most landowners would be granted in eminent domain proceedings.

Table 4

Northeast Texas Canal
Lake Wright Patman to Lake Bridgeport, Yield 850,000 acre-feet

SECTION 1 Canal from Lake Wright Patman to Lake Ray Roberts

Item	2000 cfs costs
Pumping Stations	350,000,000
Canal	1,105,000,000
Pipeline (conduit)	283,000,000
Route Relocations	190,000,000
Subtotal Construction	1,928,000,000
Engineering and Contingencies (35%)	674,800,000
Total First Costs	2,602,800,000
Interest During Construction for 36 months	200,415,600
TOTAL CAPITAL COST FOR SECTION 1 CANAL	2,803,215,600

SECTION 2 Canal from Lake Ray Roberts to Lake Bridgeport

Item	1200 cfs costs
Pumping Stations	136,000,000
Canal	379,000,000
Pipeline (conduit)	93,000,000
Route Relocations	78,000,000
Automation & Communication	50,000,000
Subtotal Construction	736,000,000
Engineering and Contingencies (35%)	257,600,000
Total First Costs	993,600,000
Interest During Construction for 36 months	76,507,200
TOTAL CAPITAL COST FOR SECTION 2 CANAL	1,070,107,200

TOTAL CAPITAL COST FOR NTC LAKE WRIGHT PATMAN TO LAKE BRIDGEPORT	**$ 3,873,322,800**

TOTAL COST WITH RAISING OF LAKE WRIGHT PATMAN ADDED	**$ 4,086,706,535**

Table 5

Arkansas-Texas Canal
Arkansas River to Lake Wright Patman, Yield 700,000 acre-feet
2000 cfs Canal from Arkansas River to Bayou Bartholomew
1200 cfs Canal from Bayou Bartholomew to Lake Patman

Item	Cost
Pumping Stations	254,000,000
Canal	794,000,000
Pipeline (conduit)	218,000,000
Route Relocations	188,000,000
Automation & Communication	40,000,000
Total Construction Costs	1,494,000,000
Engineering and Contingencies (35%)	522,900,000
Total First Costs	2,016,900,000
Interest During Construction for 36 months	155,301,300

TOTAL CAPITAL COST FOR ATC ARKANSAS RIVER TO LAKE WRIGHT PATMAN	**$ 2,172,201,300**

TOTAL CAPITAL COST FOR COMPLETE ATC AND NTC, ARKANSAS RIVER TO LAKE BRIDGEPORT	**$ 6,045,524,100**

Table 6

East Texas Canal

Lake Toledo Bend to Lakes Richland-Chambers and Cedar Creek
Yield of 1,000,000 acre-feet
2000 cfs Canal

Item	Cost
Pumping Stations	562,000,000
Canal	1,595,000,000
Pipeline (conduit)	531,000,000
Route Relocations	339,000,000
Automation & Communication	75,000,000
Total Construction Costs	3,102,000,000
Engineering and Contingencies (35%)	1,085,700,000
Total First Costs	4,187,700,000
Interest During Construction for 36 months	322,452,900
TOTAL CAPITAL COST FOR ETC	**$ 4,510,152,900**

CLEAN WATER FUND

August 23, 2016

To:

J. Kevin Ward
Administrative Agent for Region C
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004
E-mail: regioncwpg@trinityra.org

From:

David Foster, State Director and Rita Beving, North Texas Outreach Coordinator
Clean Water Fund
600 West 28th St, Suite 202
Austin, Texas 78705
E-mail: dfoster@cleanwater.org; rbeving@cleanwater.org

Clean Water Fund Comments on the *2016 Initially Prepared Region C Water Plan*

Introductory remarks and summary

Clean Water Fund appreciates the opportunity to comment on the *2016 Initially Prepared Region C Water Plan* (hereafter, 2016 Draft Plan) and offers our thanks to the staff and consultants who have worked so hard to put it together. These written comments are an elaboration of the comments we submitted verbally at the June 24, 2015 public meeting.

Clean Water Fund is a national non-profit environmental organization, active in Texas since 1988, that promotes the public interest on issues relating to water, waste, toxics and natural resources. Our recent focus in Texas has been on promoting the emergence of a culture of water conservation, so that our state can meet the challenges posed by continued population growth, climate change, and recurring drought. Cities and regional water planning groups within the state can play a vital role in this outcome, through educational programs, rebates and other incentives, and investment choices that prioritize conservation and water efficiency--ur organization's preferred strategies of meeting future water needs-- ahead of costly new reservoirs and distribution infrastructure.

Clean Water Fund believes an increased emphasis on water conservation strategies is an imperative for the entire state. Texas' population continues to grow, and the recent extreme drought demonstrates the compelling need to use water more efficiently. The Texas Water Development Board's (TWDB) *2012 Water for Texas* projects that municipal water demand will outstrip that of all other sectors by 2060, growing from 27% to 38% of total demand, and that more than half of the funding it says will be needed to meet this demand – $27 of $53 billion -- will be allocated to municipalities. Investing in the most cost-effective strategies to meet municipal demand, then, along with tactics to lower overall demand, can save scarce dollars while helping preserve water resources.

Clean Water Fund acknowledge that much progress has been made in recent years in Region C with water conservation (see below), but we believe that the 2016 Draft Plan can be strengthened considerably by increasing the emphasis on conservation, while ramping down or eliminating its current emphasis on more expensive infrastructure strategies. More specifically, we recommend:

- Strengthening municipal conservation programs across the Region. Conservation should be the first priority in meeting demand;
- Incorporating drought contingency plans into the Plan as water supply measures, comparable to conservation programs. This will lower projected long-term demand, reducing or eliminating the need for expensive new reservoirs;
- Lowering per water capita consumption (GPCD) to 140 gallons per day in each city within Region C, as recommended by the Texas Water Conservation Implementation Task Force, within a clearly defined timeframe;
- Prioritizing leak detection and repair programs, with a goal that calls on each member city to reduce leakage at least 1% per year until water user groups lower water loss to the recommended industry standard of 10% or below;
- Exploring the potential benefits of aquifer storage and recovery (ASR) and investing in this where appropriate. The 2016 Draft Plan leaves on the table some 13 potential ASR projects that have been identified in other reports submitted to the state;
- Utilize existing reservoirs if needed, and construct new reservoirs only as a final resort, after the measures cited above have achieved their maximum benefit. Reservoirs are subject to water loss from evaporation, seepage, silting, and depletion. Moreover, reservoirs proposed in the 2016 Draft Plan will remove thousands of acres of valuable agricultural and forest land from production due to the surface area the reservoirs would inundate and the mitigation acres required for their construction.

The price tag for the projects recommended by the current 2016 Draft Plan totals more than $21 billion. This is more than twice as much as any other regional plan in the state, and amounts to almost 40% of the total amount the TWDB believes will be needed by 2060 statewide. Both fiscal prudence and fairness to the rest of the state warrant an alternative approach that identifies more cost-effective measures while protecting our water resources and the ecosystems they sustain.

1. Strengthen municipal water conservation programs

Clean Water Fund recommends that all cities within Region C implement proven, cost-effective conservation programs. These should include adopting meaningful rate structures that encourage and reward conservation, placing mandatory limits on the frequency and time of outdoor lawn watering, and offering rebates for installing water efficient appliances and plumbing fixtures.

Numerous studies have documented that conservation is the most cost-effective method, on a per-gallon or per-acre foot basis, of achieving reductions in water demand. Success stories in this realm are not hard to find. Over a twenty-five year period beginning in the 1980s, both San Antonio and Los Angeles doubled in size, while keeping their overall levels of water use constant. A recent study by the San Antonio Water Systems demonstrated its water conservation programs have saved an estimated $2 billion in avoided costs for infrastructure to develop and treat new water supplies. More recently, Austin has lowered its usage level from over 170 to below 140 GPCD in less than ten years.

Clean Water Fund recognizes the progress that has been made for water conservation within Region C, and appreciates that the 2016 Draft Plan calls for the share of water supply from reuse and conservation to increase from 23% in the 2011 plan to 27% in this plan. Laudable public awareness efforts include the North Texas Municipal Water District's "Water IQ" campaign, the joint Tarrant Regional Water District-Dallas Water Utilities campaign "Save water. Nothing can replace it," and the "Lawn Whisperer" campaign.

Some cities within Region C, in particular Dallas and Fort Worth, have succeeded in lowering GPCD through education programs such as these, and through rebates for low-flow toilets (Dallas Water's 'New Throne For Your Home" program), restrictions on time-of-day and the number of days per week for lawn watering.

However, most of the 2016 Draft Plan's projected gains from municipal conservation – over 65% – stem from improvements in federal standards for plumbing fixtures and appliances that are beyond the control of Region C, rather than from pro-active steps that communities within Region C adopt (Table 5E.9). Less that 9% of future water supply, per the 2016 Drat Plan, is to come from pro-active conservation measures.

This is borne out by the 2013 survey conducted by Region C of Water User Groups and wholesale water providers; less than half of the respondents have implemented the most basic conservation measures for residential customers (Table 5E.6). Per the survey:

- Less than 50% had a water system audit, leak detection/repair, or pressure control program;
- Less than 45% employed time-of-day-watering restrictions;
- Less than 40% provided water education programs to schools and the general public;
- Only 35% limited the number of days per week when lawn watering is allowed;
- Less than 35% had water rate structures that promoted conservation;
- Only 25% had policies against water waste;
- Less than 15% offered residential water audits;
- Less than 2% offered large water users (commercial/industrial/or institutional) rebates for installing or implementing water saving appliances or equipment.

The failure of most cities to implement limits on lawn watering is a case in point. According to a recent report from the Lone Star Sierra Club ("Water Conservation by the Yard"), cities in Texas that have limited lawn watering to no more than twice a week have seen an 8% drop in water demand; the report estimates that similar, required restrictions throughout Region C would achieve a comparable result, in effect doubling the total amount of water savings that the 2016 Draft Plan currently envisions from conservation, and lowering annual demand by over 120,000 ac. ft. per year.

Another area for improvement is rate structures. Clean Water Fund believes that access to clean, safe water is a basic human right. The amount of water a household needs to meet basic needs should therefore be maintained at an affordable rate. On the other hand, as water use becomes increasingly discretionary, its price should become more expensive. Rate structures therefore need to designed with a meaningful tier or block valuation, to incentivize conservation and to assure that water utilities remain financially solvent.

A 2014 study, "Designing Water Rate Structures for Conservation & Revenue Stability" commissioned by the Lone Star Sierra Club and the University of North Carolina's Environmental Finance Center, while recognizing that there is no 'one size fits all' rate structure, concludes that:

"Trends show that higher water prices are associated with lower average residential water use for water utilities that:

- increase rates from one year to the next (2012 to 2013),
- *charge more for water at 5,000 gallons per month* (emphasis added), and
- charge more at higher levels of water use."

Again, per the Region C's own survey cited above, only 35% of Water User Groups have rate structures in place that promote conservation. Most of the cities surveyed by Clean Water Fund do not have significant rate increases until monthly water use reaches 10,000 or even 15,000 gallons (with Dallas and Fort Worth being notable exceptions). This low rate structure is not sufficient to incentive homeowners to conserve water.

2. Implement a more aggressive and consistent plan to reduce average water consumption in each city to 140 GPCD by 2030

Notwithstanding notable reductions in GPCD recent years for some cities within Region C, many cities in Region C continue to have some of the highest GPCD levels in the state. This is especially true of rapidly growing suburban communities, such as Frisco, Plano, and Southlake.

The state's Water Conservation Implementation Task Force has recommended a GPCD goal of 140 for potable water supplied to municipal retail customers; it advised cities to reach this goal by 2020. The 140 GPCD number is itself a compromise, as a minority report from some of the stakeholders recommended a 125 GPCD threshold. Yet, as the survey conducted by Region C once again indicates, few cities have taken concrete steps to lower consumption levels to 140.

A July 2013 report entitled *"A Sustainable Water Plan for Texas"* by the Texas Center for Policy Studies concluded that the thirteen user groups with the highest GPCD levels could, if they lowered their GPCD levels to 140, save a combined total of over 400,000 ac. ft. of water each year. This is almost as much as the 450,000 ac. ft. that the proposed Marvin Nichols reservoir would provide.

Clean Water Fund recommends that each city within Region C implement a plan to reduce GPCD to 149 no later than 2030. Methods of doing this can vary from city to city, but the list of conservation measures listed above are a reasonable starting point.

3. Incorporate drought contingency plans as supply strategies and factor them in to demand forecasts

Clean Water Fund recommends that drought contingency plans be adopted in the 2016 and future Region C water plans as supply strategies. As the Texas Center for Policy Studies has argued ("A Sustainable Water Plan for Texas," July 2013), incorporating these plan on a par with conservation programs his will have the effect of lowering projected demand, thereby eliminating the perceived need to build expensive and controversial new reservoirs.

The 2011 Region C Plan states that drought contingency plans only are a "backup plan" in the event of severe drought and are therefore "not recommended as a water management strategy" to provide supplies. The 2016 Draft Plan reiterates this position, stating that "*Drought/emergency management measures* are temporary measures that are implemented when certain criteria are met and are terminated when these criteria are no longer met, while *water conservation measures* are designed to provide permanent or long-term water savings."

But Texas law mandates the development and implementation of drought contingency plans. These plans can therefore be seen as no different from improved plumbing codes, which the 2016 Draft Plan has built into demand forecasts. If drought contingency plans are factored in to demand forecasts, the gap between supply and demand would be lower, thereby reducing the costs and need for strategies for additional water supplies.

4. Increase leak detection and repair programs

While reducing water loss is one of the water conservation strategies listed in the 2016 Draft Plan, the Plan lacks specific metrics for achieving this. Clean Water Fund believes the Plan would be strengthened by including specific, measurable goals for leak reduction with the inclusion of a defined timeline for achieving its success.

The American Water Works Association indicates that water loss should be no more than 10% per year. According to Chapter 5E, p. 21-22 of the 2016 Draft Plan, region-wide municipal water loss in Region C totals more than 66 billion gallons per year, or 16.8% or of total water distributed, with most of this loss attributed to reported breaks and leaks, and unreported water loss. This equates to more than 58.6 billion gallons, or roughly 180,000 acre feet per year. To put this in context, this is slightly more than the combined amount of water projected to be secured from two new reservoirs: Lake Columbia (56,050 ac. ft.) and Lower Bois d'Arc Creek Reservoir (120,200 ac.ft). Of the ten water planning regions analyzed in the 2016 Draft Plan with high a high density of water connections, Region C is the third highest in terms of water loss.

Though the 2016 Draft Plan states that "enhanced water loss control programs are still a potentially feasible water conservation strategy," no real details are provided on how to address this. By contrast, the Draft 2016 Region H Plan sets a specific goal, calling on all municipal water user groups in the region with an annual water loss of 10% or greater to reduce this by at least one percent annually, until water loss is at or below the 10% benchmark. Clean Water Fund recommends that Region C set a comparable goal for municipal water groups within its area. It makes no sense to build new reservoirs in other regions (as the 2016 Draft Plan proposes), and in turn pipe that water into Region C, if 16% of it is going to be lost to leaks. Implementing a leakage reduction plan would be a better use of scarce dollars and be more protective of the environment.

5. Explore the potential benefits of Aquifer Storage and Recovery

While the Region C 2016 Draft Plan calls for more than $8 billion in new reservoirs, it fails to seriously consider the potential benefits that could be achieved from aquifer storage and recovery (ASR) projects. ASR is a more cost-effective, more effective strategy in conserving water, and poses less risk to the environment than building new reservoirs. The 2016 Region C Plan would be strengthened significantly by the inclusion of ASR projects and the removal of proposed reservoir projects.

Though the 2016 Draft Plan acknowledges that "ASR has the potential to store large volumes at lower costs than traditional surface storage," it asserts that "it is premature to determine the suitability of ASR as source of supply for Region C at this time."

The dismissal of ARS is perplexing. According to one engineering expert from Austin-based CH2M featured in an April 4, 2013 Texas Tribune story, "Aquifer storage projects can cost just 10 percent as much as reservoirs, and the permitting process is far faster." The Interim Report to the 84th Texas Legislature submitted to the House Committee on Natural Resources in January 2015 specifically mentions "13 study areas around Dallas for ASR sites," adding that these studies were "motivated by the 2011 drought's evaporation losses." The Texas Water Development Board's report, "Aquifer Storage and Recovery in Texas: 2015" states that six regional planning groups have included ASR as a recommended strategy in their 2012 water plans; but Region C continues not to be among them.

A June 14, 2015 CBS news report "Can Underground Aquifers Quench Texas' Massive Thirst?" indicates that the Tarrant Regional Water District (TRWD) is one of 20 Texas entities considering or studying an ASR project; yet the Draft the Region C water plan makes no mention of this project. CBS states that "3 trillion gallons of water gushed from Texas swollen rivers into the Gulf of Mexico in May alone of this year, and 2 trillion gallons will likely evaporate by year's end. Combined, the lost water would be enough to serve Texas' entire booming population for one year."

ASR is a proven technology, used in Texas since the 1980s. Of the 133 ASR projects nationwide, Texas is home to three: El Paso (operational since 1985); San Antonio (operational since 1995 and expanding); and Kerrville/Upper Guadalupe (operational since 2004).

ASR's benefits include:

- Storing water during wet times for use during dry, hot months
- Little to no loss to evaporation, since the water is stored underground
- Less vulnerability to contamination than surface water reservoirs
- Preserving land for current uses rather than inundating it beneath a reservoir
- Substantial cost reductions compared to reservoirs

In essence, the 2016 Draft Plan makes only a mere mention of ASR. Clean Water Fund feels there should be discussion in the 2016 Draft Plan of ASR sites under consideration in the DFW area and a more aggressive approach in implementing some or all of these ASR projects. ASR could provide Region C water with less loss than surface impoundments, require fewer miles of pipeline transport (and hence less water loss to leaks with less energy use) to the DFW region, and spare the inundation of the state's natural resources and the negative impacts on other regions' economies.

6. Utilize existing reservoirs before proposing new reservoirs

Clean Water Fund finds the 2016 Draft Plan's proposal to build eight new reservoirs unnecessary, excessively expensive, environmentally damaging, and harmful to the economies of neighboring regions. New reservoirs should only be considered as a final resort, after more effective water supply options have been exhausted, above all conservation. New reservoirs would have harmful impacts on natural and cultural resources, wildlife, environmental flows, and the economies of the regions where valuable agricultural and timberland would be permanently inundated. These economic impacts would be compounded by the need to provide additional acres of mitigation land. Clean Water Fund also believes that the full amount of mitigation acreage associated with these reservoirs should be quantified, so that the their full impacts can be understood.

The Region C 2016 Draft Plan recommends eight new reservoirs per Table 5B.3: Sulphur Basin Supplies (Marvin Nichols with the reallocation in Wright Patman Lake), George Parkhouse North, George Parkhouse South, Lower Bois d'Arc Creek, Lake Ralph Hall, Lake Columbia, Lake Tehuacana, and the Main Stem Reservoir. The total capital costs per Table 5B.3 of building new reservoirs would be more than $8 billion. These eight projects, coupled with the Neches-Run-of-the-River diversion and the Wright Patman project, would inundate more than 149,135 acres of East Texas agricultural and timberland It appears that the required mitigation acreage may not be reflected in these acreage numbers but only the imposed footprint of these projects.

Maximizing the potential of existing reservoirs should be prioritized ahead of new impoundments. Connecting the existing Lake O' the Pines, a strategy considered in the last 2016 Draft Plan, is no longer recommended in the current 2016 Draft Plan, which cites distance and supply as grounds for exclusion. Yet the yield from Lake O' the Pines (89,600 acre-feet of water per year) would produce almost as much water as Lake Tehuacana (41,600) and Lake Ralph Hall/reuse (50,121) combined, while costing only one-third as much these two together together ($362 million for Lake O' the Pines vs. $742,730,000 and $311,388,000 for Lake Tehuacana and Lake Ralph Hall, respectively). Connecting the existing Lake O' the Pines is a much more cost-effective approach than building new reservoirs.

Lake Livingston was also an existing water supply included in the last regional water plan, but is no longer included n the 2016 plan without any explanation for its removal.

The Marvin Nichols reservoir is the most expensive and controversial of all the proposed projects in the 2016 Draft Plan, at $4.2 billion in capital costs alone. This project has been a point of contention between Region C and Region D for more than 15 years. Region C admits that there is "known public opposition" (Table 5B.2), which persists in spite of the Texas Water Development Board's decision to side with Region C against Region D in the battle over Marvin Nichols. The opposition to Marvin Nichols from Region D and its residents is well documented. Litigation over the forced inclusion of this controversial project is well-documented and more litigation is likely in the future.

Clean Water Fund questions the 2016 Draft Plan's statement that only 41,722 acres would be inundated by Marvin Nichols; the figures in the Freese & Nichols report entitled "Analysis and Quantification of the Impacts of Marvin Nichols Reservoir," presented to the Texas Water Development Board in October 2014, states that 66,103 total acres would be inundated (Table 6) and that 42,823 acres timberland alone would be inundated (Table 8). The full mitigation acres for this project, and possibly that of other such projects, seem not have been included in this regional water plan.

Also missing from the evaluation of the proposed new reservoirs in Chapter 5 of the 2016 Draft Plan is the quantification of valuable land that will also be taken out of productive use and lost to mitigation through construction of the other proposed reservoirs. Appendix Y does give some of Freese & Nichol's analysis, drawn from the report cited that was presented to the TWDB in fall 2014. This report estimated that the mitigation acreage for the proposed Marvin Nichols project would be an additional 47,060 acres (page 25).

A 2002 study regarding the valued loss to Region D's timber industry alone by Dr. Xu of the Texas Forest Service stated that if the Marvin Nichols project was built (as proposed at that time) that the economic loss to that region's local economy would be "significant" with more than 1000 jobs eliminated and almost $163 million lost in industry output.

A report on the proposed Columbia reservoir prepared July 21, 2011 by Freese & Nichols stated that the Angelina & Neches River Authority (ANRA) "would need approximately 9,000 acres of mitigation land to account for the loss of 3406 FCUs in forested wetlands inundated by Lake Columbia." These mitigation acres are in addition to the 11,500 lost acres that would be lost in the construction of Lake Columbia.

Clean Water Fund recommends that the 2016 Draft Plan include numbers for the total amount of mitigation acres that would be lost in valuable agricultural and timber production for all of the reservoirs that the Plan proposes, not just for Marvin Nichols. It appears that these numbers may be almost as much as high as the footprint of the proposed reservoirs themselves.

CONCLUSION

In comparing the 2011 water plan to the 2016 draft plan, proposed reservoir projects have increased from 16% to 19% coupled with the run-of-river diversion totaling 20% in water impoundments. Region C is calling for more than $21 billion in infrastructure and impoundment projects with more than $8 billion in capital costs for new reservoirs.

Eight new reservoirs have been put forward as recommended or alternative strategies. Statewide, there is a call to create 30 new reservoirs over the next few decades. Almost 150,000 acres, mostly outside of the Region C area, would be inundated by the construction of these reservoirs, yet no estimated mitigation figures are reflected in the 2016 draft water plan.

According to the Legislative Budget Board's findings in 2012, reservoir projects average a $1010 per acre foot while conservation costs approximate $310 per acre foot.

Clean Water Fund is dedicated to the principle that water impoundments and pipeline projects should only be used when all water conservation strategies and existing resources available have been fully utilized or implemented. In the review of the information provided in the 2016 Region C Draft Water Plan, we see that more water savings could be obtained from water conservation strategies more consistently and widely applied across the 16-county area resulting in significant reductions in water use region-wide.

Additionally, new water conservation measures such as aquifer storage and recovery should be considered a more prudent and cost effective strategy than recommending the outdated impoundment of surface water where valuable land and jobs are permanently lost and regional conflicts arise.

We appreciate this opportunity to comment on this 2016 Draft Water Plan with the hope that a more vigorous and robust adoption of conservation measures and contemporary storage measures be implemented by Region C in moving toward its 2070 planning horizon.

dallas water utilities
city of dallas

September 1, 2015

J. Kevin Ward
Administrative Agent for Region C
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004

Re: Region C 2016 Initially Prepared Plan

Dear Mr. Ward:

Dallas Water Utilities (DWU) recently completed its review of the Region C 2016 Initially Prepared Plan (IPP) for consistency with Dallas' 2014 Long Range Water Supply Plan (LRWSP).

The attached memorandum dated August 28, 2015 provides a brief summary of significant findings in the Region C IPP that are inconsistent with Dallas' 2014 LRWSP. Table 1 of the attached memorandum provides a summary of all significant inconsistencies between the two plans and the Appendix contains a comprehensive summary table of all instances where Dallas is included in the IPP as well as the its consistency with Dallas' LRWSP.

Please review the attached memorandum and amend the IPP for consistency with Dallas' LRWSP. Do not hesitate to contact me at (214) 670-3843 or at denis.qualls@dallascityhall.com if you have any questions, or need any additional information.

Sincerely,

Denis W. Qualls, P.E., D.WRE
Senior Program Manager, Planning

cc: Jo. M. (Jody) Puckett, Dallas Water Utilities
Amy D. Kaarlela, P.H., Freese and Nichols

Our Vision: To be an efficient provider of superior water and wastewater service and a leader in the water industry.

1500 Marilla • Room 4AS • Dallas, Texas 75201
Telephone: (214) 670-3861 • Fax: (214) 670-5244

Memo

Date: September 1, 2015

Project: DWU – 2014 Long Range Water Supply Plan Contract Amendment No. 1

To: Denis Qualls, P.E.

From: Zach Stein, P.E. (TX – 106331) ZS
Cory Shockley, P.E. (TX – 94761) ACS

Subject: Review of the 2016 Region C Initially Prepared Plan for Consistency with the 2014 LRWSP

During the development of the 2014 Dallas Long Range Water Supply Plan (LRWSP), a parallel water planning effort was being performed by the Region C planning group to develop the 2016 Region C Water Plan. Efforts were made throughout the development of both plans to achieve consistency, where appropriate. The Region C planning group submitted their initially prepared plan (IPP) to the Texas Water Development Board (TWDB) on May 1, 2015. The IPP is currently available for review and comment.

HDR performed a review of the 2016 Region C IPP and checked the IPP for consistency with the 2014 LRWSP focusing on demands, supplies, needs, and the characteristics of recommended and alternative strategies. The purpose of this memorandum is to document findings from the review of the Region C IPP for consistency with the LRWSP. The following sections of this memorandum provide a brief summary of significant findings in the Region C IPP that are inconsistent with the LRWSP. Table 1, located at the end of the following sections, provides a summary of all significant inconsistencies between the two plans. A comprehensive summary table of all instances where Dallas is included in the IPP is located in the Appendix.

Population and Demands

A comparison of total demands (Dallas and customers) revealed that Region C demands ranged from 7.2 MGD less to 0.6 MGD more throughout the 2020-2070 planning period. Dallas relied on data from Region C as of September 12, 2014 for the demands included in the LRWSP. These differences are less than 2 percent of the total demand and occur as a result of Region C making small changes to the demands of Dallas' customers after September 12, 2014.

Existing Supplies

Dallas' existing supplies in the Region C IPP include supplies from reservoirs, Elm Fork streamflows, direct reuse, and return flows. Region C is required to determine supplies based on guidance from the TWDB for use in regional plan development. These assumptions are not consistent with all of the assumptions that Dallas used in determining supplies for the LRWSP. There are discrepancies in the projected supply estimates from Dallas' reservoirs. One differing assumption is that Region C does not assume return flows are available to the reservoirs. The LRWSP includes 2007 level return flows in all inflows for yield calculations. Region C attempts to make adjustments for the differences in how return flows are shown as an additional supply, separate from reservoir yield. HDR received documentation from Region C on how much return flows were going to be made available for future diversion by Dallas and these amounts were included in the analysis of the LRWSP. However, Region C changed the projected available return flows after they were originally provided to HDR for inclusion in the LRWSP and before the completion of the IPP.

Region C does not consider operations of Lake Grapevine similar to Dallas, therefore, the result is that the LRWSP assumes more supply available from the reservoir (about 5 MGD). Region C includes supplies from direct reuse (1 MGD for golf course irrigation) and supplies from White Rock Lake for irrigation. These supplies were not considered in the LRWSP.

Region C limits the combined supply from Lakes Fork and Tawakoni to 200 MGD based on pipeline capacity limitations and includes the additional supply from the reservoirs resulting from expanding the pipeline capacity as a recommended strategy. The LRWSP does not assume infrastructure limitation on supplies and assumes Dallas' full portion of the yields from Lakes Fork and Tawakoni are available as existing supplies.

As a result of these differences in assumptions, a comparison of total existing supplies reveals significant differences between the two plans. However, when Region C supplies from Lakes Fork and Tawakoni are not limited, total existing supply differences are less than 10.3 MGD (2 percent of total) throughout the 2020-2070 planning period. Almost all of this 10.3 MGD difference can be attributed to the adjustment of available return flows by Region C.

Needs

A comparison of Dallas' needs in the Region C IPP and LRWSP show differences of less than 12 MGD (5 percent) throughout the planning period if the Lakes Fork and Tawakoni pipeline capacity assumption is accounted for in the comparison. Almost all of these differences can be attributed to the adjustment of return flows and demands by Region C after the date when the LRWSP was presented to the Dallas City Council.

Recommended Water Strategies

Supply, total project costs, project characteristics, and environmental factors were compared for all of Dallas' recommended and alternative water strategies included in the Region C IPP and LRWSP. Annual and unit costs were not compared because Region C assumes 20-year debt service for non-reservoir projects and 40-year debt service for reservoir projects while the LRWSP assumes a 30-year debt service for all projects.

hdrinc.com 4401 West Gate Blvd., Suite 400, Austin, TX 78745-1469
(512) 912-5100

Conservation – The LRWSP uses an alternate methodology to determine the additional conservation savings. The LRWSP methodology is more in line with Dallas' Strategic Conservation Plan and results in 1.4 MGD to 3.4 MGD less conservation throughout the planning period when compared to the IPP.

Main Stem Pump Station – Dallas' portion of the capital costs are almost $17 million higher in the IPP than the LRWSP. Details provided in the IPP were insufficient to determine the reasons for the difference in the cost estimates. In addition, Region C assumes the full 31 MGD of return flow supply will be available to Dallas in 2020. The LRWSP assumes a supply of 23.1 MGD in 2020 and growing into the full 31.1 MGD in 2040.

Main Stem Balancing Reservoir – Costs and supplies for this strategy are consistent between the two plans.

IPL Lake Palestine Connection – Region C assumes less than the full 102 MGD of supply would be available from Lake Palestine because their yield calculations do not include return flows. The 2007 level of return flows included in Lake Palestine inflows for the LRWSP increase Dallas' supply from the reservoir to 102 MGD.

IPL Bachman Connection – Costs are consistent between the two plans. It should be noted that even though Region C shows a supply of less than 102 MGD from Palestine, the supply from the Bachman connection is 102 MGD in the IPP.

Neches Run-of-River – Supply and costs are consistent between the two plans. However, environmental considerations for the Nueces OCR strategy are incorrectly shown for the Neches Run-of-River strategy. These considerations incorrectly show medium to high levels of environmental impacts from the strategy. DWU is incorrectly shown as the owner of the project in the strategy cost summary. UNRMWA should be shown as the owner of the project.

Lake Columbia – Costs in the Region C IPP are roughly $63 million higher than in the LRWSP because Region C assumes a parallel pipeline to the IPL to transfer Lake Columbia supplies from Lake Palestine. The LRWSP assumes Lake Columbia supplies would be transferred in the additional 50 MGD of capacity available in the IPL.

Alternative Water Strategies

Direct Reuse – Region C indicates a supply of 2,242 acft/yr while the LRWSP estimates a supply of 2,501 acft/yr. Part of this difference can be attributed to Region C including the McCommas Bluff project in the Dallas reuse strategy. Costs in Region C are also significantly higher for the reuse projects when compared to the LRWSP. The two primary reasons for the cost difference is the inclusion of the McCommas Bluff project in the IPP and the LRWSP assumes Dallas would share a portion of the costs with the Bureau of Reclamation.

Carrizo-Wilcox Groundwater – Supply and costs are consistent with the LRWSP. The LRWSP write-up provides the only details regarding this strategy in the IPP. Region C indicates (Pg 5A.11) that this strategy will potentially import up to 102,930 acft/yr of groundwater; however, the LRWSP states that this amount is potentially available for development but the Carrizo-Wilcox Groundwater strategy will only provide and import 30,000 acft/yr.

Sabine Conjunctive Use (OCR and Carrizo-Wilcox Groundwater) – Supply and costs are consistent with the LRWSP. The LRWSP write-up provides the only details regarding this strategy in the IPP.

Red River OCR – Supply and costs are consistent with the LRWSP. The LRWSP write-up provides the only details regarding this strategy in the IPP.

Sulphur Basin Supplies – Region C assumes an alternate configuration of reservoirs in the Sulphur Basin for a strategy including only Dallas (82.1% ownership) and Irving (17.9% ownership). Dallas' share of the total cost of the project is about $3 billion dollars with this configuration and partnership. The LRWSP assumes Dallas would have 23.9% ownership of the recommend configuration presented in the Sulphur Basin study and Dallas would partner with TRWD, NTMWD, UTRWD, SRBA and the City of Irving. Dallas' portion of the total cost of the project with this configuration and partnership would be about $1 billion. Both configurations provide Dallas with 102 MGD of supplies. Dallas based the Sulphur basin strategy on available information from the Sulphur Basin Wide Study Report which is currently in draft form. The LRWSP acknowledges that there will likely be differences in the final configuration of this project.

Toledo Bend – Supply and costs are consistent with the LRWSP. The LRWSP write-up provides the only details regarding this strategy in the IPP.

Lake Texoma Desal – Supply and costs are consistent with the LRWSP. The LRWSP write-up provides the only details regarding this strategy in the IPP.

Table 1. Summary of Significant Inconsistencies

Region C IPP Page/Table	Subject	Comment
3.7	Indirect Reuse	The Main Stem Balancing Reservoir should be listed as an indirect reuse project on Page 3.7. The source of this project is Dallas' effluent from the Central and Southside Waste Water Treatment Plants.
5A.11	Interbasin Transfers	The Neches Run-of-River strategy should be included as a water management strategy requiring an interbasin transfer.
5A.12 - Table 5A.3	Interbasin Transfers	Table 5A.3 on Page 5A.12 incorrectly shows the maximum IBT amount for Lake Palestine and the Neches Run-of-River Supplies. The Lake Palestine maximum IBT amount should be 114,337 acft/yr and Neches Run-of-River Supplies maximum amount should be 47,250 acft/yr
5B.14	Neches Run-of-River	The text on Page 5B.14 incorrectly states that the Neches Run-of-River strategy includes conjunctive use with groundwater or tributary storage
P.61-65 Table Q-38	Neches Run-of-River	The following list details inconsistencies or incorrect information regarding the Neches Run-of-River strategy presented in the IPP on Pages 61-65. -The text incorrectly shows Sept 2011 costs. Costs should be Sept 2013. -The text states that one or more OCRs would be included in strategy. No OCRs would be included in the strategy. -The text states that diversions could be operated conjunctively with groundwater. Groundwater is not included in this strategy. -The text incorrectly states that the supply is 40 MGD or 44,840 acft/yr. The correct supply from the strategy is 47,250 acft/yr. -The environmental considerations for the Nueces OCR are incorrectly shown as the considerations for the Neches Run-of-River strategy. -The table in the water management strategy evaluation section incorrectly shows several environmental factors and impacts to Ag, natural resources, and other strategies as medium or high. These should all be low (probably taken from Nueces OCR strategy). -Table Q-38 incorrectly shows DWU as probably owner. The probably owner should be UNRMWA.
P.69-75 Table Q-17	Sulphur Basin Supplies	The following list details inconsistencies regarding the Sulphur Basin Supplies strategy. -Region C estimate of total cost is ~$2 billion greater than LRWSP -Region C assumes Dallas ownership of 82.1 % of an alternate configuration (DWU partner with Irving) instead of 23.9% of recommended configuration (DWU partner with TRWD, NTMWD, UTRWD, SRBA & Irving)

Appendix

hdrinc.com 4401 West Gate Blvd., Suite 400, Austin, TX 78745-1469
(512) 912-5100

Summary of Instances in the Region C IPP where Dallas or the LRWSP was Mentioned

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
		Executive Summary		
1	ES.3	Population	Yes	
2	ES.4	WWP	Yes	
3	ES.9 - Table ES.1	Recommended WMS	No	-Reuse implementation cost is ~$19 million greater -Palestine supply is 4,000 acft/yr less -Palestine cost is ~$51 million less -Columbia cost is ~$63 million more -See additional notes in individual WMS review
4	ES.12 - Table ES.2	Supplies	No	-2070 current supply is 10 MGD greater -2070 supply from WMS is 4 MGD less -Cost of Strategies is ~$378 million more (excluding infrastructure improvements assumed by Region C)
5	ES.13 - Table ES.3	Recommended WMS	No	-See notes on individual WMS
		Introduction		
6	1.1	General	Yes	
7	1.2 - Table 1.1	Population	Yes	
8	1.5 - Table 1.2	Major Reservoirs	Yes	
9	1.13 - Table 1.6	Supplies	Yes	
10	1.18	WWP	Yes	
11	1.19	2011 Water Sales	Yes	
12	1.20	Treatment Capacity	Yes	-IPP states that DWU has a treatment capacity of 900 MGD with another 100 MGD expansion (Eastside WTP) currently under construction -LRWSP states that DWU currently has 1,000 MGD of rated capacity and 910 MGD of reliable capacity (includes 100 MGD expansion of Eastside WTP) -LRWSP states that when high service pump station limitations are considered, the treated water delivery capacity is 850 MGD
13	1.22	Lake Palestine/UTRWD	Yes	
14	1.24	Lake Palestine	Yes	
15	1.25	2011 Plan	Yes	

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
16	1.29	Conservation	Yes	
17	1.49	Changes to Natural Flow	Yes	
Population and Demands				
18	2.20 - Table 2.20	Demands	No	-Differences in total demands occur in every decade but are less than 2% -These differences are a result to changes in the Region C demands after the September 12, 2014 date in which Dallas took demands from Region C for inclusion into the LRWSP.
Existing Supplies				
19	3.4 - Table 3.2	Surface Water Supplies	No	-See Comment No. 59
20	3.7	Indirect Reuse	No	-MSBR is not listed as a new indirect reuse project
21	3.14 - Table 3.8	Supplies to WWP	No	-See Comment No. 59
22	3.22	WUGs	Yes	
Needs				
23	4.5	WWP	Yes	
24	4.6 - Table 4.4	Decadal Need	No	-Differences occur and increase every decade with 2070 difference of 8.8 MGD more -Differences occur due to (1) changes in demands and return flows after Sep 12, 2014 when Dallas acquired final data from Region C, (2) the Region C inclusion of Fork/Tawakoni pipeline capacity limitation of 200 MGD, and (3) inclusion of direct reuse and White Rock Lake supplies
Selection of Water Management Strategies				
25	5A.2	Reservoir Sys Ops	Yes	
26	5A.4	Potentially Feasible WMS	Yes	
27	5A.10	Lake Columbia	Yes	
28	5A.10 - Table 5A.2	Potentially Feasible Reservoirs	Yes	
29	5A.11	Groundwater	No	-Text suggests that Sabine Conjunctive Use strategy will import 102,930 acft/yr of groundwater but total project yield is 104,200 acft/yr with only 15,666 acft/yr on average coming from groundwater
30	5A.11	Interbasin Transfers	No	-Neches Run-of-River strategy not included as WMS needing IBT

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
31	5A.12 - Table 5A.3	Interbasin Transfers	No	-Lake Palestine max amount should be 114,337 acft/yr and Neches RoR should be 47,250 acft/yr
32	5A.16 - Table 5A.4	Potentially Feasible WMS	No	-Not sure where 149,093 acft/yr max supply for MSPS came from -Lake Palestine max supply should be 114,337 acft/yr -Neches Run-of-River max supply should be 47,250 acft/yr and is listed twice
		Evaluation of Water Management Strategies		
33	5B.2 - Table 5B.1	Potentially Feasible WMS	No	-See Comment No. 32 -Note: Neches Run-of-River is correct in this table.
34	5B.5 - Table 5B.2	Summary of WMS	No	-See comments for individual WMS
35	5B.7	Toledo Bend	Yes	
36	5B.8	Sulphur Basin	Yes	
37	5B.10	Sulphur Basin	No	-Capital costs for DWU are estimated at $3 billion.
38	5B.12	Lake Texoma	Yes	
39	5B.13	IPL	Yes	
40	5B.14	Lake Palestine	No	-Inconsistencies with yield and cost
41	5B.14	Neches Run-of-River	No	-WMS does not include conjunctive use with groundwater or tributary storage
42	5B.16	Groundwater	Yes	
43	5B.16	MSPS	Yes	
44	5B.18	Lake Columbia	No	-Inconsistencies with cost
45	5B.19 - Table 5B.3	Recommended WMS	No	-Inconsistencies with yield and cost
		Population and Demands		
46	5C.1	WWP	Yes	
47	5C.3	Sulphur Basin Supply	Yes	
48	5C.5	Toledo Bend	Yes	
49	5C.5	Demands	No	-Inconsistencies with future supplies and demands
50	5C.6	General	Yes	

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
51	5C.7	Conservation	No	-Differences in projections occur due to changes in demands and return flows after Sep 12, 2014 when Dallas acquired final data from Region C and LRSWP uses methodology from Dallas Strategic Plan.
52	5C.7	MSPS	Yes	
53	5C.9	MSBR	Yes	
54	5C.9	Lake Palestine	No	-Differences in yield are due to Region C not including 2007 return flows in yield calculations
55	5C.9	Lake Palestine Connection	Yes	
56	5C.10	Neches Run-of-River	No	-WMS does not include conjunctive use with groundwater or tributary storage
57	5C.10	Lake Columbia	Yes	
58	5C.11	Infrastructure to Treat & Deliver	Yes	
59	5C.12 - Table 5C.1	Summary of Existing Supplies, Demands, & Recommended WMS	No	-Demands changed by Region C after inclusion in LRWSP and presentation to Council -Return flows changed by Region C after inclusion in LRWSP and presentation to Council-Region C includes Fork/Tawakoni Pipeline 200 MGD capacity restraint on existing supplies -Region C includes Direct Reuse and White Rock Lake irrigation as existing supplies -Yields of reservoirs are less because Region C does not include 2007 return flows in calculations (includes Lake Palestine) -Region C does not include actual operations of Lake Grapevine. This operational flexibility is included in the LRWSP. -These factors result in inconsistencies in estimated needs -LRWSP uses a slightly different methodology to determine the additional conservation savings for Dallas to be more in line with the strategic conservation plan. -Region C assumes full 31 MGD of return flows are available to MSPS in 2020
60	5C.14 - Table 5C.2	Summary of Costs for Recommended WMS	No	-See comments on individual strategies (Comments 74-129) -Conservation (retail) supply shown is 42,607 acft/yr which is the 2060 values...not sure why 2060 value is shown in table
61	5C.14 - Table 5C.3	Summary of Costs for Alternative WMS	No	-See comments on individual strategies (Comments 74-129)
62	5C.15	IPL	Yes	
63	5C.16	IPL	Yes	
64	5C.36	Steam-Electric Demand	Yes	
65	5C.41	UTRWD Purchased Water	Yes	

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
66	5C.43	UTRWD Purchased Water	Yes	
67	5C.44	UTRWD & Red River OCR	Yes	
68	5C.45	UTRWD Purchased Water	Yes	
69	5C.57	UNRMWA - Lake Palestine	Yes	
70	5C.69 - Table 5C.36	Denton Demands/Supply	No	-These changes occurred to the Region C demands after the September 12, 2014 date which is the date Dallas took demands from Region C for inclusion into the LRWSP.
71	5C.80 - Table 5C.49	Grand Prairie Demands/Supply	No	-These changes occurred to the Region C demands after the September 12, 2014 date which is the date Dallas took demands from Region C for inclusion into the LRWSP
72	5C.91	Rockett SUD Alt Strategy	Yes	
73	5C.94	Seagonville	Yes	
Conservation				
74	P.3-4 Table Q-10	Supply	No	-Region C shows a conservation supply of 1.4 MGD to 3.4 MGD greater than the LRWSP throughout the 2020-2070 planning horizon
75		Costs	No	-Region C shows a capital cost of $3.1 million and LRWSP has a cost of $38 million (LRWSP cost estimate uses a slightly different methodology and is based on the Dallas Strategic Conservation Plan)
76		Characteristics	No	-LRWSP uses a slightly different methodology to determine the additional conservation savings for Dallas to be more in line with the strategic conservation plan.
77		Environmental Factors	Yes	
Main Stem Pump Station (MSPS)				
78	P.54-55 Table Q-34	Supply	Yes	-Region C assumes full 31 MGD of return flows are available to MSPS in 2020
79		Costs	No	-Total capital costs and Dallas' portion are significantly higher.
80		Characteristics	Yes	
81		Environmental Factors	Yes	
Main Stem Balancing Reservoir (MSBR)				
82	Table Q-35	Supply	Yes	
83		Costs	Yes	
84		Characteristics	No	-Region C specific strategy write-up not included in IPP; only LRWSP write-up

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
85		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
IPL - Lake Palestine Connection				
86	P.80-82 Table Q-36	Supply	No	-Region C assumes 111,776 acft/yr of supply while LRWSP assumes 114,337 acft/yr
87		Costs	No	-Two identical cost summaries are presented (Q-36 & Q-48), not sure why -Total cost is ~$51 million less -IPP includes cost of pipeline connection from IPL to Bachman WTP (Segment H) in both Lake Palestine connection costs and Bachman connection costs
88		Characteristics	Yes	
89		Environmental Factors	Yes	
IPL - Bachman WTP Connection				
90	Table Q-37 & Q-40	Supply	Yes	-Note that even though Palestine supply is 111,776 acft/yr in IPP, the supply to Bachman is 114,342 acft/yr in IPP
91		Costs	Yes	
92		Characteristics	Yes	
93		Environmental Factors	Yes	
Neches Run of River				
94	P.61-65 Table Q-38	Supply	Yes	
95		Costs	Yes	
96		Characteristics	No	-Write-up shows Sept 2011 costs, should be Sept 2013 costs. -Write-up states that one or more OCRs would be included in strategy, this is incorrect -Write-up states that diversion could be operated conjunctively with groundwater, this is incorrect -Supply is incorrectly stated in description section of write-up (40 MGD or 44,840 acft/yr)
97		Environmental Factors	No	-Environmental considerations for the Nueces OCR are incorrectly shown as the considerations for the Neches Run-of-River strategy -Table in water management strategy evaluation section incorrectly shows several environmental factors and impacts to Ag, natural resources, and other strategies as medium or h gh, these should all be low (probably taken from Nueces OCR strategy)
Lake Columbia				
98	P.29-35	Supply	Yes	

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
99	Table Q-39	Costs	No	-Total costs is ~$63 million higher because Region C assumes a parallel pipeline to IPL to transport supplies instead of using extra capacity in IPL
100		Characteristics	No	- Region C assumes a parallel pipeline to IPL to transport supplies instead of using extra capacity in IPL
101		Environmental Factors	Yes	
Direct Reuse				
102	Table Q-41	Supply	No	-Region C shows a supply of 2,242 acft/yr and LRWSP shows a supply of 2,501 acft/yr
103		Costs	No	-Costs are significantly higher when compared to LRWSP for the Cedar Crest and White Rock Alternative projects -McCommas Bluff project is not included in the LRWSP
104		Characteristics	No	-Region C includes the McCommas Bluff project while the LRWSP does not -Insufficient detail is included in the IPP to document differences in reuse projects between the IPP and LRWSP
105		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
Carrizo-Wilcox Groundwater				
106	Table Q-42	Supply	Yes	
107		Costs	Yes	
108		Characteristics	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
109		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
Conjunctive Use				
110	Table Q-43	Supply	Yes	
111		Costs	Yes	
112		Characteristics	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
113		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
Red River OCR				
114	Table Q-43	Supply	Yes	
115		Costs	Yes	
116		Characteristics	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
117		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up

Comment Number	Region C IPP Page/Table	Subject	Consistent with LRWSP	Notes
Sulphur Basin Supplies				
118	P.69-75 Table Q-17	Supply	Yes	
119		Costs	No	-Region C estimate of total cost is ~$2 billion greater than LRWSP -Region C assumes Dallas ownership of 82.1 % of an alternate configuration (DWU partner with Irving) instead of 23.9% of recommended configuration (DWU partner with TRWD, NTMWD, UTRWD, Irving & SRBA)
120		Characteristics	No	-See previous note about alternate configuration
121		Environmental Factors	Yes	
Toledo Bend				
122	Table Q-45	Supply	Yes	
123		Costs	Yes	
124		Characteristics	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
125		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
Lake Texoma Desal				
126	Table Q-46	Supply	Yes	
127		Costs	Yes	
128		Characteristics	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up
129		Environmental Factors	No	- Region C specific strategy write-up not included in IPP; only LRWSP write-up

dallas water utilities
city of dallas

September 1, 2015

Amy D. Kaarlela, P.H.
Region C Project Manager
Freese and Nichols, Inc.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109

Re: Clarification of Sulphur Basin Supplies Alternate Water Supply Recommendation

Dear Ms. Kaarlela

In a letter dated January 22, 2015, Denis Qualls, Dallas Water Utilities' Senior Program Manager for Planning, provided a letter to the Region C Water Planning Group that identified Dallas' recommended water management strategies, alternate supply recommendations and infrastructure recommendations adopted by the Dallas City Council on October 8, 2014.

The adopted alternate supply recommendations include Marvin Nichols at elevation 296.5 feet m.s.l. and Wright Patman at elevation 232.5 feet m.s.l. also referred to as the Sulphur Basin Supplies. At the time of the adoption of Dallas' strategies, the Joint Committee on Project Development (JPCD) had identified and was considering this reservoir combination and associated elevations.

Since the Dallas City Council adopted its recommended water management strategies and alternate strategies recommendations the JPCD identified errors in the yield calculations of the Marvin Nichols and Wright Patman strategy and have made revisions to the strategy currently being considered. The JPCD's strategy currently being considered is Marvin Nichols at elevation 313.5 feet m.s.l. and the reallocation and pool raise of Wright Patman to 232.5 feet m.s.l.

Dallas Water Utilities concurs with the JPCD's current elevations of 313.5 feet m.s.l. for Marvin Nichols and 232.5 feet m.s.l. for Wright Patman. I also anticipate as the Sulphur River Basin water management strategy moves forward the currently identified elevations will be refined further to meet the future water supply needs of the JPCD members.

Sincerely,

9/1/15

Jo M. (Jody) Puckett, P.E.
Director, Dallas Water Utilities

cc: Kevin Ward, Region C Administrator (TRA)
John Jarvis, Sulphur River Basin Authority
Denis Qualls, Dallas Water Utilities

Our Vision: To be an efficient provider of superior water and wastewater service and a leader in the water industry.

1500 Marilla, 4AN, Dallas, Texas 75201
Telephone: (214) 670-3146 • Fax: (214) 670-3154

FORT WORTH®

August 20, 2015

Ms. Amy D. Kaarlela, P.H.
4055 International Plaza, Ste. 200
Fort Worth, Texas 76109-4895

RE: Comment on 2016 Initially Prepared Region C Water Plan

Dear Ms. Kaarlela,

I am writing to you on behalf of the City of Fort Worth to provide you with a comment on the Comment on 2016 Initially Prepared Region C Water Plan. Currently the plan shows a conservation strategy for water loss control with a capital cost of $4,176,043. We would like to amend the amount of that capital cost shown in the Plan to reflect updated information as outlined below.

Recently the City of Fort Worth's Water Department has undertaken and completed Phase 1 of a Water Conservation and Condition Assessment Program, or WCCAP. WCCAP is a comprehensive assessment of our water distribution system for the purpose of identifying water lines that are significant sources of water loss. Historical line break information was carefully cataloged and assessed along with a number of other criteria (pipe material, age, failure rate of material, etc) to determine which water lines were most critical, generally speaking those that have had 5 or more breaks in the last 5 years. Through this assessment, the City has identified $137 million in capital cost over the next 10 years for replacement of water lines which it deems to be significant sources of water loss. In addition to the $137 million, there will be approximately $25 million of associated Program Management and other ancillary costs that are critical to the installation of these water lines.

In total, we would like to request that Region C adjust the $4,176,043 currently in the 2016 Initially Prepared Region C Water Plan (IPP) to be $162,000,000. Please note that this is separate from the $76 million associated with Fort Worth's AMI program, which is already in the IPP (cost estimate Q-209). We would be happy to provide any backup information as necessary to include in the final 2016 Region C Plan.

Sincerely,

Kara Shuror
Assistant Director

Fort Worth
All-America City
1964 • 1993 • 2011

WATER DEPARTMENT
ADMINISTRATION
THE CITY OF FORT WORTH ★ 1000 THROCKMORTON STREET ★ FORT WORTH, TEXAS 76102
817-392-8240 ★ FAX 817-392-8195

Printed on recycled paper

Region C Public Hearing Public Comments the 2016 draft water plan.
We only have this opportunity every 5 years to comment on the water plan that with affect us for the next 50 years.

June 24, 2015
Bob Duncan Center
2800 South Center Street
Arlington, Texas

Submitted by
Rachel Baker Ford, editor
Garland Democratic Voice LLC
Residence:
3317 Knights Haven Lane
Garland, Texas 75044
972-530-6484
MultiSMus@aol.com

Contents:

Attention: Full copies of both editions are available on our website:
www.garlanddemocraticvoice.com

GARLAND DEMOCRATIC VOICE

NEWS AND INFORMATION FOR GARLAND AREA DEMOCRATS

May 22, 2014 | Garland, Texas | Edition 56

Effects of Not Voting or Voting for the GOP

√No Jobs
√Higher Taxation of the Middle and Lower Class
√End of Taxation for the Wealthy
√End of Social Security
√End of Medicare
√End of Medicade
√End Affordable Care Act
End of Civil Rights
√Stricter Voter I.D. Laws
√Skewed Supreme Court
√End of Clean Water
√End of Clean Air
√End of Livable Environment
√End of National Parks
√End of the Post Office
√End of Public Schools
√End of Unions
√More War
√Increased Military Spending
√Increase of the Debt
√Default on the Existing Debt
(To name a few)

Effects of Voting for the Democrats

√ 9.2 Million Jobs Added in the Past 50 months
√ Equal Pay for Equal Work (Ledbetter Act)
√ Repealed "Don't Ask, Don't Tell."
√ Saved the Auto Industry
√ Higher taxes for Wealthy
√ Affordable Care Act Works!
√ Wall Street Reformed
√ National Deficit Reduced by $1 trillion
√ Social Security and Medicare protected
√ Peaceful conflict resolution.
√ Ended 2 wars
√ Support for Alternative Energy
√Credit Card Reforms
√Increased Mileage Requirements
√Fair Sentencing Act
(To name a few)

ATTACHED

Contents:

Produced and published in-house by Rachel Baker Ford, 3317 Knights Haven Lane, Garland, Texas 75044

2016 Region C Water Plan

GARLAND DEMOCRATIC VOICE
EDITORIAL

"I Rise in Opposition to the Marvin Nichols Reservoir."

On Thursday of last week, I was at a public hearing held by the Texas Water Development Board (TWDB) regarding the building of the Marvin Nichols Reservoir in Red River County. Dallas (Region C) is demanding the reservoir be part of their water plan to supply Dallas with more water. Red River County (Region D) is fighting this land grab of more than 70,000 acres of prime Texas farmland, ranches, and timberland. In a lawsuit brought by landowners and other interested parties in the Sulphur River Basin, a District Court and the 11th Circuit Court of Appeals ruling requires the TWDB to resolve the conflict between the two water planning entities (Regions C and D). Although Texas state law requires that water resources, natural resources, and agricultural resources of a region be protected, the TWDB is in violation of the "bottom up" water planning process by attempting to force Region D to accept the Marvin Nichols project because it will be damaging to the region's (D) economy and residents. The least of which is a 10 to 20 percent loss of jobs in the region. www.texas.sierraclub.org/Water/marvin_nichols_1.html

Dallas does very little to conservate water, using 40 percent of total water usage is for landscaping — lawns, parks, golf courses and parks, to name a few. I am reminded of the article in *The Dallas Morning News* where a landowner declared [ed. because he could afford it] he spent more than $5,000 to water his lawn. While researching cost analysis of cost-to water usage, **VOICE** scientific writer, Chuck Ford discovered the more gallons of water used, the price-per-gallon decreases. Stated simply, if one uses more water it costs less. www.ci.garland.tx.us/gov/rz/utilities/water/ At least, the Dallas City Council stopped water-pig fracking, for the time being.

"I rise in opposition to the Marvin Nichols Reservoir." My main point was we are doing very little to conserve water in Dallas County (Region C). There is no reason to bully the folks in Region D, stealing their homesteads, livelihoods, destroying the habitats of wildlife, like the black bear when we have no plan to preserve, protect and extend current water supplies. The second point is the destruction of 70,000 acres of Texas farm, ranch and timberland resulting in the loss of employment. If the residents refuse the state buyout, their homesteads, many in families for generations, will be taken by eminent domain. The oxymoron here is, though the project is completely within Texas, the benefits to Texans harm those of Region D and benefit the "fat-cats" of Dallas.

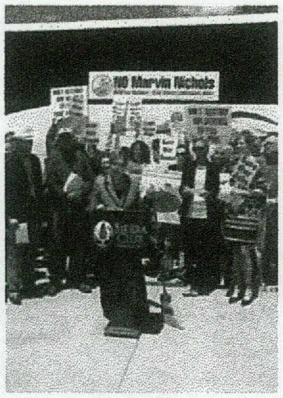
In the course of the afternoon, I listened to all of the speakers. The only speakers in favor of the project were members of the Dallas Region C committee. Opposition came from speakers primarily from Region D and environmental activists. There were stories of homesteads that had been in families for generations, school officials relating the loss of revenue, school properties and student displacement, and business folks, decrying the loss of prime timberland. The Sierra Club speakers told of the $3.4 billion cost borne by taxpayers and other options beyond recycling, reuse, and conservation to get more water including addition water allocated from the existing Wright Patman Lake and Toledo Bend. http://texaslivingwaters.org/state-and-regional-water-plan/case-study-proposed-marvin-nichols-reservoir/

On the drive home from Arlington, where the hearing was held, it crossed my mind how similar were the statements of the East Texans to what I have heard in my travels protesting the Keystone XXL. Further reflection led me to the fact that many of these folks are indigenous members of the Republican -Tea Party persuasion. Unfortunately, they are the victims of the Republican-big business money steamroller. "Don't Tread on Me" rings hollow in Region C.

— Rachel Baker Ford, editor

MAY 22, 2014 **GARLAND, TEXAS** **EDITION 56, PAGE 2**

Marvin Nichols Reservoir Hearing

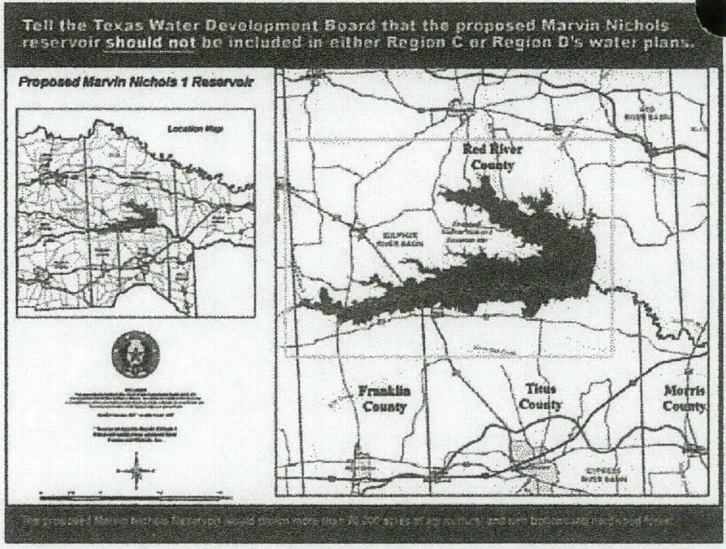


Rita Bevin

On April 30, 2014, a public hearing with Regions C and D on the preliminary recommendation was held at the Bob Duncan Center, 2800 South Center Street, Arlington, Texas, 76014.

— *Rita Bevin*

The building of Marvin Nichols will mean eminent domain and takings proceedings against many ranchers, timber men and will destroy valuable forest land, Indian artifacts, and historical sites. For more than 13 years, the Sierra Club, National Wildlife Federation, the Texas Conservation Alliance, and many private citizens have stood in opposition to the proposed Marvin Nichols reservoir.



Why do we oppose Marvin Nichols?

1. The DFW area continues to use/waste more water per person than any city/region in the state.

2. While San Antonio diminished it's water use by 30 percent in 13 years (42 percent in two decades) with an exploding population, Region C (DFW) has NOT done enough in common sense solutions like fixing the leaky infrastructure devising meaningful reuse/recycling measures with water to justify this reservoir and the devastation it means for our East Texas neighbors.

3. Region C has other options beyond recycling/reuse/ conservation to get more water including more water allocated from the existing Wright Patman Lake and Toledo Bend — instead of spending $3.4 billion on the backs of taxpayers for a new reservoir.

4. Region C used inflated population numbers to justify the reservoir and the taking of more than 72,000 acres of rich farmland and bottomland hardwood forest. *The Dallas Morning News* published an article recently about DFW's slowing population growth.

5. The reservoir footprint is on a fault line. Studies by the University of Texas and the University of Oklahoma have proven the relationship of deep-injection wells used in fracking to earthquakes and fault activity.

School Board Trustee

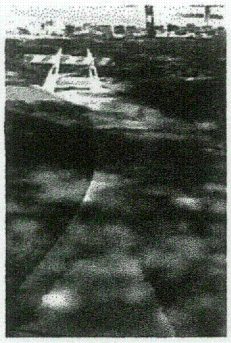
East Texan Homesteaders

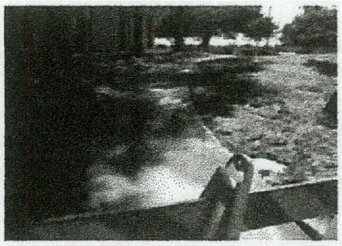
East Texas Homesteader

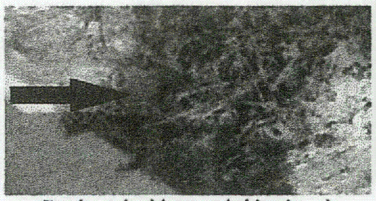
Dallas Residents say, "No Marvin Nichols Reservoir!"

At the Bob Duncan Center Arlington, Texas

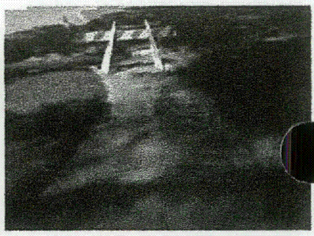
Case in point: When I returned to my car, I discovered the reason for the barricade.







Broken, leaking sprinkler head



GARLAND DEMOCRATIC VOICE

NEWS AND INFORMATION FOR NORTH TEXAS DEMOCRATS

January 25, 2015 | Garland, Texas | Edition 1, Volume 2

We Can! We Are!

The State of the Union Address

The U.S. is healing. The economy is improving, more people are finding jobs, more children are graduating from high school, and we are less dependent on foreign oil. Alternative energy is gaining traction. The deficit is cut by two-thirds, the stock market has doubled, and health care inflation at its lowest rate in 50 years. Wages are starting to rise again.

The President believes in a smarter kind of American leadership combining military power with strong diplomacy. Instead of sending large ground forces overseas, we're partnering with nations from to deny safe haven to terrorists who threaten America.

We defend free speech, condemn persecution of humans. We do these things because they are the right thing to do. Ultimately they will make us safer.

Our greatest challenge and greatest threat to future generations is climate change. The best scientists in the world are telling us our activities are changing the climate. The U.S will double the pace at which we will cut carbon pollution. China has committed to limit their emissions.

Our actions tell every child, in every neighborhood, your life matters; we are committed to improving your life. Future generations must know we are a people who see our differences as a great gift, that we're a people who value the dignity and worth of every citizen — man and woman, young and old.

***We are more than a collection of red states and blue states; there isn't a liberal America or a conservative America; a black America or a white America — but a United States of America.* — President Barack Obama, SOTU 2015**

What's Inside? ATTACHED

2016 Region C Water Plan

Published and printed in house at 3317 Knights Haven Lane, Garland, Texas 75044

V.147

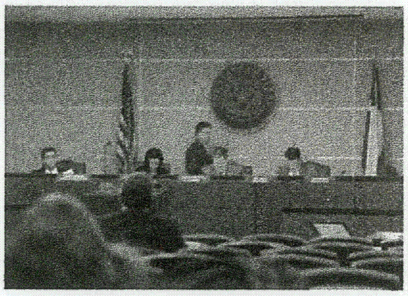
GARLAND DEMOCRATIC VOICE

ARTICLE

NO Marvin Nichols Reservoir!

NO MARVIN NICHOLS

TWDB votes on the Interregional Conflict between Region C and Region D



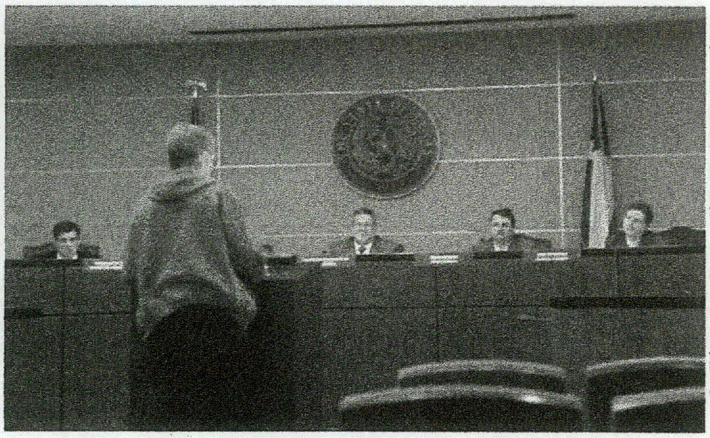
Press Release 01/08/15: Today, the Texas Water Development Board (TWDB) voted to resolve the Interregional Conflict between the 2011 Region C and Region D Regional Water Plans. Representatives from both Region C and Region D were given 10 minutes to address the Board prior to the vote. The Board then asked additional questions of both regions before voting on the conflict. In a 3-0 vote, the Board voted in favor of the Marvin Nichols Reservoir Project remaining in the Region C Regional Water Plan

Today's decision by the Board instructs Region C to retain Marvin Nichols reservoir as a recommended strategy in its 2011 Regional Water Plan. The quantitative analysis requested by the Board has been received and reviewed by the Executive Administrator, who finds that Region C has complied with the Board's interim order and current rules. The decision to build or not build the reservoir will ultimately be made by the project sponsor and various federal and state permitting agencies, including the U.S. Army Corps of Engineers and the Texas Commission on Environmental Quality. http://www.twdb.texas.gov/newsmedia/press_releases/2015/01/regionc_regiond.asp

Why Oppose the Reservoir?

Region C has one of the highest rates of water use per person in the state. Approximately 40 percent of the water used by Region C is used for lawn watering. http://www.nomarvinnichols.com/index.html

Residents whose land will be taken.



Charleen Granberry: The Family has owned and operated their property to be taken by the Nichols Reservoir for five (5) generations. Their primary product is hardwood timber. "We must plant a tree today which can be harvested in thirty (30) years." The rest of her statement revealed they couldn't sell the property because it is under the cloud of the reservoir planning.

Rachel Baker Ford

RBF: I stand in opposition to The Marvin Nichols Reservoir. I live in Region C, Garland, located in Dallas County. Dallas County has one of the highest rates of water use per person in the state. Recently one resident stated in *The Dallas Morning News* that he spent $5,000 a month to water his lawn — *okay, because he can afford it.* I am opposed because it would consume more than 75,000 acres of prime Texas agriculture and hardwood timberland. ... destroy the economic base of the area ... for the loss of homesteads ... and so much more. Region C is full of water hogs. Conservation, except for a very small segment of the population is non-existent.

Further information : http://garlanddemocraticvoice.com/May_2014_3.jpg

SIERRA CLUB
FOUNDED 1892
Lone Star Chapter

P. O. Box 1931
Austin, TX 78767
lonestar.chapter@gmail.com
www.sierraclub.org/texas

Comments of the Lone Star Chapter of the Sierra Club on the 2016 Region C Initially Prepared Plan (IPP) – Prepared and Submitted Electronically on August 23, 2015 by Chapter Water Resources Chair Ken Kramer

The Lone Star Chapter of the Sierra Club appreciates the opportunity to comment on the 2016 Region C Initially Prepared Plan (IPP), hereafter referred as the 2016 Draft Plan. We also appreciate the information provided to us by the Region C leadership and consultants at various stages of the development of the 2016 Draft Plan during this most recent round of regional water planning. In order to focus on a few key topics regarding the latest regional water plan revision, our comments on the 2016 Draft Plan will address the following:

- Calculation of Water Demands, Available Water Supplies, and Water "Needs"
- Water Conservation as a Water Management Strategy
- Water Management Strategies Involving New Surface Water Reservoirs
- Alternative Water Management Strategies Involving Infrastructure
- Drought Management/Response

There are many other important subjects and issues covered in the 2016 Draft Plan, but we believe the topics noted above and how those issues are dealt with by Region C are the most critical to finalizing a regional water plan that strikes a balance between development and conservation of water resources and that meets the true water needs of Region C without adversely affecting neighboring regions and their residents.

Calculation of Water Demands, Available Water Supplies, and Water "Needs"

At the core of each regional water plan are several important factors that determine the water "needs" of each municipal water user group (WUG): projected population numbers, per capita water consumption, subsequent estimated water demands calculated from those population and water consumption figures, and determination of available water supplies to meet those demands. If "available water supplies" do not meet those projected water demands, a water "need" reflecting that deficit is declared to exist. How these factors are determined or calculated obviously affect whether and to what extent municipal water "needs" exist. These are major issues especially in Region C, where almost 90% of current water use is for municipal supply, and that percentage is not expected to change over the 50-year planning horizon.

We have been critical of past versions of the Region C water plan for what we have felt to be over estimates of future water demands, in part due to underestimates of how per capita water use was likely to decrease over time for a variety of reasons and of how the experiences with droughts shape people's behavior in terms of water use. We believe that our perspective has been confirmed by the track record of reduced per capita water consumption in Region C over the past several years, even without universal implementation of recommended water conservation strategies, and by the lower per capita dry-year water use experienced in the region in 2011, much lower than the comparable dry-year figure used as the base water use for the 2011 Region C Plan prepared in 2006-2010.

The 2016 Draft Plan uses a total municipal GPCD of 165 as the base dry-year water use. The 2011 Region C Plan was based on a total municipal GPCD of 200. As a result of that lower GPCD, and some reductions in certain population projections, the estimated water demands in Region C in 2060 are almost 600,000 acre-feet per year less in the 2016 Draft Plan than they were in the 2011 Plan. We view this estimate as a more realistic projection of demand for the region and appreciate the progress that has been made in that regard.

However, we remain concerned that even the 2016 Draft Plan may over-estimate water demands for the duration of the 50-year planning cycle. We note that the Region C consultants in 2013 disagreed with the determination by the Texas Water Development Board (TWDB) staff that per capita water use in 2011 should be the base dry-year water use for the 2016 Region C Plan (and the other 15 regional water plans). The contention was that two earlier years (2006 and 2008) saw higher dry-year water use than 2011 and that the base ought to be calculated over a multi-year period. Region C thus requested authorization to use a different base GPCD. As noted in the 2016 Draft Plan TWDB did not accept the full request from Region C but did allow some changes to the 2011 base-year GPCD. The 2016 Draft Plan says that "73% of TWDB's recommended per capita values were retained." The Plan further states: "Even with the limited variance from the 2011 per capita water use, consultants for Region C still feel the demands for some Water User Groups adopted for this plan underestimate true dry-year needs."

We respectfully disagree with that assertion, just as we disagreed with the request from Region C in 2013 to use a different base-year GPCD than that recommended by the TWDB staff. We believe that 2011 water use should have been the base for all municipal water user groups in the 2016 Draft Plan. Even if in some circumstances there was a higher water use in one of the two earlier years (2006 and 2008) it is logical to assume that the behavior of water users in the later year – 2011 – is reflective of learned behavior from the experiences of the earlier dry years and ongoing conservation messaging. The efforts of several wholesale water providers in the region to coordinate drought response plans should continue to facilitate the responsible use of water by more and more customers during dry years. The long-term trend in Region C and in Texas in general seems to be toward reduced water use on a per capita basis, although there may be exceptions in certain areas, and a lower water use in Region C in 2011 than experienced in 2006 and 2008 would be expected.

However, even though the text of the 2016 Draft Plan leaves the impression that the Plan by and large reflects the TWDB staff's recommended base dry year GPCD from 2011, in reality the TWDB approved increases in the base dry year GPCD for some large cities in Region C. Here are examples:

- The 2011 GPCD for Dallas was 194, but TWDB approved the use of 207 GPCD for Dallas in the 2016 Draft Plan.
- The 2011 GPCD for Denton was 157, but TWDB approved the use of 171 for Denton in the Plan.
- The 2011 GPCD for Fort Worth was 166, but TWDB approved 185 GPCD for the Plan.
- The 2011 GPCD for Grand Prairie was 138, but TWDB approved 153 GPCD for the Plan.
- The 2011 GPCD for Irving was 158, but TWDB approved 202 GPCD for the Plan.

The bottom line is that <u>if the 2011 GPCD is more reflective of the actual base dry-year water use in these cities (and others for which adjustments were made) than what was approved by TWDB for use in the 2016 Draft Plan, then there is still the possibility that municipal water demands in the Region, especially by 2070, are over-estimated</u>.

The other major factor that determines whether there are water "needs" that must be met is whether there are "available" water supplies to meet those demands at different decades during the 50-year planning horizon. In some respects this is a fairly straightforward task, at least in Region C. Due to the heavy dependence by Region C upon existing surface water reservoirs located in and outside the region, the calculation of "available" water from those reservoirs is usually based on either the "firm yield" of each respective reservoir during a period as dry as the "drought of record" or the permitted amount of water that may be drawn from the reservoir, whichever is lower.

However, in the 2016 Draft Plan, Region C – at the request of the Planning Group – received approval from TWDB to use "safe yield" rather than "firm yield" to determine the amount of water <u>available</u> to be taken each year from reservoirs under the jurisdiction of Tarrant Regional Water District and Dallas Water Utilities. According to TWDB, "safe yield" is "the water that could have been supplied from a reservoir or reservoir system during a repeat of drought-of-record conditions, leaving one year's supply in reserve at the minimum content."

In other words, "safe yield" is a smaller amount of water than the "firm yield" figure that is usually employed to characterize the water available from a reservoir or reservoir system during a year as dry as the drought of record. As noted in the 2016 Draft Plan:

> "…the total available supplies (not considering infrastructure or permit constraints) in the 2016 Plan are lower than the supplies presented in the 2011 Plan. This is largely due to the lower availability from surface water because of the use of safe yields by some of the larger WWPs. However, this is partially offset by greater availability from reuse in later decades due to the development of new reuse projects." (Page 11.10, 2016 Region C IPP)

The reason enunciated by the Region C Planning Group for requesting the use of "safe yield" rather than "firm yield" for some major reservoirs and reservoir systems was that the wholesale water providers responsible for those water supplies "operate" them on that basis.

While that may be an appropriate operating principle, we do question whether for planning purposes some entities should be allowed to have their available supplies calculated on the basis of safe yield while other entities and regional water plans use firm yield for that determination. We also wonder why the 2016 Draft Plan makes this exception for certain wholesale water providers when previous Region C water plans did not. The upshot of the use of safe yield rather than firm yield for certain reservoirs and reservoir systems is a reduction of over 100,000 acre feet per year of available surface water supplies to meet demands in the region. Thus, the bottom line is that the estimated water "needs" for Region C are larger than they would otherwise be if firm yield was used consistently to calculate available supplies.

Of course, the total 2060 need in the 2016 Draft Plan (1.08 million acre-feet per year) is less than the need shown in the 2011 Region C Plan (1.588 million acre-feet per year) because of the decreased demands in the 2016 Plan and certain new water sources that have been brought on line since the previous Plan. However, there remains a concern that "needs" in the 2016 Draft Plan may be overstated as a result of a possible over-projection of water demands for certain WUGs and the use of safe yield rather than firm yield to quantify certain available surface supplies.

Water Conservation as a Water Management Strategy

Before going into some depth about water conservation in the 2016 Draft Plan we must first commend certain wholesale and retail water providers in Region C for the progress that they have made and are making in enhancing water conservation and efficiency in their jurisdictions and in the region as a whole. These include Dallas Water Utilities, the City of Fort Worth, North Texas Municipal Water District (NTMWD), and Tarrant Regional Water District (TRWD), among others. Their efforts, including public education campaigns such as the "Lawn Whisperer" are having an impact in reducing per capita water use in the region, which we believe is reflected in part in the lowered water demands in the 2016 Draft Plan. While we feel that the rate of progress could be higher, that much more needs to be done, and that the embracing of water conservation is by no means universal in the region, we respect the commitment of so many dedicated water utility professionals in Region C to further wise water use, and we applaud their accomplishments. We especially recognize and encourage the regional coordination on water conservation that the largest wholesale water providers in Region C have undertaken.

With regard specifically to the 2016 Draft Plan, however, we take issue with some of the water conservation claims in the Plan, and we believe there are several opportunities to enhance the conservation recommended in the Plan and the contribution of that water management strategy to addressing regional water demands. Concerning claims made about water conservation in the 2016

Draft Plan, we are confused by the statement on page 11.4 that "much of the conservation that was included as water management strategies in the 2011 plan has been achieved…." In the 2011 Plan there were two conservation "packages" included as recommended water management strategies: a "basic" set of water conservation measures recommended for over 200 municipal water user groups with water needs for the decade beginning 2010 and an "expanded" set of water conservation measures recommended for 69 municipal water user groups with water needs for the 2010 decade. But it is NOT clear how many of the municipal water user groups for which these strategies were recommended actually adopted or implemented them, or even have the intention of doing so. The Region C Water Planning Group provided to the state Water Conservation Advisory Council the results of survey in 2013 sent to these municipal water user groups to ascertain the extent to which the conservation strategies recommended in the 2011 Plan were pursued. According to the 2014 report of the Council:

> "The response to the survey was minimal with only about 120 water user groups returning the survey; many of the responses were incomplete."
>
> "About 45 water user groups responding indicated that they had implemented 'public and school education' (one of the measures in the basic set of water conservation practices) as a water conservation strategy in the past and/or were doing so currently. An additional 11 municipal water user groups who had not used public and school education as a conservation strategy in the past and/or were not doing so currently indicated that they planned to do so in the future. Half of the responding water user groups indicated that they had in the past or currently were using water audits and leak detection and repair, another part of the basic package, as a water conservation strategy. Slightly less than half of the respondents said that they had used a water conservation pricing structure as a conservation strategy in the past, were doing so now, and/or planned to do so in the future. Responses to questions about implementation of other 'basic' conservation practices fell within the same pattern – either the respondents were not taking the time to respond or these practices have not [been] widely implemented."

The response of water user groups for whom the expanded conservation package was recommended was also disheartening. Less than half of them responded to the survey, and only thirteen of them affirmatively indicated that they had implemented or would in the future implement even one of the measures in the expanded package recommended to meet current water needs.

Table 5E.6 – "Water Conservation Response Data from Water Retailers" – on Page 5E.25 in the 2016 Draft Plan, which is based on the survey responses, confirms the dismal implementation rate of the water conservation measures recommended in the 2011 Region C Plan. Granted that some water user groups may have implemented water conservation practices but may not have taken the time to respond to the survey, how does this constitute verification that "much of the conservation that was included as water management strategies in the 2011 plan has been achieved…."?

Another questionable assertion made in the 2016 Draft Plan is found on Page 5E.31: "For WUGs that are projected to receive water in the future from a new interbasin transfer, the water savings associated with the recommended municipal and non-municipal water conservation strategies represent the highest practicable level of water conservation and efficiency achievable in the region." This is an assertion without verification. At the very least specific information must be provided to back up this claim. However, we are aware of conservation practices that are not yet being followed by municipal water user groups in the region that would result in higher levels of conservation and efficiency, so we do not see how this assertion may be validated at this time. Certainly per capita water consumption figures, while reduced from previous levels, are not as low as they could go.

In the 2016 Draft Plan the recommended Water Conservation Package has been modified to be one rather than two packages and is suggested for all municipal water user groups. We agree with the recommendation that this set of conservation measures be adopted by all such WUGs. However, we believe that at least one "ready for prime time" conservation measure that should be included in the package has been left out and should be put into this suite of conservation practices. Several municipal entities in Region C – for example, the Cities of Dallas, Fort Worth, and Irving, among others – have adopted limitations on outdoor landscape watering (limits on number of days on which watering may occur, not just time-of-day restrictions) as an ongoing conservation measure rather than just as a component of their drought contingency plans. Most commonly in Region C this has been a limitation on outdoor landscape watering with sprinklers to no more than twice a week for the hotter months of the year, or even all year, and perhaps no more than once a week during the cooler months of the year. The benefits and advisability of such an approach is discussed in detail in the joint National Wildlife Federation/Sierra Club report *Water Conservation by the Yard*, recently in the spring of 2015 and available on the website of the Texas Living Waters Project at: http://texaslivingwaters.org/wp-content/uploads/2015/03/SC_WaterConservByYard_report_031115_R.pdf. Sierra Club recommends that this conservation measure be included in the Water Conservation Package for municipal water user groups in Region C and that the 2016 Draft Plan reflect the volume of water demands that may be reduced through this strategy.

In addition we suggest that the 2016 Region Plan separate water loss control from the Water Conservation Package and make it a separate recommendation under the general category of municipal water conservation, with a specific performance goal for municipal water users with high levels of water loss in their utility systems. For example, Region H has proposed a specific water conservation measure termed "water loss control" and has put into the 2016 Region H IPP the target of a one-percent annual reduction in actual water loss for each municipal water user group with an actual loss rate of 10% or more, with the annual reduction to proceed until the 10% loss rate is reached or bettered. Region C has a high water loss average for its municipal water utilities, and since some very large water utilities in the region are losing high volumes of water in their systems (Dallas, for example, had a 15.8% water loss according to its 2013 water loss audit, although it had made progress in reducing water loss). Therefore, pursuing a water loss control strategy throughout Region C could be very important in addressing water needs.

There are also new options for bolstering water conservation and reuse among commercial and industrial users that should be included as recommended strategies, if not in the final 2016 Region C Plan then certainly in the next revision of the Plan. Among those strategies which merit examination is the use of PACE (Property Assessed Clean Energy) by local governments to help owners of commercial or industrial properties obtain low-cost, long term loans for water conservation measures (and/or for energy efficiency improvements and renewable energy retrofits) that may be repaid through property tax assessments. That way the cost of doing water conservation is spread over a period of time, commensurate with the benefits achieved over the long term by undertaking those conservation measures. The authorization to local governments in Texas to create PACE programs for the commercial and industrial enterprises in their communities was granted by the passage of SB 385 by the Texas Legislature in 2013. The City of Austin is the first local government in Texas to create a PACE program. More information about PACE may be found at this website: http://www.keepingpaceintexas.org/.

Another possible water conservation/water re-use option for consideration in the Region C Plan should be the expanded use of graywater systems and other "alternate on-site water" sources. Graywater has been defined in the Texas Water Code as "wastewater from clothes-washing machines, showers, bathtubs, hand-washing lavatories, and sinks that are not used for disposal of hazardous or toxic ingredients." Graywater use has been slowly increasing in Texas but primarily for lawn, garden, and golf course irrigation.

A bill enacted into law in the 2015 session of the Texas Legislature – HB 1902 – expands the potential use of graywater by requiring TCEQ to adopt new standards for both indoor and outdoor use of this source, including for toilet and urinal flushing. Further the legislation requires TCEQ to adopt new standards for "alternate on-site water" – defined as "rainwater, air-conditioner condensate, foundation drain water, storm water, cooling tower blowdown, swimming pool backwash and drain water, reverse osmosis reject water, or any other source of water considered appropriate by" TCEQ. Rule-making to implement HB 1902 will be underway in the fall of 2015. Once the rules are adopted there will be an opportunity for regional water planning groups such as Region C to evaluate whether the revised rules will facilitate the use of graywater and alternate on-site water sources and thus whether the regional water plan should recommend that municipal water suppliers promote the use of these water sources, especially in commercial and industrial sectors.

Again, the Sierra Club appreciates the progress that has been made and is being made in Region C on water conservation and efficiency, but there is more to be done, and further progress will help to avoid or delay costly and controversial water infrastructure projects.

Water Management Strategies Involving New Surface Water Reservoirs

Among those costly and controversial water infrastructure projects are the proposed Marvin Nichols Reservoir in Northeast Texas (included in the 2016 Draft Plan as an alternative water management strategy) and the recommended strategy that would envision a smaller Marvin Nichols Reservoir as part of a larger "Sulphur Basin Supplies" strategy involving reallocation of water in the Wright Patman Reservoir and other components. We have stated our objection to the Marvin Nichols Reservoir on many previous occasions and will not belabor that point here except to say that Region C is wasting time, effort, and resources to continue to propose a project as financially costly, socially disruptive, environmentally questionable, and controversial as this reservoir, as well as certain other reservoir projects, at a time when more and more people – not just environmentalists but engineers, public officials, legislators, and others – are stating flatly that, at best, only a handful of new on-channel surface water reservoirs will ever be built in Texas in the future. The evaporation of water from surface water reservoirs (even in East Texas, although less than in Central or West Texas), their vulnerability during drought conditions if rainfall and runoff do not occur in the right locations, and the eventual problems with sedimentation, among other factors, make continued reliance on these types of water projects for future water supplies unadvisable – even if they ever can be built over growing local opposition in the area proposed for inundation.

Alternative Water Management Strategies Involving Infrastructure

The Sierra Club believes that where there are valid additional water infrastructure needs in Region C, alternatives to new surface water supplies need to be considered and pursued. One of those options is Aquifer Storage & Recovery (ASR). As discussed in an interim report by the Natural Resources Committee of the Texas House of Representatives issued in January 2015, "ASR is the injection of water supplies into aquifer formations that have the ability to store water until such time that it is needed to meet peak needs, long-term growth, or emergency conditions." TWDB earlier this year issued a Technical Note on "Aquifer Storage and Recovery in Texas: 2015" reviewing some studies of ASR possibilities in various parts of Texas. The Technical Note is accessible on the web at: http://www.twdb.texas.gov/publications/reports/technical_notes/doc/TechnicalNote15-04.pdf. It does not include reference to any such studies in North Central Texas, but our understanding is that at least the Tarrant Regional Water District in Region C is interested in this option.

The Texas Legislature this spring enacted HB 655, a bill intended to streamline the review and permitting of ASR projects in the state. San Antonio Water System (SAWS), the City of Kerrville, and El Paso Water Utilities, of course, have different but successful ASR projects tailored to regional water sources and needs. The Sierra Club a decade ago published a report with recommendations for the Region L (South Central Texas) Water Planning Group that included a proposal for an expanded SAWS ASR project. ASR as an option enjoys diverse support, although it is certainly not an option available or advisable in all circumstances and requires considerable research to make sure that aquifer formations and conditions are favorable toward use of ASR. However, it does not appear that ASR has received much attention from the Region C Water Planning Group, and we hope that serious consideration will be given to this water supply option for the region.

In addition we recommend that Region C examine the feasibility at least for 2030 and beyond of direct potable reuse, which has gained attention as a result of experiences in Big Spring and Wichita Falls. Although these projects were borne out of necessity in these areas, they are harbingers of more serious consideration of this option elsewhere in the coming years. Region C has been a leader in reuse projects. It is time for the region to examine becoming a leader in direct potable reuse.

Drought Management/Response

TWDB recognized the importance of drought management and response to meeting the state's water needs when the agency revised the rules governing regional water planning for this round of planning and required that each regional water plan have a separate chapter on the topic. The chapter on "Drought Response" in the 2016 Draft Region C Plan contains valuable information on the drought contingency plans of water utilities in the region, and it notes the efforts by major water providers to coordinate the stages of their drought contingency plans in order to enhance public understanding of the appropriate actions to take to respond to drought (an effort that we applaud).

We are disappointed to note, however, that Region C (not alone among the water planning regions) has once again discounted the use of drought management as a recommended water management strategy for the region. The draft 2016 Plan asserts that: "Such measures are not designed to address long-term growth in demands but, rather, are inherently temporary strategies intended to conserve water supplies or reduce adverse impacts during times of drought or emergency and are not active under more hydrologically favorable conditions." Well, the whole purpose of regional and state water planning in Texas is to develop strategies to meet water needs ***during a drought as severe as the historic drought of record*** (the 1950s multi-year drought, although the short-term drought of record may now be different for some parts of the state). If Texas were only planning for the water supplies needed under "more hydrologically favorable conditions," many of the existing water supplies, much less some of the proposed water infrastructure projects, would not be needed.

There are at least two ways to plan for and to respond to droughts: seek to build enough water capacity (no matter the cost) to address everyone's water demands, regardless of rainfall or heat or any other condition, or seek responsible reductions in non-essential water use during drought situations for the duration of those dry periods. Obviously the best approach is to have a balance of water sources and infrastructure to tap during a range of weather conditions combined with responsible water demand reductions during drought. The State of Texas recognized this when the Texas Legislature in 1997 enacted Senate Bill 1 to establish the current regional and state water planning process but also to create a requirement for the preparation of drought contingency plans by a number of water suppliers and users. Those drought contingency planning requirements have been expanded over time. By action of the Texas Legislature in 2013 water suppliers are ***required*** to implement their drought contingency plans whenever their county is included in a drought proclamation issued by the Governor.

So we have a situation in Texas where water suppliers are required by law to implement drought contingency plans during drought situations, plans which by and large include different stages with different measures for water use reduction depending upon the severity of the stage. However, most regional planning groups such as Region C do not believe that those contingency plans ought to be considered as water management strategies in a regional plan that is supposed to prepare their respective region to address a drought as severe as the historic drought of record.

This approach by most regional water planning groups such as Region C is not universal, however. Region K (the Lower Colorado Region) has specifically recommended "Drought Management" as a water management strategy in its 2016 Region K IPP (see pages 5-110 through 5-119 of the Region

K IPP). The Region K IPP points out that in its region certain water user groups put into practice water use restrictions in the summer of 2011 but that others did not do so until late 2011 or early 2012. Therefore, the water demand projections in the 2016 Region K IPP "...generally do not reflect implemented drought management water restrictions inherently," but "it can be anticipated that in the future, during times of reduced rainfall comparable to 2011, water use restrictions would be implemented in a large portion of the region."

As a result Region K applied the following methodology for a recommended drought management strategy for most municipal water user groups for this planning cycle regardless of need:

- Base GPCD (Year 2011) greater than 100 – 15% water demand reduction each decade
- Base GPCD (Year 2011) less than 100 – 5% water demand reduction each decade
- Defer to a WUG's Drought Contingency Plan "Severe" trigger goal, when possible.
- Consider whether water use restrictions were in place in 2011.

According to the Region K IPP: "For some of the WUGs that have drought management recommended as a strategy, the percent of reduction is as high as 30 percent because that is the amount they have to reduce by during a critical drought." The 2016 Region K IPP specifically details drought management water savings for municipal WUGs in acre-feet per year for each decade of the 50-year planning horizon.

The Sierra Club strongly urges Region C to revisit the issue of drought management and to recommend drought response as a water management strategy for municipal water user groups.

Concluding Comments

Sierra Club recognizes that the regional water planning process in Texas is a challenging undertaking and that reasonable people may disagree about many aspects of the plans produced – including water demand projections and strategies for meeting water demands. We respect the people – whether consultants, regional water planning group members, or water utility professionals – who put their time and effort into doing this work. We offer our comments as a constructive critique of some aspects of the Region C water plan in an effort to move the process forward and meet the water needs of both people and the environment.

In future revisions to the Region C plan we hope that other topics will be addressed, such as identifying environmental water needs and fashioning water management strategies to meet those needs, not just water supply needs. We continue to see a need for a more comprehensive approach to water planning in Texas. We are committed to working with Region C and other regional water planning groups to achieve that goal.

Thank you again for the opportunity to provide our perspective on the draft 2016 Region C Water Plan.

Tarrant Regional Water District

August 18, 2015

Mrs. Amy D. Kaarlela, P.H.
Region C Project Manager
Freese and Nichols, Inc.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109

RE: 2016 Region C Regional Water Plan - Final Plan

Dear Mrs. Kaarlela:

May this letter serve to respond to your August 14, 2015 request that Tarrant Regional Water District (TRWD) inform Region C Regional Water Planning Group in writing of its agreement with the Sulphur River Basin Authority Joint Committee for Project Development (JCPD) recommendation regarding the Sulphur Basin Supplies Management Strategy currently included in the Region C Regional Water Planning Group's Initially Prepared Plan (IPP). TRWD further agrees with its inclusion in the Region C Final Plan. We specifically recognize that the strategy consists of the combination of the Marvin Nichols Reservoir at elevation 313.5 msl and the reallocation and pool raise of Wright Patman to elevation 232.5 msl.

Please present TRWD's agreement with the Sulphur River Basin Authority's JCPD recommendation regarding the Sulphur River Basin Supplies Management Strategy at the September 28, 2015 meeting of the Regional Water Planning Group.

Sincerely,

Wayne

Wayne Owen
Planning Director

xc: Dan Buhman
Woody Frossard
Jim Oliver
Jack Stevens

P.O. Box 4508, Fort Worth, Texas 76164-0508 800 E. Northside Drive Fort Worth, Texas 76102-1016
Office: 817-335-2491 Fax: 817-877-5137 *www.trwd.com*

Comments on the Region C Initially Prepared Plan
Submitted by Texas Conservation Alliance
August 23, 2015

Texas Conservation Alliance (TCA) appreciates the opportunity to submit to the Region C Water Planning Group the following comments on the Region C IPP.

TCA greatly appreciates efforts the water providers of Region C have put forth in implementing conservation strategies throughout the extended drought. The results of their efforts are clearly reflected in the reduction in future projected demand for water – i.e., approximately 600,000 AFY less in 2060 than was projected in the 2011 State Water Plan.

Value of Current Supply

Table 3.8 of the IPP lists Region C's total water supply, connected and unconnected, as 2,272,150 AFY. Table 2.1 shows the projected population of Region C in 2070 at 14,347,912. If the region as a whole can bring the average water consumption down to 141 gallons per person per day (gpcd), the current supply will be adequate to meet the projected demands of 2070.

Best current conservation practices make this an achievable goal.

The water planning process must of course anticipate that some current supplies will not be available in the future. The planning process should seek the most cost-effective alternatives to augment current supplies. The IPP fails to fully explore the cheapest available options.

Municipal Reuse-Recycling

If water use in Region C reaches 2.6 million AFY, there will be at least 1.3 million AFY of return flows available. The IPP anticipates 429,018 AFY of reuse in 2070, but in principle there is no reason why all, or almost all, return flows could not be used as water supply.

Reuse may be implemented in a wide variety of ways. These can be divided into three broad groups:

1) Direct potable reuse-recycling, in which water from secondary treatment undergoes a number of treatment steps sufficient to make the water suitable for direct delivery to municipal customers.

2) Indirect potable reuse-recycling, which makes use of an environmental buffer, in which water from secondary treatment undergoes further treatment, making it suitable for release into a water supply source such as a lake or underground aquifer.

3) Non-potable reuse-recycling, in which water from secondary treatment gets used for landscape watering or industrial cooling.

The Region C IPP anticipates some use of Options 2 and 3, but shows no interest on the part of Region C in direct potable reuse. Texas Conservation Alliance strongly urges the Region C WPG to pursue every reuse option until it is clear which ones are the most economical and best suited to the region's needs. A minimum of 80% reuse is a realistic goal.

If future municipal demand were the 2.6 million AFY projected for 2070, producing return flows of at least 1.3 million AFY, then a water supply from reuse of at least a million AFY would be achievable – roughly 570,000 AFY more than the 429,018 AFY in the IPP's projections.

If 570,000 AFY of reuse were added to the Region C IPP's projected supplies for 2070, then total supplies would be approximately 2.8 million AFY. Given a demand of 2.9 million AFY, conservation and reuse together would come very close to supplying all the region's future needs.

One additional factor must be considered:

Future Yield of Area Reservoirs

The IPP takes account of a number of factors which might limit the future yield of area water supply reservoirs, such as more severe droughts and siltation of the lakes.

But the IPP neglects a more important factor which will increase the yield of the lakes in the future: increased run-off due to the impervious cover associated with urbanization.

Historically, about one-sixth (1/6) of the yearly precipitation in the DFW area ran off into area streams and lakes. When the area becomes urbanized to the point of 20% impervious cover -- a realistic expectation if the IPP's population projections for 2070 are accurate -- the run-off will almost double.

This principle is clearly illustrated by Figure 3-10, titled "Average Annual Run-Off in Texas, 1960 to 1990", on Page 3-10 of the 1997 State Water Plan. It shows the area around Dallas and Fort Worth as having run-off of more than twice the non-urbanized areas of Region C, and comparable to the much wetter part of Texas in the southeast part of the state.

As an article in the *Florida Water Resources Journal* states, "Though stormwater runoff is a standard part of engineering design, it has been addressed primarily on an individual project basis, and typically has not been related to or incorporated into regional water supply planning efforts." ("The Effects of Urbanization on Water Supply", *Florida Water Resources Journal,* p. 31, February 2004.)

Consequently, there are no studies which would enable us to estimate the yield of area lakes for various levels of urbanization. Until such studies are done, we can reasonably assume that the future yield of the surface water supplies named in Table 3.2 of the IPP will be significantly higher than the 1,668,000 AFY given in the table.

Taking 1.8 million AFY as a conservative estimate for the yield of the lakes, and adding an also conservative one million AFY of reuse, plus 200,000 AFY of groundwater and other local supplies (Table 3.1 of the IPP), we obtain a total of at least 3 million AFY in 2070, more than the projected demand.

[This total ignores the substantial increase in the yield of Cedar Creek and Richland-Chambers Reservoirs that could be obtained by diverting flood flows from the main stem of the Trinity River.]

Special Significance of Cedar Creek and Richland-Chambers

One particular way to exploit the potential for reuse and urban run-off as sources of water supply is to make use of the location of Cedar Creek and Richland-Chambers Reservoirs with respect to the main stem of the Trinity River. These lakes are positioned such that large flows from the Trinity River could be diverted into the lakes at low cost. Much of the treated wastewater and urban flows of the DFW area drain into the main stem of the Trinity River. As the area's population grows, these flows will increase substantially.

During the recent drought, regarded by many as the worst in Texas history, the minimum flow in the Trinity River at the Rosser Gauge below Dallas was roughly three times what it was in the 1950's drought. The flows for the minimum one-year, two-year, and three-year periods are reflected below (in round numbers):

Minimum Flows of the Trinity River at Rosser Gauge During Historic Droughts (in acre-feet per year)

	Recent Drought	*1950's Drought*
One-year minimum flow	700,000	200,000
Two-year minimum flow	1,600,000	600,000
Three-year minimum flow	3,100,000	1,000,000

The recent drought was as severe as the 1950's. The three times greater flow was due to increased return flows and increased urban run-off.

Under current conditions, if all flows above 500 cubic feet per second (cfs) were diverted into Cedar Creek and Richland-Chambers during the years of lowest flow, the two lakes would have a combined firm yield of at least a million AFY. This number will increase significantly over the coming decades as the amount of return flows and urban run-off increase.

Tarrant Regional Water District, which owns the yield of the two lakes, is projected to have a water supply shortfall in 2070 of 450,000 AFY. Obviously, full use of these two lakes will meet any future demand. Questions of water quality and water rights would have to be addressed, but could be resolved if Region C's water providers were to seriously pursue this option.

Conclusion

The above analysis suggests that Region C can meet any foreseeable demand by simply making optimal use of its existing water supply sources.

Lake Texoma -- a Cost-Effective Source of Supply

As shown above, conservation and reuse-recycling, combined with existing supplies (connected and unconnected), are likely to be sufficient to meet Region C's future water demands. To cover any shortfalls, the most cost-effective and lowest-impact option for future water supply is to obtain additional water from Lake Texoma.

<u>Lake Texoma Maximum Blending</u>

The Region C Plan should recommend that North Texas Municipal Water District maximally use its permitted water right Lake Texoma before consideration is given to building new reservoirs.

North Texas Municipal Water District's total permitted water rights equal 579,275 AFY.

NTMWD Water Supply 2060

Source of Water (from DEIS)	**Amount 2060**
Lake Lavon	105,000
Lake Texoma	184,000
Jim Chapman Lake	47,000
Wilson Creek Reuse	71,882
Lake Bonham	5,000
East Fork Reuse	157,393
Upper Sabine Basin	9,000
TOTAL	**579,275**

If existing infrastructure were used to deliver 150,000 AFY of Texoma water to the Wylie Treatment Plant and that water was blended with the available supplies detailed on the table above, the resultant treated water would have a total dissolved solids value of 463 ppm, well within drinking water standards, based on the following assumptions: (1) that the Lake Texoma water would have dissolved solids of 800 ppm (the lake average according to report done by HDR Engineering in 2005 [i]), (2) that the natural inflows to Lavon and Chapman would have dissolved solids of 200 ppm (a typical amount for surface water in the Dallas area), (3) that the Wilson Creek Wastewater Treatment Plant discharges would have dissolved solids of 400 ppm (the maximum stream standard for Lake Lavon), and (4) that reuse water from the East Fork Wetland would have dissolved solids of 300 ppm.

If ozone water treatment were planned for some of the water to be blended with Lake Texoma water, then some or all of the Lake Texoma water might have to be treated separately because of concern over bromine compounds.

It should be emphasized that since the Texoma blend option can utilize existing diversion rights and existing pipelines, the cost of the water from this option would be very low, making it desirable for NTMWD's ratepayers, as well as avoiding destructive reservoir construction.

Lake Texoma Desalination

The Region C IPP mentions the possibility of reallocating additional hydropower in Lake Texoma to water supply. Region C should be recommending pursuit of this reallocation, plus also reallocating Texoma flood storage to water supply. Even with the need to partially desalinate the slightly-brackish water in Lake Texoma, water from Lake Texoma would be the lowest cost source of new water other than conservation and reuse-recycling.

Option B in a study done for Dallas Water Utilities by HDR Engineering in 2005, titled "Cost Evaluation of Two Options to Deliver Lake Texoma Water to City of Dallas", indicated that it would be cost-effective to divert water from Lake Texoma, desalinate part of it, mix the desalinated and undesalinated parts, and transport it the short distance from Lake Texoma to the DFW area. A cost analysis done by Trungale Engineering and Science for Texas Conservation Alliance in 2012 updated the costs of the HDR study.

The HDR study referenced above assessed delivering 81,000 AFY of treated water, in 2004 prices, to Dallas' Elm Fork Treatment Plant, at $1.71 per thousand gallons of treated water. Trungale Engineering and Science updated the figures in the HDR report to 2008 prices and adjusted the costs for a shorter pipeline, one closer in length to what would be needed in NTMWD's case. Trungale concluded that treated water from Texoma desalination would cost $1.93 per thousand gallons. Costs of both pipeline and conventional water treatment have risen substantially since 2008. Nevertheless, cost for this option should come in well under $3.00/kgal.

Water supply projects patterned after the HDR study would both save money for the water rate payers of the DFW area and avoid unneeded reservoir construction.

The Region C IPP's discussion of desalinating water from Lake Texoma, found in Section 5B.5, contains several assertions that are either inaccurate or irrelevant. It is worth the time here to respond to those assertions, which should be corrected or eliminated from the next draft of the Region C Plan.

Assertions that need correcting or removal from the Region C IPP:

1. Assertion: There is not an established track record of success in the development of large brackish water desalination facilities.

   Response: The truth of this statement depends on what "established" and "large" mean. Membrane reverse osmosis systems have been in use for decades and there are a sizable number operating in Texas and thousands more worldwide. It is doubtful that the manufacturers and users of such systems would agree with this assertion.

2. Assertion: Most of the large desalination facilities built to date are located on or near the coast.

   Response: For Assertion #1 to be accurate, we would have to assume that none of these large coastal facilities have been successful. In any case, this assertion, if true, is irrelevant. A Lake Texoma brine stream can be placed in the Red River (stream limit 6,000 ppm) upstream of Lake Texoma. No need for an ocean.

3. Assertion: If a 100 mgd or larger plant were to be developed for Lake Texoma water, it would be the largest inland desalination plant in the world.

   Response: As above, this statement, if true, is irrelevant.

   Desalination equipment is inherently modular and there is no qualitative difference between large and small systems

4. Assertion: The method, cost, and regulatory requirements of brine disposal for such a facility are uncertain.

   Response: There are numerous communities in Texas that utilize desalination. Even if deep-well injection were proved necessary to desalinate water from Lake Texoma, there is little uncertainty as to the method or cost. There are thousands of such wells operating in Texas, more than any other state.

Marvin Nichols Reservoir – the Most Destructive Project in the Plan

Given the 600,000 AFY reduction in demand projections compared to the 2011 Plan, the logical step would be to remove the most economically and environmentally damaging project -- the proposed Marvin Nichols Reservoir – from the Region C Plan. While the Region C IPP does recommend a smaller version of Marvin Nichols, the proposed lake remains the most destructive recommended option for water supply. It should be removed from the Region C Plan altogether.

Sulphur Basin Supplies

The Region D Water Planning Group and the people of the Sulphur Basin have long indicated a willingness to cooperate with Region C to obtain water from the Sulphur River, provided that water providers in Region C did not build a new reservoir to obtain those supplies.

As the analysis of reuse-recycling above indicates, it is unlikely that supplies from the Sulphur Basin will ever be needed. Should supplies be needed from the Sulphur Basin, efficient use of Wright Patman is unmistakably a preferable option to building either proposed version of Marvin Nichols Reservoir. Marvin Nichols Reservoir should be removed from being a part of the "Sulphur Basin Supplies" option, as well as being a stand-alone alternative project in the Region C Plan.

The information on the Sulphur Basin Supplies option is seriously lacking. The IPP acknowledges that the required analysis and quantification of impacts of obtaining water from Wright Patman has not been included and will be developed for the future draft.

Among the specific issues that should be addressed in discussing the Sulphur Basin Supplies option:

- Give a breakdown of how much of the total water developed under the proposed "Sulphur Basin Supplies" is from Wright Patman and how much from the 42,000-acre Marvin Nichols Reservoir;

- Indicate which element of the Sulphur Basin Supplies option (Marvin Nichols or Wright Patman) is recommended to be developed first;

- Where the IPP repeatedly states the number of acres that would have to be purchased in fee to develop Wright Patman portion of Sulphur Basin Supplies, indicate how many of those acres are already under easement to the Corps;

- Since many people think Marvin Nichols Reservoir would be unmitigable, discuss the prospects for mitigation.

Lake Tehuacana

The Region C WPG should not list Lake Tehuacana as a recommended water management strategy. Tehuacana Creek flows very close to Richland-Chambers Reservoir. It would be much more economical and do far less environmental damage to pump the water that would be impounded in Lake Tehuacana into Richland-Chambers and store it there.

Lower Bois d'Arc Creek Reservoir, Ralph Hall Lake, Neches Run-of-the River Project, Lake Columbia

The analysis above indicates that recommended new reservoir projects -- Lower Bois d'Arc Creek Reservoir, Ralph Hall Lake, Neches Run-of-the-River, and Lake Columbia -- and the new reservoirs such as George Parkhouse which are named as alternatives will not be needed within the planning horizon.

Conclusion

It seems obvious to Texas Conservation Alliance that continuing to build water supply lakes in East Texas, where they are not needed and not wanted, for the purpose of meeting demands in the Metroplex that may never materialize and could be more inexpensively met by use of local water, needs to stop.

Texas Conservation Alliance
Contact: Janice Bezanson, Executive Director
254-947-5572, bezanson@texas.net
tcatexas.org

UPPER NECHES RIVER MUNICIPAL WATER AUTHORITY

August 18, 2015

Mr. J. Kevin Ward
Administrative Agent for Region C
Trinity River Authority
P.O. Box 60
Arlington, TX 76004

Via: Email: regioncwpg@trinityra.org
U.S. Post

Re: Comments on the 2016 Initially Prepared Region C Water Plan

Dear Sir:

The Upper Neches River Municipal Water Authority respectfully submits the attached comments regarding the 2016 Initially Prepared Region C Water Plan.

We appreciate this opportunity.

If there are any questions, or if any additional information is necessary or required, please contact us at your convenience.

Sincerely,

Monty D. Shank
General Manager
Upper Neches River Municipal Water Authority
P.O. Box 1965
Palestine, TX 75802
Phone: 903-876-2237
Fax: 903-876-5200
mdsunra@dctexas.net

Enclosure

MAILING ADDRESS
P. O. BOX 1965
PALESTINE, TEXAS 75802

PHONE: 903-876-2237
FAX: 903-876-5200
E-Mail: unrmwa@dctexas.net

ADMINISTRATION BUILDING
ON LAKE PALESTINE
BLACKBURN CROSSING DAM

Upper Neches River Municipal Water Authority

Comments on the 2016 Initially Prepared Region C Water Plan
August 18, 2015

1) Page 5A.11 – Include "Neches Run-of-River" among potential new surface water supplies that would need interbasin transfer permits.
2) Page 5A.12 – Table 5A.3 should reflect that interbasin transfer of 114,337 acft/yr is already permitted from Lake Palestine pursuant to Certificate of Adjudication No. 06-3254C.
3) Page 5A.13 – Clarification of Neches River Run-of-River Supplies in Table 5A.3 is necessary. Pursuant to Certificate of Adjudication No. 06-3254C, interbasin transfer of 18,000 acft/yr diverted from the Neches River at the Rocky Point Downstream Diversion Dam is presently authorized. An additional interbasin transfer authorization would be needed to implement the recommended Neches Run-of-River water management strategy.
4) Page 5A.16 – Confirm the amount of the Lake Palestine (Integrated Pipeline with TRWD) maximum supply available to Region C shown as 110,670 acft/yr in Table 5A.4. Shouldn't this value be 114,337 acft/yr? See Comment #2 above.
5) Page 5A.16 – Revise Table 5A.4 to show that the Neches Run-of-River water management strategy has a maximum supply available to Region C of 47,250 acft/yr and that this strategy was recommended in the 2011 Plan.
6) Page 5A.17 – Delete the duplicative line in Table 5A.4 regarding the Neches Run-of-River water management strategy. This strategy is already included in Table 5A.4. See Comment #5 above.
7) Page 5B.6 – All five qualitative impact characterizations for the Neches Run-of-River strategy in Table 5B.2 are too high and are inconsistent with the impact characterizations of other strategies. The recommended Neches Run-of-River strategy does <u>not</u> include an off-channel reservoir and impacts should not be assessed as if it does.
8) Page 5B.14 – In the second to last sentence, delete "operated conjunctively with tributary storage, groundwater, and/or" and replace with "in."
9) Page 5C.10 – In the first complete sentence, delete "operated conjunctively with tributary storage, groundwater, and/or" and replace with "in".
10) Page 8.12 – In the first paragraph regarding Lake Fastrill, delete the final sentence.
11) Pages P.61 through P.64 – Revise this Technical Memorandum regarding the recommended Neches Run-of-River water management strategy as follows:
    a. Page P.61 – Strategy Capital Cost is reported in Sept. 2013 (not 2011) dollars.
    b. Page P.61 – Revise the last sentence in the second paragraph to read: "Hence, the run-of-the-river project would be operated as a system with Lake Palestine using available storage capacity therein during drought."
    c. Page P.61 – In the last complete sentence, delete "with tributary storage, groundwater, and/or system operations."

d. Page P.62 – In the first complete paragraph, replace "40 MGD (44,840 acre-feet/year)" with "42 MGD (47,250 acre-feet/year)."

e. Page P.62 – After the first sentence in the last paragraph regarding Neches Run-of-River Diversions with Tributary Storage (Alternate), insert the following sentence: "This alternate strategy includes system operations with Lake Palestine." System operations of this alternate strategy with Lake Palestine could result in a firm yield of 75,000 acft/yr at a unit cost of $434/acft/yr during the debt service period.

f. Page P.63 - After the second sentence in the first complete paragraph regarding Neches Run-of-River Diversions with Groundwater (Alternate), insert the following sentence: "This alternate strategy includes system operations with Lake Palestine." System operations of this alternate strategy with Lake Palestine could result in a firm yield of 84,875 acft/yr at a unit cost of $414/acft/yr during the debt service period.

g. Page P.63 – Under the heading of Supply Development, replace "2014 Report" with "February 2015 HDR Report" and include a complete reference on page P.65. See Comment #12 below.

h. Page P.63 – Under the heading of Environmental Considerations, delete the table which is for the <u>Nueces</u> Off-Channel Reservoir. The recommended Neches Run-of-River water management strategy does <u>not</u> include an off-channel reservoir.

i. Page P.64 – Under the heading of Water Management Strategy Evaluation, revise the Quantitative and Qualitative Evaluations for Environmental and all Impacts Factors to appropriately reflect that the recommended Neches Run-of-River water management strategy does <u>not</u> include an off-channel reservoir. See Comment #7 above.

12) Page P.65 – Include the following references:

a. HDR Engineering, Inc. and Todd Groundwater: *Upper Neches River Water Supply Project Feasibility Study*, Upper Neches River Municipal Water Authority, February 2015.

b. HDR Engineering, Inc., Webb & Webb, CDM-Smith, Todd Groundwater, JQ Infrastructure, AZB Engineers & Surveyors, K Strategies, Inc., TAS & Associates, and MS Dallas: *2014 Dallas Long Range Water Supply Plan to 2070 and Beyond (Draft)*, Dallas Water Utilities, City of Dallas, April 2015.

13) Page Q.67 – Revise Table Q-38 title and content to reflect "UNRMWA and/or DWU" as probable owner. Also, revise footnote to state: "Cost estimates provided by HDR, Inc. and modified for regional water planning purposes by Freese & Nichols, Inc."

UPPER TRINITY
REGIONAL WATER DISTRICT

Upper Trinity Regional Water District's Comments on the 2016 Region C Initially Prepared Plan

June 24, 2015

Table 5C.24
Summary of Costs for Corsicana Alternative Strategies

Strategy	Date to be Developed	Quantity for Corsicana (Ac-Ft/Yr)	Corsicana Share of Capital Costs	Unit Cost ($/1000 gal)		Table for Details
				With Debt Service	After Debt Service	
Navarro Mills WTP Expansion	Unknown	5,605	$25,951,000	$1.70	$0.51	Q-13
Total Corsicana Capital Costs						

Sabine River Authority

The Sabine River Authority (SRA) is based in the North East Texas Region (D) and the East Texas Region (I), with a small area in the Sabine Basin in Region C. The SRA currently provides water from its Upper Basin reservoirs (Lake Tawakoni and Lake Fork Reservoir) to water users in Region C. These sources are fully contracted and SRA has requests for additional water in the Upper Basin. The SRA plans to participate in the Toledo Bend Reservoir Project that would transport water to the Upper Basin area and Region C. The Sabine River Authority is also seeking an amendment to its existing water right in Toledo Bend Reservoir for an additional 293,300 acre-feet per year of water supply. This amendment has been submitted to the Texas Commission on Environmental Quality and declared administratively complete. The North East Texas Region and the East Texas Region will develop management strategies for the Sabine River Authority.

Sulphur River Municipal Water District

The Sulphur River Municipal Water District is located primarily in the North East Texas Region (D). The District supplies water to Upper Trinity ~~River~~ Regional Water District (by contract with Commerce) and North Texas Municipal Water District (by contract with Cooper) in Region C. The North East Texas Region will develop any water management strategies needed for the Sulphur River Municipal Water District.

Upper Neches River Municipal Water Authority

The Upper Neches River Municipal Water Authority (UNRMWA) is located in the East Texas (I) Region. UNRMWA has a contract to provide water from Lake Palestine for Dallas Water Utilities, and DWU is planning to connect that supply during the planning cycle. The East Texas Region will be responsible for developing any water management strategies needed for the UNRMWA.

Table 5C.56
Summary of Costs for Midlothian Recommended Strategies

Strategy	Date to be Developed	Quantity for Midlothian (Ac-Ft/Yr)	Midlothian Share of Capital Costs	Unit Cost ($/1000 gal)		Table for Details
				With Debt Service	After Debt Service	
Conservation (retail)	2020	560	$531,705	$3.32	$1.01	Q-10
Conservation (wholesale)	2020	802	Included under County Summaries in Section 5D			
Additional TRWD	2020	11,129	$0	$0.97	$0.97	None
6 MGD WTP Expansion-1	*2020*	*3,363*	$17,433,000	$1.90	$0.57	Q-13
6 MGD WTP Expansion-2	*2040*	*3,363*	$17,433,000	$1.90	$0.57	Q-13
6 MGD WTP Expansion-3	*2060*	*3,363*	$17,433,000	$1.90	$0.57	Q-13
Total Midlothian Capital Costs			**$52,830,705**			

Table 5C.57
Summary of Costs for Midlothian Alternative Strategies

Strategy	Date to be Developed	Quantity for Midlothian (Ac-Ft/Yr)	Midlothian Share of Capital Costs	Unit Cost ($/1000 gal)		Table for Details
				With Debt Service	After Debt Service	
Direct Potable Reuse (Mountain Creek WWTP effluent)	2020	5,605	$52,417,600	$5.31	$2.91	Q-110
Purchase Duncanville's yield of Joe Pool (up to 1 MGD)	2020	1,121	$66,200	$1.11	$1.09	Q-111
Total Midlothian Capital Costs						

Mustang Special Utility District

Mustang Special Utility District (SUD) provides water to customers within its service area as well as retail service to residents of Cross Roads, Krugerville, Oak Point, Paloma Creek, Providence Village WCID, and Denton County FWSD #10 and is expected to continue these water sales through the planning period. The demands of these customers are expected to almost triple over the planning period due to population growth in the Denton County area. The SUD is currently supplied from the Trinity and Woodbine aquifers and treated surface water purchased from the Upper Trinity Regional Water District (UTRWD). Mustang SUD has a projected need for 11,961 acre-feet per year of additional supplies in 2070. The UTRWD plans to continue providing water to Mustang SUD, and projects developed by UTRWD will be able to supply the ~~M~~SUD's needs. The recommended water management strategies for Mustang SUD include implementing water conservation measures, purchasing additional water from the UTRWD, and

These are Customers of UTRWD. They do not belong under Mustang SUD

Table H.32
Upper Trinity Regional Water District
-Values in Acre-Feet per Year-

Demands (Acre-feet/year)	2020	2030	2040	2050	2060	2070
Argyle WSC	496	541	589	641	689	689
Argyle	945	1,659	2,606	2,648	2,691	2,690
Total for Argyle WSC	*1,441*	*2,200*	*3,195*	*3,289*	*3,380*	*3,379*
Aubrey	563	731	847	999	1,197	1,452
Cross Timbers WSC	36	71	110	147	183	207
Bartonville	657	756	769	783	799	798
Copper Canyon	93	122	155	193	237	268
Double Oak	233	254	278	307	338	338
Total for Cross Timbers WSC	*1,019*	*1,203*	*1,312*	*1,430*	*1,557*	*1,611*
Bolivar WSC	0	204	481	798	1,164	1,459
Celina	4,522	8,195	15,109	25,634	25,632	25,629
Corinth	3,145	3,301	3,274	3,257	3,250	3,249
Denton County Other	1,345	2,004	2,646	4,732	8,828	17,963
Denton County FWSD NO. 1A	2,452	4,351	5,211	5,209	5,207	5,205
Denton County FWSD NO. 7	3,418	3,405	3,403	3,401	3,399	3,397
Denton County FWSD NO. 10(direct)	1,188	1,172	1,171	1,170	1,168	1,168
Flower Mound	10,477	14,352	14,274	14,228	14,213	14,212
Highland Village	2,485	2,756	2,845	2,960	3,085	3,085
Justin	209	775	1,344	1,391	1,437	1,436
Krum	707	1,012	1,373	1,778	2,245	2,730
Ladonia	0	36	59	91	138	137
Lakewood Village	0	0	0	0	52	88
Lake Cities MUA						
Hickory Creek	486	622	788	1,011	1,018	1,018
Lake Dallas	914	1,017	1,193	1,202	1,217	1,217
Shady Shores	385	447	450	455	461	460
Total for Lake Cities MUA	*1,785*	*2,086*	*2,431*	*2,668*	*2,696*	*2,695*
Mustang SUD	700	2,469	4,248	6,036	7,821	9,491
Cross Roads	457	619	756	755	754	754
Denton County FWSD NO. 10 (thru Mustang)	298	1,956	1,956	1,956	1,956	1,956
Krugerville	263	315	368	435	434	434
Oak Point	789	1,334	1,885	2,440	2,995	2,994
Paloma Creek	2,562	3,472	3,470	3,468	3,465	3,464
Providence Village WCID	938	931	929	927	926	925
Total for Mustang SUD	*6,007*	*11,096*	*13,612*	*16,017*	*18,351*	*20,018*
Lincoln Park	105	122	141	159	181	181
Northlake	578	2,521	4,702	6,568	8,436	8,436
Pilot Point	0	0	351	1,010	1,794	2,706
Ponder	0	0	70	243	433	598

ese are
tomers
JTRWD.
ey do
belong
der
stang
D.

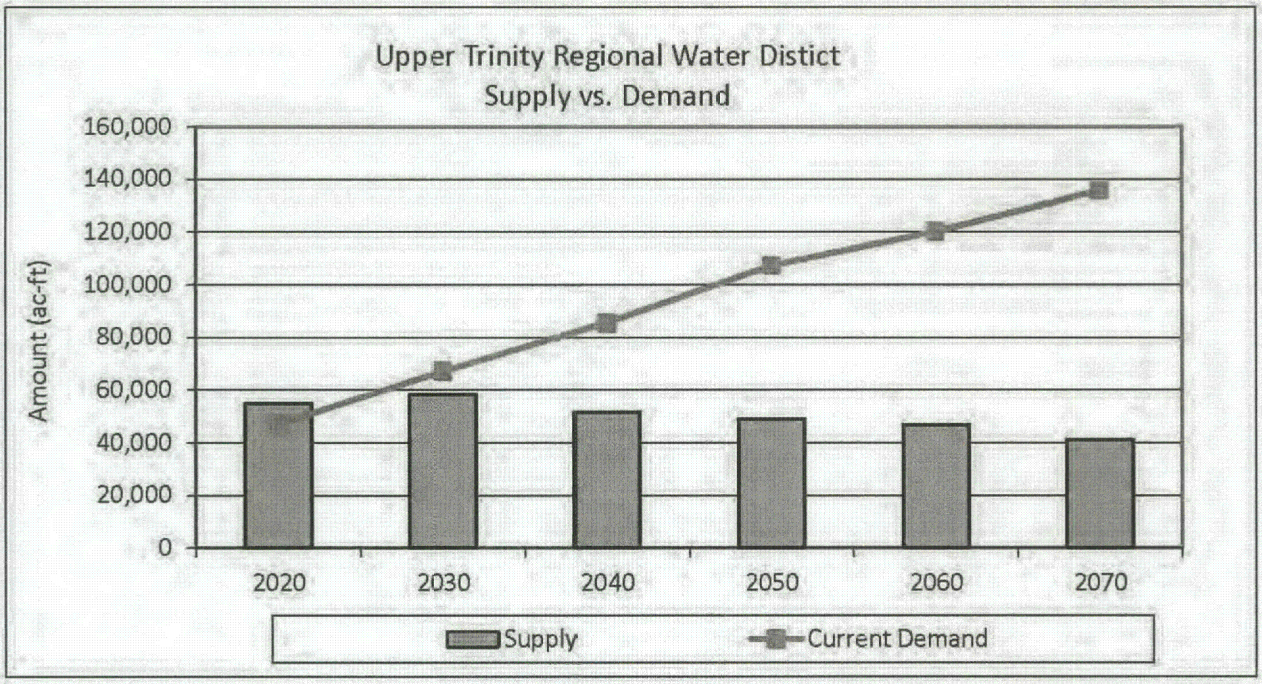
Table H.32
Upper Trinity Regional Water District
-Values in Acre-Feet per Year-

Prosper	0	0	0	0	0	0
Sanger	78	440	862	1,335	1,871	2,360
Valley View	0	4	7	10	12	15
Denton County Mining	2,363	766	1,382	2,343	3,241	4,328
Denton County Manufacturing	72	164	184	202	219	238
Total Demands	43,957	62,896	80,285	100,921	113,186	127,775
Losses in Treatment and Delivery (5%)	2,198	3,145	4,014	5,046	5,659	6,389
Denton County Irrigation	897	1,000	1,100	1,200	1,300	1,400
Total Needed	**47,052**	**67,041**	**85,399**	**107,167**	**120,145**	**135,564**

Current Supply (Acre-feet/year)	2020	2030	2040	2050	2060	2070
DWU*	37,307	40,513	37,930	35,231	33,087	31,490
Chapman	11,356	11,303	8,438	8,399	8,360	5,547
Chapman Reuse	5,435	5,575	4,287	4,392	4,497	3,068
Direct Reuse	897	897	897	897	897	897
Total	**54,995**	**58,288**	**51,552**	**48,919**	**46,841**	**41,002**

Supplies Less Demands	**7,940** 3	**-8,753**	**-33,847**	**-58,248**	**-73,304**	**-94,562**

* Under the existing contracts, UTRWD is entitled to 39,126 acre-feet per year from Dallas in 2020. However, given limited Dallas supplies in 2010 and other supplies available to UTRWD, a supply of 9,000 af/y (current 8,290 ac-ft/ yr + strategy of 710 ac-ft/y) from Dallas to UTRWD is assumed for 2010.



Comments Received via Email

From: Sharon Manicom [mailto:sjmanicom55@gmail.com]
Sent: Sunday, June 28, 2015 10:28 PM
To: RegionCWPG
Subject: Water Conservation

I am concerned about any plan that includes building reservoirs before we take all other possible measures to conserve and recycle the water that we have. The DFW region needs to further conservation strategies by asking ALL customer cities to implement water conservation programs. There are some cities, like Farmers Branch and Addison, that had no mandatory water restrictions during the recent drought! Conservation measures like outdoor water restrictions need to be applied consistently across the metroplex, and meaningful, tiered water pricing that deters water waste needs to be implemented.
Let's not resort to reservoirs until we have to!
Thank you.
Sharon Manicom
2511 Swiss Ave Loft 2
Dallas Tx 75204
Sent from my iPhone

From: JaneToeDoe [mailto:cjhof@tx.rr.com]
Sent: Sunday, June 28, 2015 6:23 PM
To: RegionCWPG
Subject: from Curtis and Jane Hoffman Dallas TX

Dear RCWPG:

We have been hearing about water conservation plans in our region for some time, and we just wanted to be sure that you know how we feel. We continue to watch all the green spaces around us being developed, and since we are old enough to remember the joy of seeing open spaces between towns and cities, we feel a great sense of loss. We also have become wildlife appreciators which I believe more and more people are these days. When humans build and develop, it takes up habitat and also it takes up land that could be utilized in some other way, such as farming, recreation or forestry. We really do not understand wanting to build more reservoirs when there are so many other things that could be done first.
One thing that might help with conservation is making the public aware of the problem and what is at stake. We have neighbors who disregard the water rules in Dallas,and there is no way that the city can completely enforce these rules so there goes the water. We also, for example, had a neighbor who had a leak and was out-of-town, and when he got back, even though we had emailed them about the leak,he didn't notice how bad it was and didn't act on it for a couple of days. These are problems that we could work on making less likely with more publicity about the need to conserve, and recycling water would also be of benefit for some these and other situations as well!
Thank you for considering our thoughts.

Curtis and Jane Hoffman
6747 Lupton Dr
Dallas TX 75225

P.S. Jane Hoffman did attend one of the hearings in Arlington, but it was very difficult to hear other people's comments so we apologize if these ideas have already been presented to you!!!!

From: Judy Jones [mailto:jdth_jones@yahoo.com]
Sent: Thursday, July 02, 2015 10:16 PM
To: RegionCWPG
Subject: PROPER WATER CONSERVATION

I have recently become interested in water conservation through a friend of mine who is very active and knowledgable about this issue. From my perspective as a fiscal conservative, reservoirs will end up costing the state a lot more than conservation costs. I believe that they are about three times more expensive, and this just does not make good "cents!" Please do not plan more reservoirs until the region has tried all other methods first. We have many other things that require money so we should really try to do everything we can not to spend money we don't have to. One of the best alternatives that I have heard of is recycling!

I know that these are hard decisions, and thanks for letting us comment and let you know how we,the public,feel. Take care of our money!!!!!

Judy Jones
19002 Dallas Pkwy # 1118
Dallas TX 75287

Judy Jones
972-481-1420 home
jdth_jones@yahoo.com

From: Margie Elkins [mailto:mangiertx@yahoo.com]
Sent: Sunday, July 05, 2015 6:58 AM
To: RegionCWPG
Subject: Regional Reservoirs Not a good option

Dear Regional Water Committee;

We are very concerned to hear that you are considering more reservoirs for our region's water needs. We heard an excellent speaker on water recycling, and we are convinced that this is the way to go. It has been proven to be an effective way to conserve water and also a less expensive one. We are among the majority of Texans who, as you know, are fiscal conservatives. and we think that you should try to do the least expensive things first before you spend money on expensive reservoirs.

The land will still be there if recycling and other conservation efforts that cost less do not work. Let's do this the most cost efficient way please!

Margaret and Clay Elkins
Richardson TX 75080

From: Deborah Papathanasiou [mailto:papathanasioudeb@yahoo.com]
Sent: Monday, July 06, 2015 2:15 PM
To: RegionCWPG
Subject: Fwd: water recycling project that we all want tohe

Sent from my iPad
Date: July 6, 2015 at 1:45:49 PM CDT
To: "papathanasioudeb@yahoo.com Papathanasiou" <papathanasioudeb@yahoo.com>
Subject: water recycling project that we all want tohe

Email to REGIONCWPG@TRINITYRA.ORG

July, 2015

We are among the many who love nature which is one reason that we have a getaway home at Hideaway Lake!!!! We have heard about plans to build more reservoirs and are hoping that you will only do so as a very last resort!!!! If we really must have reservoirs, the region should exhaust all existing, impounded water before impounding new sources and inundating more productive land. Connecting the existing Lake O' the Pines was not identified as a recommended strategy but could have provided 89,600 acre-feet of water annually, the equivalent of several recommended new reservoirs combined. We feel sure that there are many other ways, especially recycling water which makes really good sense to us, to go before we destroy more land when we may not need to.

We appreciate your work!!!

Pavlos and Deborah Papathanasiou 3684 Asbury Dallas TX 75205 AND Hideaway Lake!

From: Judy VanHemert [mailto:judyvan007@yahoo.com]
Sent: Tuesday, July 07, 2015 8:31 PM
To: RegionCWPG
Subject: Water Conservation

Judy & Tristan Hunt
1210 Hat Creek Tr
Southlake TX 76092

Dear Committee:

Having attended a very thorough presentation on water recycling and having told my husband what a great idea it was, we were both disturbed when we heard that more reservoirs were even being considered at this point in time. Have your explored or considered some way so combine the very modern and less costly idea of water recycling with more conservation efforts so that more land grabbing, expensive reservoirs are not needed? We certainly hope and encourage you to go this route, rather than one of more reservoirs.
Thank you in advance for taking the time to reconsider your options.

Sincerely,
Judy and Tristan Hunt
Dr. Judy Van Hemert Hunt

From: Susan Chazanow [mailto:susanchaz@gmail.com]
Sent: Wednesday, July 08, 2015 6:11 PM
To: RegionCWPG
Subject: Region C Water Plan

To the Committee in Charge of 2016 Region C water plan:

We were recently made aware of the fact that you all are considering more reservoirs as a solution to future water needs of our region.

Aquifer storage and recovery (ASR) should be a strategy given priority over building reservoirs. Other cities, like El Paso, already have ASR programs in place. Region C should accelerate and utilize ASR strategies beyond conservation and reuse strategies BEFORE reservoirs with their high evaporation and water loss! ASR permits surface activities and PRODUCTIVE use of land while reservoirs promote PERMANENT LOSS of footprint and mitigation acres.

Thank you.

Kenneth and Susan Chazanow
6314 Contour Drive
Dallas TX 75248

From: Patty Canavan [mailto:ptcan@sbcglobal.net]
Sent: Tuesday, July 14, 2015 6:40 PM
To: RegionCWPG
Subject: Reseviors

Dear Region C WPG Commission

We just heard that you are planning to add more reservoirs to solve our water demand problem. This is not a good solution. In the long run, they will cost more money , be less efficient, and ultimately may not solve this problem at all. Why not do recycling which we have heard is much more sensible, and also demand that all area cities take part in water conservation? Also, a lot of people are not adhering to watering restrictions, and more could be done to enforce this and also to appeal to the public to be more vigilant.

Other cities have found alternative means to solve their water demands. We need to get our heads out of the past and look towards the future for answers.

Let's do everything possible to manage our water situation without adding the more costly reservoirs please.
Patty Canavan
5735 Bent Creek Trail

Dallas, TX 75252

From: Carol Reeder [mailto:mcbrhr@sbcglobal.net]
Sent: Wednesday, July 15, 2015 11:53 AM
To: RegionCWPG
Subject: Water Conservation

From 2912 Purdue
Dallas TX 75225
July 15, 2015

Dear Region CWPG Committee:

I think that I speak for many fiscal conservatives when I write to tell you that I feel that your water conservation efforts should be directed towards the most cost efficient methods. I have heard speakers explaining that creating reservoirs is much more expensive than other methods of conserving our water supply. I also believe our government uses eminent domain too freely. Among other methods I heard about for conserving water, I feel that recycling is the most sensible. While recycling alone may not be the answer, there are other things that can be done that will not cost taxpayers a dime such as asking ALL cities in this area to have water restrictions, quicker response to water main breaks and a lot more public outreach to promote water conservation.

Please spend our taxpayer money wisely.

Sincerely,
Carol Reeder

From: Sandra Dickey [mailto:sandradickey@ymail.com]
Sent: Wednesday, July 15, 2015 5:08 PM
To: RegionCWPG
Subject: Water planning

Dear Region C Water Planning Group:

We are big travelers and love the great outdoors. We have read that a significant amount of the loss of millions of ares of creek floodplain and forested river is due to the estimated 200 reservoirs that have already been built in Texas. This is very disturbing to us because we are hearing that you are planning on building even more reservoirs further depleting nature areas in our state.

We have friends in San Antonio who tell us that they pump no more water than they did twenty years ago even though there has been a huge population increase. We feel that Region C should consult with other regions to learn how we can improve our water conservation programs before rushing out and doing irreversible damage to our state's dwindling acreage. And what about the recycling we have been hearing about? Is that not going to be part of the plan?

Thank you.

Sincerely, John and Sandra Dickey Dallas TX 75248

From: Jane Taylor [mailto:247taylor@sbcglobal.net]
Sent: Saturday, July 25, 2015 9:52 AM
To: RegionCWPG
Subject: water recycling

To the Regional CWPG Committee,

I have lived in the County of Dallas since 1951 and the last 43 years of that in the City of Farmers Branch. I have a daughter in Denver and one in Salt Lake City. I love all that those states have to offer in their natural habitats. It upsets me to see how Texas is destroying so much of our natural habitat. Additional reservoirs are not my idea of a good use of our open spaces and farmland.

I have thirteen grandchildren, most that live in Texas and the others love to visit here. I want them to be able to enjoy Texas fields, trees, farmlands, and nature. Something I have enjoyed most of my life. I would like to see us recycle water and conserve it rather than ruin more of our remaining open spaces when it is not necessary. Please consider recycling water. Please preserve our land for the sake of the children in the future.

Thank you
Jane Shaw Taylor
Farmers Branch, Tx

From: szqbish@att.net [mailto:szqbish@att.net]
Sent: Monday, July 27, 2015 8:19 AM
To: RegionCWPG
Cc: Susan Bishop
Subject: New reservoirs North Texas

Dear Water Planning Committee:

We are unclear as to why aquifer storage and recovery (ASR) is not given priority over building reservoirs in the draft proposals for region C. Other Texas cities already have ASR programs, and we feel that region C should accelerate and utilize ASR strategies before adding more reservoirs with their high evaporation rates and water loss. ASR permits surface activities and productive use of land while reservoirs promote the permanent loss of footprint and mitigation acres. In addition, we do to see the reason to take away someone's land with eminent domain should that be necessary and spend the money that a reservoir requires.

Please consider doing everything possible before making the decision to sacrifice more land and money than necessary to prepare for our region's water needs.

Thank you very much.

Mike Shelby and Susan Bishop
Dallas TX

From: Anne Redelfs [mailto:readsong@juno.com]
Sent: Thursday, August 20, 2015 11:20 PM
To: RegionCWPG
Subject: Region C water

I feel very strongly that industry that uses a tremendous amount of freshwater, such as fracking, should be curtailed before we think about moving people off their land to build reservoirs. There are many more environmentally friendly options: I strongly urge you to pursue these.
Sincerely, Anne Redelfs

From: Becky Bornhorst [mailto:becky.bornhorst@gmail.com]
Sent: Friday, August 21, 2015 9:58 AM
To: RegionCWPG
Subject: Region C comments

2016 REGION C COMMENTS from
Becky Bornhorst
1405 Indian Creek Drive
DeSoto, TX 75115

Region C remains the largest consumer of water in Texas, averaging one of the highest gallons per capita per day rates in the state.

Though we applaud the region's conservation initiatives of the "lawn whisperer" media campaign and the expansion of reuse projects by which to save water, there are other water-saving measures that should be considered in the Region C plan before pursuing the proposed $21.9 billion in new reservoir projects.

An important consideration in developing the Region C plans would be the adoption of drought contingency plans as water supply strategies. Adopting drought contingency plans would close the gap between supply and demand, reducing the need and costs for developing expensive reservoir projects. It would also facilitate the funding and implementation of these drought contingency plans across the user groups within the region. Currently Region C only considers drought contingency as a "back up plan" in a situation where a supplier is experiencing a "drought worse than a drought of record."

In a limited survey taken by Region C, it was noted that of those water user groups that respondents:
- Less than 50% had employed a water system audit, leak detection/repair, or pressure control
- Less than 45% were employing time-of-day-watering restrictions
- Less than 40% were utilizing days per week watering restrictions
- Less than 40% were providing public and school water education
- Less than 35% had adopted a water pricing conservation structure
- Less than 30% had increased water pricing
- Less than 15% were offering residential water audits
- Less than 15% were reusing treated wastewater effluent
- Less than 2% offered the largest water users – industrial/commercial/or institutional users rebates

Region C should pursue water conservation measures more aggressively and consistently across the region in order to lower or possibly eliminate the need for building new reservoirs.

Below are other considerations that should be adopted in the 2016 Region C water plan:

More Water Conservation Needed

· **Region C needs to do more to ensure water conservation programs are actually implemented with the groups it serves.** According to a Region C survey, less than half of the Water User Groups (WUGs) stated that they were doing the most basic conservation measures as outlined above. Water conservation measures, should be as vigorously pursued as the reuse projects Region C has outlined.

· **Twice-per-week or no more than once-per-week watering restrictions should be mandatory and consistently implemented across the metroplex.** Due to the recent drought, residents and commercial users have now learned their lawns can survive without additional watering, so municipalities should adopt a consistent and mandatory outdoor watering policy across the DFW area. During the recent record drought, many cities such as Farmers Branch and Arlington only had voluntary yard watering restrictions.

· **Meaningful tiered municipal water rates should be implemented.** Many cities within Region C have some form of tiered water plans. However many of those tiered water plans do not inspire conservation due to a) low water pricing or b) tier breaks as high as 15,000 to 25,000 gallons before a price increase occurs. If we are to inspire those heavy water users to conserve water, a meaningful tiered water system should be implemented.

Leakage Needs to Addressed

· **A concerted effort to reduce leaks needs to take place.** Region C has the highest real water loss in the state. Municipal water loss accounts for 16.8% or 66 billion gallons per year. This volume equates to the volume of the proposed building of Ralph Hall Lake, Lake Columbia, and Lake Tehuacana combined. American Water Works Association suggests that municipal water leakage should not exceed 10%. Though Region H has proposed a 1% annual reduction in leakage to achieve less than 10% leakage, we have seen no proposal in the Region C plan to aggressively pursue reducing water leakage.

Utilize Existing Reservoirs Before Building New Reservoirs

· **Existing reservoir strategies should be utilized before building new reservoirs.** Much of Region C's needs could be addressed with conservation with the additional inclusion and implementation drought contingency strategies as part of the basic water plan. However Region C has recommended more than $21 billion in new projects causing other regions socio and economic loss. The existing reservoir of Lake O' the Pines could provided 89,600 acre-feet of water anualy but was left out as a recommended strategy. Yet Lake O' the Pines is 1/3 the cost of Ralph Hall Lake and Lake Tehuacana combined with only a 2000 acre-feet volume difference. The existing Lake Livingston was also eliminated in the 2016 Region C plans as a recommended strategy with no explanation given.

ASR Storage – A Better Alternative to Reservoirs

· **Alternative Storage & Recovery (ASR) should be utilized as an alternative to building reservoirs to meet additional water needs.** Though the idea of ASR was mentioned in an interim report to the Texas Legislature in regards to Region C this past session, there is no discussion of such projects or studies for any ASR in this plan. With an evaporation rate that exceeds annual rainfall, reservoirs are an antiquated measure by which to achieve additional water where underground storage reduces evaporation and eliminates the need for new infrastructure. Six regional groups included ASR in their 2012 plan, yet there is no discussion of any ASR projects or studies in either the 2012 or the current Region C's 2016 plan. This alternative should not be ignored as ASR could also mean the elimination of not only building new reservoirs but connecting long distances to existing sources with pipelines.

In conclusion, though Region C still has the highest per capita water usage in the state, therefore the Region C has more to gain from conservation measures than many of the other water regions statewide. When one takes into account that water conservation strategies and other measures are so inconsistently implemented, if at all with municipal user groups in Region C, it is not reasonable nor justifiable that Region C asks for more than $21 billion out of $53 billion in water projects.

From: Susybelle Gosslee [mailto:sgosslee@airmail.net]
Sent: Friday, August 21, 2015 3:26 PM
To: RegionCWPG
Cc: Susybelle Gosslee
Subject: Testimony from League of Women Voters of Dallas on Region C Water Plan

Please confirm that you have received this testimony. Thank you, Susybelle Gosslee

Testimony of the League of Women Voters of Dallas

On Region C Water Plan

August 21, 2015

The League of Women Voters of Dallas opposes new reservoirs for Region C until some of the many other conservation and strategies for water security have been instigated. We are the largest consumers of water in the state, but we do not have either the largest population or the most efficient water usage programs in the state.

Since the Texas Water Development Board does not recognize or study the impacts of climate changes on our weather systems, it seems that our region should at least consider our practices and implementation of our reservoir, groundwater, and other supplies that we already have in place.

After the 2015 Spring's happy, but unusual, rainfall, the typical hot weather has returned. Thus, while we are quickly emptying our reservoirs of "excess" water and sending it downstream to the Gulf as fast as possible, the long term effects of hotter global temperatures (including Region C) will mean higher evaporation rates. These rates will, in turn, cause even higher rates as water in reservoirs, streams, rivers, etc. begin to shrink.

Taking land, homes and jobs from people who do not even live in our water planning area because of our refusal to choose the many other alternatives and nearby reservoirs suggested in our own Region C Water Planning Group's plan appendix is neither economically nor morally justified. New reservoirs cost multi-millions of dollars and take 30-50 years to build. As taxpayers we should be well informed about all the alternatives before we ask state and local residents to fund the most expensive proposals for insuring the water survival of our region to the degradation of other regions.

The New York Times today quotes Noah Diffenbaugh, the climate scientist at Stanford University, who that states the League position plainly: "... the whole water system we have now...was designed for the old climate. Just from the temperature changes"- ignoring El Niño and other weather cycles - "we are in a new climate. The water system was not built for the climate we have now."

While Diffenbaugh is focused on California, Texas is in a similar situation with regard to our planning processes. We cannot keep ignoring our extravagant water wasteful ways and hoping that we can "build" our way out at any price by jeopardizing the economies of our region or that of our neighbors in East Texas.

From: Sharon Richey [mailto:srichey7@gmail.com]
Sent: Sunday, August 23, 2015 3:38 PM
To: RegionCWPG
Subject: Region C Water - What's needed: Additional conservation, and additional education to get the job done

The good news: Because Region C still has the highest per capita water usage in the state, plus the state's highest water losses, then the Region C has more to gain from conservation measures than many of the other water regions statewide.

Though we applaud the region's conservation initiatives of the "lawn whisperer" media campaign and the expansion of reuse projects by which to save water, there are other water-saving measures that should be considered in the Region C plan before pursuing the proposed $21.9 billion in new reservoir projects. Many, many other measures.

An important consideration in developing the Region C plans would be the adoption of drought contingency plans as water supply strategies. Adopting drought contingency plans would close the gap between supply and demand, reducing the need and costs for developing expensive reservoir projects. It would also facilitate the funding and implementation of these drought contingency plans across the user groups within the region. Currently Region C only considers drought contingency as a "back up plan" in a situation where a supplier is experiencing a "drought worse than a drought of record."

In a limited survey taken by Region C, it was noted that of those water user groups that respondents:
Let's utilize a water system audit, leak detection/repair, or pressure control
Λετ϶σ employ time-of-day-watering restrictions
Λετ϶σ τρψ utilizing days per week watering restrictions
Λετ϶σ τρψ providing public and school water education
Λετ϶σ τρψ adopting a water pricing conservation structure
Ωε νεεδ το increase water pricing, with those using the most water paying the highest prices
Λετ϶σ offer residential water audits
Λετ϶σ τρψ reusing treated wastewater effluent
Λετ϶σ offer the largest water users – industrial/commercial/or institutional users rebates for conservation

Region C should pursue water conservation measures more aggressively and consistently across the region in order to lower or possibly eliminate the need for building new reservoirs.

Below are other considerations that should be adopted in the 2016 Region C water plan:

More Water Conservation Needed

- **Region C needs to do more to ensure water conservation programs are actually implemented with the groups it serves.** According to a Region C survey, less than half of the Water User Groups (WUGs) stated that they were doing the most basic conservation measures as outlined above. Water conservation measures, should be as vigorously pursued as the reuse projects Region C has outlined.

- **Twice-per-week or no more than once-per-week watering restrictions should be mandatory and consistently implemented across the metroplex.** Due to the recent drought, residents and commercial users have now learned their lawns can survive without additional watering, so municipalities should adopt a consistent and mandatory outdoor watering policy across the DFW area. During the recent record drought, many cities such as Farmers Branch and Arlington only had voluntary yard watering restrictions.

- **Meaningful tiered municipal water rates should be implemented.** Many cities within Region C have some form of tiered water plans. However many of those tiered water plans do not inspire conservation due to a) low water pricing or b) tier breaks as high as 15,000 to 25,000 gallons before a price increase occurs. If we are to inspire those heavy water users to conserve water, a meaningful tiered water system should be implemented.

Leakage Needs to Addressed

- **A concerted effort to reduce leaks needs to take place.** Region C has the highest real water loss in the state. Municipal water loss accounts for 16.8% or 66 billion gallons per year. This volume equates to the volume of the proposed building of Ralph Hall Lake, Lake Columbia, and Lake Tehuacana combined. American Water Works Association suggests that municipal water leakage should not exceed 10%. Though Region H has proposed a 1% annual reduction in leakage to achieve less than 10% leakage, we have seen no proposal in the Region C plan to aggressively pursue reducing water leakage.

***Existing reservoir strategies should be utilized before building new reservoirs.** Much of Region C's needs could be addressed with conservation with the additional inclusion and implementation drought contingency strategies as part of the basic water plan. However Region C has recommended more than $21 billion in new projects causing other regions socio and economic loss. The existing reservoir of Lake O' the Pines could provided 89,600 acre-feet of water anualy but was left out as a recommended strategy. Yet Lake O' the Pines is 1/3 the cost of Ralph Hall Lake and Lake Tehuacana combined with only a 2000 acre-feet volume difference. The existing Lake Livingston was also eliminated in the 2016 Region C plans as a recommended strategy with no explanation given.

***Alternative Storage & Recovery (ASR) should be utilized as an alternative to building reservoirs to meet additional water needs.** Though the idea of ASR was mentioned in an interim report to the Texas Legislature in regards to Region C this past session, there is no discussion of such projects or studies for any ASR in this plan. With an evaporation rate that exceeds annual rainfall, reservoirs are an antiquated measure by which to achieve additional water where underground storage reduces evaporation and eliminates the need for new infrastructure. Six regional groups included ASR in their 2012 plan, yet there is no discussion of any ASR projects or studies in either the 2012 or the current Region C's 2016 plan. This alternative should not be ignored as ASR could also mean the elimination of not only building new reservoirs but connecting long distances to existing sources with pipelines.

In summary: Because Region C still has the highest per capita water usage in the state, then the Region C has more to gain from conservation measures than many of the other water regions statewide. When one takes into account that water conservation strategies and other measures are so inconsistently implemented, if at all with municipal user groups in Region C, it is not reasonable nor justifiable that Region C asks for more than $21 billion out of $53 billion in water projects.

Sharon Richey
4900 Vega Ct West
Ft Worth, TX 76133-1332

The following email was submitted by the 283 individuals

Subject: Comments on the 2016 Region C Initially Prepared Plan (IPP)

Dear Water Planning Group Members,

The Region C Water Planning Group is to be commended for the hard work and effort that have gone into the development of the draft 2016 regional water plan. I appreciate your dedication to meeting the water needs of our area for decades to come. I offer the following perspectives and suggestions for improvements to the draft 2016 Region C plan:

(1) The draft Region C Plan proposes a variety of proposed new projects such as the Marvin Nichols surface water reservoir in Northeast Texas that would flood tens of thousands of acres of prime agricultural land, timber lands, wildlife habitat, and devastate the economy of that region. Such massive reservoir projects create unnecessary environmental, financial, and social costs and are a disincentive for water conservation. Moreover, with all the controversy surrounding such projects, they may well be unrealistic and never built, thus failing to provide anticipated water supplies for our region. The Region C Plan should eliminate these proposed new reservoirs and instead focus on more innovative technologies such as aquifer storage and recovery (ASR), which is less costly than new reservoirs and avoids loss of water through evaporation and sedimentation, which plague surface reservoirs.

(2) The draft plan includes somewhat more water conservation than previous versions of the regional plan, which is appreciated. However, there is much more that could and should be done in the regional water plan to advance water conservation. One very effective water conservation strategy would be for the Region C plan to recommend that all municipal water user groups in the region adopt and enforce the ongoing but reasonable restrictions on outdoor landscape watering already adopted by the Cities of Dallas, Fort Worth, and Irving. Also, Region C should include water loss control as a water management strategy (as is being done in Region H), especially since our regional average municipal water loss is 15%, a waste of billions of gallons of water each year.

I believe that these changes in the plan would provide a more certain path to using our region's water resources more efficiently and economically and avoiding the controversies that entail from proposing surface water reservoirs that would negatively impact other regions.

Thank you for the opportunity to comment on the 2016 Region C IPP.

Appendix W

APPENDIX W

RESPONSE TO COMMENTS ON INITIALLY PREPARED PLAN

APPENDIX W
RESPONSE TO COMMENTS ON INITIALLY PREPARED PLAN

This appendix includes responses to comments on the *Initially Prepared 2016 Region C Water Plan* (IPP) that were received by the Region C Water Planning Group (RCWPG). Comments from state agencies (Texas Water Development Board and Texas Parks and Wildlife Department) are presented in full at the beginning of the appendix. The remainder of the appendix includes responses to specific written comments and responses to the general comments that were received both in written form and from oral comments provided at the June 24, 2015 Region C Water Planning Group Public Hearing on the Initially Prepared Plan. The full version of all comments and a full transcript of the comments from the public meeting may be found in Appendix V.

TWDB Comments on Initially Prepared 2016 Region C Regional Water Plan with Responses

Level 1:	**Comments and questions must be satisfactorily addressed in order to meet statutory, agency rule, and/or contract requirements.**

1. Please consider including a general statement clarifying whether or not the planning group met all requirements under the Texas Open Meetings Act in the final, adopted regional water plan. *[31 Texas Administrative Code (TAC) §357.21 and §357.50(d)]*

   These requirements were met. A statement was added in Chapter 10 (page 10.7) saying that they were met.

2. Please describe how publicly available plans for major agricultural, municipal, manufacturing and commercial water users were considered in the final, adopted regional water plan. *[31 TAC §357.22(a)(4)]*

   Region C consulted published plans for major municipal water providers (TRWD IWSP, NTWMD, DWU Long Range Plan, etc) and met with all major WWPs to gather input. A paragraph was added to the top of page 5C.2 describing how these plans were consulted.

   Region C also sent surveys to all WUGs and WWPs not met with asking for future plans. There is no major agriculture use in region and no published agricultural water plans. Manufacturing and commercial uses are covered under most WWP's plans. A paragraph was added to the top of page 5D.1 describing how these plans were consulted.

3. Chapter 2: Please include a summary of the the municipal demand savings due to plumbing fixture requirements (as previously provided by TWDB) in the final, adopted regional water plan. *[31 TAC §357.31(d)]*

   This information was already in Table 5E.9 of the IPP as a total for the Region. A new paragraph has been added to Chapter 2 (pages 2.6 and 2.7) to further describe these savings. This new paragraph references a new table at the end of Appendix E which presents these savings by WUG/county.

4. Please provide a statement regarding any water availability requirements promulgated by a county commissioners court pursuant to Texas Water Code (TWC) §35.019, which in Region C applies to the North-Central Texas Trinity and Woodbine Aquifers Priority Groundwater Management Areas. *[31 TAC §357.22(a)(6)]*

   To our knowledge, no Region C county commissioners court has promulgated any water availability requirements. We added a paragraph on page 1.15 stating this. We also added a new Figure 1.3 showing the Priority Groundwater Management Areas in Texas.

5. The plan does not appear to include a listing of the water rights that are the basis for the surface water availability in the plan. Please include such a listing in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.1]*

Water rights were included in Table 1.5 (Chapter 1) of the IPP. They have been added to Table I.3 (Appendix I).

6. The plan does not appear to tabulate the local supplies used in the plan along with an explanation of the basis of the associated local supply water volumes. Please include the required information on local supplies in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.3]*

   This information is presented in detail in Appendix I (page I.22 text and Table I.6); along with a statement in Chapter 3 referring the reader to Appendix I. The text on page I.22 was clarified and expanded.

7. Please clarify how the run-of-river availabilities were calculated for municipal water users to ensure that all monthly demands are fully met for the entire simulation of the unmodified Texas Commission on Environmental Quality Water Availability Model run 3 in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.4]*

   We clarified the statement in Appendix I and Chapter 3 that run-of-river diversions were calculated using minimum monthly diversions.

8. The plan does not appear to include documentation of the public process for identifying potentially feasible water management strategies. Please include this documentation in the final, adopted regional water plan. *[31 TAC §357.12(b)]*

   We included the following documentation of the public process on page 5A.1:

   As part of Task 4B (Potentially Feasible Water Management Strategies), Region C produced a memorandum to TWDB dated November 10, 2011 with Subject "Methodology for Evaluating Water Management Strategies for the 2016 Region C Water Plan." The RCWPG approved the methodology laid out in this memo at the October 25, 2011 RCWPG public meeting (Agenda Item III.B.). Region C consultants later presented the RCWPG with a full list of Potentially Feasible Water Management Strategies at the January 26, 2015 RCWPG public meeting (Agenda Item IV.F.). RCPWG approved the potentially feasible and recommended WMSs as part of the Initially Prepared Plan at the April 20, 2015 RCWPG public meeting (Agenda Item IV.A.).

9. Page 3.2, Table 3.1: Please include a description of the basis for the estimated increase in reuse availability between 2020 and 2070. *[31 TAC §357.32(a)(1)]*

   Additional information on the mechanics of how reuse availabity increases over time was added to Chapter 3.

10. Page 5B.5,Table 5B.2; Appendix P: The plan in some instances, does not appear to include a quantitative reporting of environmental factors. For example, the summary table 5B.2 for water management strategy evaluations in Appendix P appears to present qualitative scores (e.g., "medium") but it is unclear if the scores are based upon quantitative data. Please include quantitative reporting in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(B)]*

    A quantitative rating system was developed and added to Appendix P (scale of 0-5, with each number from 0 to 5 representing a quantified impact). In Table 5B.2 (Now Table 5B.1) the reader is referred to Appendix P for information on the quantitative data used to develop the qualitative scores using in Table 5B.1.

11. Page 5B.5,Table 5B.2; Appendix P: The plan in some instances, does not appear to include a quantitative reporting of impacts to agricultural resources. For example, the summary table 5B.2 for water management strategy evaluations in Appendix P appear to present qualitative (e.g., "medium") scores but it is unclear if the scores are based upon quantitative data. Please include quantitative reporting in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(C)]*

    A quantitative rating system was developed and added to Appendix P (scale of 0-5, with each number from 0 to 5 representing a quantified impact). In Table 5B.2 (Now Table 5B.1) the reader is referred to Appendix P for information on the quantitative data used to develop the qualitative scores using in Table 5B.1.

12. Pages 5B.10, 11.16, and P.57: The plan appears to incorporate by reference Marvin Nichols strategy evaluation material from the 2011 Region C Regional Water Plan. For example, page P.57 states that "Region C is retaining the original configuration of Marvin Nichols Reservoir (at elevation 328 msl, as detailed in the 2011 Region C Water Plan) as an alternative water management strategy for the 2016 Region C Water Plan." Please include the relevant additional strategy information for that alternative strategy in the final, adopted regional water plan. *[31 TAC §357.34(e)]*

    Pages 5B.10, 11.16, and P.57 have been clarified to differentiate the two configurations of Marvin Nichols reservoir presented in this plan, as either the recommended (elevation 313.5 msl) strategy (as part of the Sulpur Basin Supplies) or the alternative strategy (elevation 328 msl). For the Marvin Nichols (328 msl) configuration that is the alternative strategy, the reader is referred to Appendix P of the 2016 Plan rather than referencing the 2011 Plan. An introduction has been added to Appendix Y to clarify which quantitiative report is associated with the each configuration of the Marvin Nichols reservoir.

13. Page 5C.10; Appendix P, Pages P.8 and P.62: In some instances, the plan appears to present incomplete water management strategy evaluations. For example, the George Parkhouse Lake (South) strategy and the Neches River Run-of-River strategy configurations. The Neches Run-of-River strategy states the preferred project "would include run-of-river diversion ...operated conjunctively with tributary storage, groundwater, and/or system operations with Lake Palestine...", however it is not clear that the strategy evaluation for the conjunctive components of the project are included. Please clarify strategy labels or include the full strategy evaluations for all alternative and recommended strategies in the final, adopted regional water plan. *[31 TAC §357.35(g)(3)]*

    Text was removed from the Appendix P write-ups and Page 5C.10 to help clarify the recommended Neches ROR strategy. Text was added to the Appendix P write-up for several "incomplete" strategy recommendations.

14. Pages 5D.285 and 5D.288: The plan does not appear to consider conservation as a potentially feasible strategy for all identified water supply needs. For example, there does not appear to be an explanation for why Navarro County Manufacturing and Steam Electric Power Water User Groups (WUGs) do not have conservation strategies. Please include documentation that conservation was considered to meet identified needs and, if not recommended, please document reason in the final, adopted regional water plan. *[31 TAC §357.34(c)(3), §357.34(f)(2)(B)]*

    Chapter 5D has been modified for steam electric WUGS with needs to reflect that "Conservation was a considered strategy for this water user group, but not recommended because the steam electric demand projections themselves considered items such as future efficiency programs."

Chapter 5D has been modified for any manufacturing WUGS with needs but no conservation strategy to reflect that "Conservation was a considered strategy for this water user group, but not recommended because of the uncertainty in the ability to implement conservation measures given the multiple entities, facilities, and various manufacturing processes that make up this WUG."

Chapter 5D has been modified for any mining WUGS with needs but no conservation strategy to reflect that "Conservation was a considered strategy for this water user group, but not recommended because of the uncertainty in the ability to implement conservation measures given the multiple companies, industries, facilities, and types of processes that make up this WUG."

Chapter 5D has been modified for any Cooke County Irrigation to reflect that "Conservation was a considered strategy for this water user group, but not recommended because of the uncertainty in the ability to implement conservation measures given the multiple entities, location, and types of irrigation that make up this WUG."

15. Pages 5E.30 and 5E.31; Appendices P and Q: Some conservation water management strategies for municipal, manufacturing, and mining WUGs appear to be combined with reuse strategies. For example, the components listed on page 5E.30 for the 'Expanded Water Conservation Package' WMS include "reuse of treated wastewater effluent." Unless the projects are directly interdependent, and reflected as such in the regional water planning database, each strategy type must be associated with separate volumes of water provided and should not be lumped together with other types of strategies. Strategy types must remain independent of one another to reflect implementation and to facilitate project prioritizations for funding. Please modify as appropriate throughout the final, adopted regional water plan and in the regional water planning database. *[31 TAC §357.34(e); Contract Exhibit 'D', Section 5.3]*

    The State's definition of conservation includes reuse (Texas Water Code §11.002(8)), (See Section 5E.2, page 5E.2). For that reason, Region C chose to <u>discuss</u> conservation and reuse in the same Chapter (5E). However, no reuse WMSs were combined with conservation WMSs in this plan. The 6th bullet item at top of Page 5E.30 has been eliminated so that it is clear that all conservation strategies have been kept separate from any reuse strategies in this plan. To avoid confusion, Appendix K has beed edited to eliminate reference to Reuse.

16. Chapter 5: Please confirm that the calculated firm yields are based upon water available during the drought of record for the strategies utilizing sources from Lake Hugo, Lake Palestine, Lake Ralph Hall and Reuse, Lake Texoma, Lower Bois d'Arc Reservoir, Neches River Run-of-River, and Toledo Bend Reservoir. Please clarify in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 3.4]*

    A statement was added on page 5B.1 confirming use of WAM 3 to calculate reservoir yields and run-of-river supplies. For Oklahoma supply, so there is no WAM, so standard hydrologic practices were used.

17. Chapter 7: The plan does not appear to provide a general description of the local drought contingency plans that involve making emergency connections between water systems or wholesale systems. Please include these descriptions of local drought contingency plans, if any, in the final, adopted regional water plan or, if no local drought contingency plans involve making emergency connections, please indicate so in the final, adopted regional water plan. *[31 TAC §357.42(e)]*

A paragraph was added to the end of Section 7.3 (Existing and Potential Emergency Interconnects) that lists the non-confidential emergency interconnects (existing or potential) that were found during Region C's review of the Drought Contingency Plans submitted to Region C.

18. Please clarify whether the plan development was guided by the principal that the designated water quality and related water uses as shown in the state water quality management plan shall be improved or maintained. *[31 TAC §358.3(19); Contract Exhibit 'C', Section 3.3].*

    A summary statement was added to the end of Section 6.1 (page 6.8) verifying that the stategies in the plan were developed based on the principle that designated water quality and related water uses as shown in the state water quality management plan shall be improved or maintained.

19. Appendix K; Appendix Q, Tables Q-10 and Q-11: Please clarify the water savings volumes associated with recommended conservation strategies that have capital costs. Please include this information in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A) and (e); Contract Exhibit 'D', Section 5.4]*

    Information on conservation strategies has been entered into DB17 such that water savings volumes associated with capital costs have been entered separately from those savings not associated with capital costs. For this reason, Region C will incorporate tables generated from DB17 output in place of the current Tables Q-10 and Q-11.

20. Appendix P, Page P.1: As noted in the plan, the plan does not appear to include a strategy evaluation for the "Reuse-General" strategy referenced in the plan on page P.1. Please include this information in the final, adopted regional water plan. *[31 TAC §357.34(d) and (e)]*

    This was prepared and submitted to TWDB on 8/26/15. Subsequently, TWDB provided the following comments to be addressed.

    a. Clarify why several reuse projects with identified firm yields do not have associated capital costs. **Added explanation for 5 projects with no capital costs.**
    b. Identify recipient(s) for each reuse project listed. **Added recipient to table.**
    c. Provide all unit costs in $/acre-foot. **Changed costs from $/thousand gallons to $/acre-foot.**
    d. Unless they are a single project, separate TRA/FTW Alliance Direct Reuse projects in order to cost out separate projects appropriately (refer to footnote **). **Added text to footnote.**
    e. Suggest to clarify in footnote (a), the definitions of county for direct and indirect reuse, where 'county' for direct reuse project is where treatment plant is located; and for indirect reuse, is where receiving water body diversion point is located (including for reservoirs). **Comment noted, no change made. See DB17 for county.**
    f. Suggest using same nomenclature for naming reuse sources and projects as was used in DB17. **Comment noted, no change made. DB17 nomenclature for reuse sources was revised without Region C input. Information in paper plan better reflects actual source description.**
    g. Suggest providing the few missing DB17 SourceId numbers and ProjectId (or WMS_ID) numbers for reuse projects listed in the table once DB17 data entry has been finalized. **Added missing DB17 SourceID numbers.**

21. Appendix P, Page P.61: The plan does not clearly state whether the Neches River Run-of-River water management strategy evaluation incorporated environmental flow requirements. Please clarify whether analyses considered environmental flow requirements in the final, adopted regional water plan. If environmental flow requirements were not considered, please present results with

environmental flow requirement considerations in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(B)]*

Text was added to Appendix P clarifing that the operation of this strategy will comply with TCEQ environmental flow standards.

22. Appendix P: The plan does not appear to include strategy evaluations for the following potentially feasible strategies as described in the contract scope of work: "Lake Livingston," "Tawakoni Pipeline," "DWU Southside (Lake Ray Hubbard) Reuse," and "DWU Lake Lewisville Reuse." Please include these strategy evaluations or explain why this contract scope of work item was not included in the final, adopted regional water plan. *[Contract Scope of Work, Task 4D Subtask 2A]*

    After final scope of work was negotiated, these strategies were either 1) far enough along that they were now considered "existing" (Tawakoni Pipeline) and didn't need to be evaulated, or 2) were replaced by other strategies for consideration (these other strategies were evaluated in place of the ones listed in the contract).

23. The technical evaluations of the water management strategies do not appear to estimate anticipated water losses of the associated strategies. Please include an estimate of water losses in the final, adopted regional water plan, for example in a format of an estimated percent loss. *[31 TAC §357.34(d)(3)(A); Contract Exhibit 'C', Section 5.1.1]*

    Per capita WUG demands, as presented in the plan, include associated losses between the water supplier and the end-user. Therefore, any project recommended to meet these demands, by default, account for these losses. It is assumed that future losses will be comparable and can be treated in a similar manner.

    Water suppliers that are WWPs only that have large scale transmission systems are treated somewhat differently. Additional demand for losses in treatment and delivery has been explicitly added for North Texas Municipal Water District and Upper Trinity Regional Water District (See Tables H.23 and H.32). Coverage of losses for the remaining WWP-only with large scale transmission (Tarrant Regional Water District) was accounted for by using safe yield rather than firm. For these reasons, the RCWPG sees additional consideration of loss as unnecessary and redundant.

24. Appendix Q, Page Q.10: The cost estimate for "New Groundwater Wells" states that costs do not include engineering or land costs. Please ensure that all cost estimates include required costing elements in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A); Contract Exhibit 'C', Sections 5.1.2 and 5.1.2.1]*

    Clarifying text was added to Appendix Q regarding engineering and land costs. Engineering was included for the cost estimates, but land costs were not included for new groundwater wells under the assumption that the new wells would be constructied on property already owned by the WUG. All of the WUGs with cost estimates for new wells already have existing wells.

25. Appendix Q, Page Q.22, Table Q-10: The plan does not appear to present a supply volume associated with the Oakwood WUG's Municipal Water Conservation water management strategy. Please present the associated supply volume for this strategy in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A), Contract Exhibit 'C', Sections 5.1.2 and 5.1.2.1]*

Oakwood is a shared WUG with Region H, with a population of less than 50 located within Region C. It was pre-determined that Region H would develop all WMS for this WUG. Comment noted, no change.

26. Appendix Q, Tables Q-12 and Q-13: The plan does not appear to present unit costs of municipal water savings in the dollars per acre-foot format as required. Please present information in the dollars per acre-foot format in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

    Costs shown in Tables Q-12 & Q-13 were in dollars per thousand gallons. They have been changed to dollars per acre-foot.

27. Appendix Q, Page Q.68, Table Q-39: The capital and annual costs for the Lake Columbia water management strategy in Table Q-39 ($241,149,000 and $53,284,000) do not appear to match the Lake Columbia costs presented in Appendix L, page 7.7-6 ($288,640,000 and $32,549,000). Please reconcile as appropriate in the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A)]*

    The costs developed for Q-39 differ from those developed for the Dallas Long Range Plan (App L) because the Region C cost of the reservoir is from a detailed cost estimate prepared for ANRA whereas, the Dallas Long Range Plan cost is from the 2011 Region I Water Plan. A footnote was added to Q-39.

28. Appendix Q, Tables Q-67 and Q-74: It appears that, in some instances, cost estimates may include retail distribution infrastructure including for the Fort Worth Direct Reuse and Frisco Direct Reuse strategies. Please remove any costs associated with retail distribution from the final, adopted regional water plan. *[31 TAC §357.34(d)(3)(A), §357.34(e); Contract Exhibit 'C', Section 5.1.2.3]*

    The majority of the cost for direct reuse projects is delivering the water from the WWTP to end users, so this is not considered retail distribution – it is a system to deliver water to major irrigation and industrial candidates. There is no supply available to anyone without these essential elements. These are not projects where water can put into the existing retail distribution system. Leaving these elements out of the projects would make these projects unworkable. Comment noted, no change.

29. Appendix Q, Table Q-46: The cost estimate includes a negative value representing an "avoided cost." Please remove cost elements that are not directly part of the required planning cost elements for the Lake Texoma desalination plant project in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

    The negative value representing an "avoided cost" has been removed from Table Q-46 in Appendix Q.

30. Appendix Q, Tables Q-18, Q-23, and Q-39: The plan in some instances, does not appear to present, separately, the estimated land purchase costs for reservoir footprint and mitigation land areas. For example, the Sulphur Basin Supply Strategy, Lower Bois d'Arc Creek Reservoir Strategy, and Lake Columbia Strategies do not separately present the estimated cost of conservation pool or mitigation land acreage. Please include land areas and estimated costs, separately, in the final, adopted regional water plan. *[Contract Exhibit 'C', Section 5.1.2]*

    Note: Region C's interpertation of *Contract Exhibit 'C', Section 5.1.2* is that a line item for the land acquisition associated with the reservoir should be included, but the land acquisition for mitigation can be included as one line item with mitigation.

Tables Q-16, Q-17, Q-18: The text of line items were edited to clarify each type of land cost.

Table Q-23: The land cost for the reservoir is on the first page of Table Q-23 under the headings of "Dam & Reservoir, Land and Surveying"; the land cost for mitigation is on the second page of Table Q-23 under the headings of "Permitting and Mitigation of reservoir and terminal storage, Land and Easement"; no change needed.

Table Q-32, Q-32A, Q-33, Q-33A, Q-39, Q-50, and Q-52: Cost estimate includes a line item for land acquisition for the reservoir and a line item for mitigation (which includes land acquisition); no change needed.

31. Appendix Q, Table Q.54: The project components and costs include $600,000 for "equipment/vehicle storage" and $4,250,000 for "foundation improvements." Water management strategy components included in regional water plans must be limited to the infrastructure required to develop and convey increased water supplies from sources and to treat the water for end user requirements. Please remove these and other costs that are not associated with providing additional supplies to WUGs from the final, adopted regional water plan. *[TAC §357.34(d)(3)(A); Contract Exhibit 'C', Section 5.1.2 and Section 5.1.2.3]*

    This cost estimate (Q-54) is for Upper Trinity Regional Water District's Water Capital Improvement Plan (CIP). All of these components are necessary in order for UTRWD to be able to develop, treat, and convey increased water supplies from sources to treated water customers. Costs for a number of line items that are not allowable under the TWDB Exhibit C guidelines have removed.

Level 2:	**Comments and suggestions for consideration that may improve the readability and overall understanding of the regional water plan.**

1. Section 3.3, Page 3.9; Appendix I, Page I.16: Please consider providing a complete description of the groundwater availability methodology employed for non-relevant portions of the Nacatoch Aquifer and "Other" aquifer groundwater sources in the final, adopted regional water plan.

    MAG values were used for Nacatoch Aquifer supplies. Regarding "Other" aquifer supplies, the text explains the values are based on historical pumping data from the TRWD. No additional explanation was added to the text.

2. Page 3.11, Table 3.5: Please consider including a line item for the non-relevant portion of the Nacatoch Aquifer in Henderson County in the final, adopted regional water plan.

    Region C did not show any supply from non-relevant portions of the Nacatoch Aquifer in Henderston County. MAG values were used for Nacatoch Aqufier supplies.

3. Page 5E.49, Item (3): Please consider correcting the URL reference to:

    http://www.texas.gov/conservation/doc/SB181Guidance.pdf in the final, adopted regional water plan.

    Corrected the URL reference.

Texas Parks & Wildlife Summarized Comments on 2016 Initially Prepared Region C Water Plan with Responses

1. Few details given in Chapter 1 on how threats to natural resources will be addressed.
   a. In Chapter 1 (Section 1.12), it would be appropriate to reference Chapter 6 (Section 6.4.1). This section provides some descriptions of ways in which threats can be minimized, including water conservation, reuse, full utilization of surface supplies, and federal and state permitting requirements.
   b. Section 1.10.3 (page 1.35), Table 1.14 (pages 1.36-1.37), and Table 2 in Appendix I (pages 4-7) provide information related to threatened and endangered species. Recent updates have been made to the TPWD County Lists of Protected Species and Species of Greatest Conservation Need (SGCN).
      i. The Smalleye Shiner and Sharpnose Shiner are now listed as Federally Endangered species and <u>should be included in the table.</u>
      ii. The Texas Pigtoe, Texas Heelsplinter, Texas Fawnsfoot, Louisiana Pigtoe, Southern Hickorynut, and Sandbank Pocketbook are now State Threatened and <u>should be included in the table.</u>
      iii. The Fawnsfoot, Wabash Pigtoe, Common Pimpleback, Little Spectaclecase, Wartyback, and White Heelsplitter are no longer considered SGCN and <u>can be taken off the tables.</u>

<u>Response 1:</u>
Edited Section 1.12 to add reference to Section 6.4. Edited Tables 1.13 and 1.14 Threatened and Endangered Species listings to reflect specific changes in item 1.b. above.
Regarding the "Table 2 in Appendix I (pages 4-7)": the Appendix I that TPWD is referring to is a portion of a report on Quantitative Impacts of Marvin Nichols that was contained in Appendix Y of the IPP. Since this report has been previously finalized and was only included as a reference document to the IPP, no updates will be made to this section.

2. Adopted Desired Future Conditions (DFCs) for the primary aquifer in Region C, the Trinity Aquifer, do no address protection of springs or groundwater surface water interaction. Ultimately TPWD would like to See DFCs adopted to protect these features.

<u>Response 2:</u>
Regional Water Planning Groups do not have input in the Groundwater Management Area and Groundwater Conservation District process of selecting Desired Future Conditions, but encourages those entities to consider this comment when setting DFCs. No change made in the report.

3. TPWD recognizes the concerted effort to include more available quantitative environmental impact information in the 2016 IPP and encourages Region C to continue to improve this quantitative reports as information is available. Some suggested additions are:
   a. Please attempt to include estimates on linear stream distances impacted or inundated.
   b. Environmental flow impact data, including changes in downstream mean annual flow and changes in monthly or seasonal flows, is available for Lower Bois d'Arc Creek Reservoir WMS.
   c. Appendix P (page P.34) appears to be missing a table under WMS Evaluation for Lake Columbia.

d. Appendices G, H, and I include interim environmental assessment information related to the Sulphur Basin Supplies WMS but the quantitative impact analysis on natural resources is not yet available to review.
e. TPWD encourages enhanced coordination regarding proposed reservoir project and the Sulphur Basin Supplies WMS in an effort to avoid, minimize, and mitigate impacts to fish and wildlife resources, including the White Oak Creek Wildlife Management Area. Attachment A provided by TPWD summarizes information regarding potential impacts of raising the elevation of Wright Patman Lake.

Response 3:

a. Region C will strive to add more quantitative information in the next regional plan, including linear stream distances. No change made to the report.
b. While the streamflow information suggested in TPWD's comment has been calculated by others as part of on-going permitting activities, a decision was made not to include this information in the regional plan because this level of detail is not required for other strategies. In addition, this data could be subject to change during the permitting process.
c. Appendix P has been restructured so that quantitative data on each strategy has been included in Tables P.3 and P.4 rather than on the evaluation write-ups. Lake Columbia information is included in Tables P.3 and P.4.
d. Quantitative Marvin Nichols 313.5 report published shortly after TPWD comment letter received, so it is now available for their review. No further action needed.
e. Quantitative information for Wright Patman has now been included in Tables P.3 and P.4 as part of the Sulphur Basin Supplies Strategy.

4. Appendix I of IPP includes information regarding threatened and endangered species that might be impacted by the Sulphur Basin Supplies WMS. TPWD lists several species they feel should be part of this list and give web reference for further information.

Response 4:

In this comment, the Appendix I that TPWD is referring to is a portion of a report on Quantitative Impacts of Marvin Nichols that was contained in Appendix Y of the IPP. Since this report has been previously finalized and was only included as a reference document to the IPP, no updates will be made to this section.

5. TPWD commends Region C in the reduction in overall gpcd from 200 to 165 from the 2011 Plan to the 2016 IPP. TPWD encourages further progress towards meeting the statewide goal of 140 gpcd.

Response 5:

Region C appreciates TPWD's recognition of conservation efforts. Region C will continue to encourage additional conservation efforts. No change needed in the report.

6. Section 1.11.3 describes invasive species. Please include updated information to help clarify the present state of zebra mussels in Texas. The present known distribution (as of July 27, 2015) of zebra mussels in Texas reservoirs is: Texoma, Ray Roberts, Lewisville, Bridgeport, Lavon, Waco, and Belton. Zebra mussels have also been found on isolated occasions in the Red River below Texoma, the Elm Fork of the Trinity River below Lake Ray Roberts, Sister Grove Creek above Lake Lavon, and a boat with zebra mussels attached was found in Lake Ray Hubbard. To prevent the transmission of invasive species TPWD recommends avoiding transport of water from basins where these species are known to occur. If this is unavoidable these transfers of water should be directly to water treatment plants.

Response 6:
Section 1.11.3 has been modified with updated locations of known Zebra Mussels as of July 27 per TPWD list. The following statement was added: "To avoid further spread of this invasive species, strategies in this plan that involve transfer of water from basins or reservoirs with known presence of zebra mussels have been modified to transfer water directly to water treatment plants."

Responses to Public Comments

The Region C Water Planning Group appreciates each comment it received from the public regarding the Initially Prepared Plan and appreciates those individuals and organizations who took the time to thoughtfully consider the plan and to present ideas to improve upon the plan.

- Oran Caudle
    - We thank Mr. Caudle for his report and comments on the IPP and his innovative ideas for securing the future water supply of Texas. Mr. Caudle's comments focused on two key aspects of the plan: 1) proposal of five new water management strategies, and 2) issues with the Marvin Nichols cost estimate. We appreciate the opportunity to address both concerns. Below we outline some key reasons the five proposed strategies are infeasible or are less feasible than the strategies already included in the Region C Plan, as well as our response to the cost estimate issues.
        - *Patman/Chapman system of Reservoirs Option A*. **Response:** In this strategy, Lake Wright Patman is reallocated to 231 ft-msl, two 124-inch pipelines connect Lake Wright Patman to Lake Chapman, two 124-inch pipelines connect Lake Chapman to Lake Lavon, two 102-inch pipelines connect Lake Lavon to Lake Lewisville, and finally a 96-inch pipeline connects Lake Lewisville to Eagle Mountain Lake. As part of this strategy, Mr. Caudle proposes creating a run-of-river system for the following lakes: Lavon, Hubbard, Lewisville, Eagle Mountain, and Worth. With the exception of Lake Wright Patman, the lakes involved in this strategy, including the run-of-river ones, are fully allocated so they would not contribute additional yield to the strategy. Therefore the yield for this strategy comes entirely from Lake Wright Patman. Mr. Caudle states that "a Lake Patman elevation of 231 feet will produce the additional yield needed to protect the current senior water rights of the City of Texarkana, while providing 620,000 acre-feet for Region C." However, according to the Sulphur River Basin Feasibility Study Summary Narrative (Dec 2014), the stand-alone priority-based firm yield of Lake Patman at 232.5 ft-msl is 461,000 ac-ft/yr based on TCEQ's Sulphur WAM model without the proposed Marvin Nichols reservoir upstream. Of this total, 180,000 ac-ft/yr is already allocated to Texarkana, leaving 281,000 ac-ft/yr of new supply. (It should be noted that if the proposed Marvin Nichols reservoir is upstream, the incremental yield gained by raising Wright Patman is less than the 281,000 ac-ft/yr cited here. See Sulphur Basin Supplies strategy in this plan.) The yield at 231 ft-msl would be less than this. Therefore, the

proposed strategy relying on the supply from Wright Patman reallocation alone cannot meet the required demand in Region C.

- *Patman/Chapman system of Reservoirs Option A*. **Response:** Option B is similar to Option A but includes connections to two additional lakes: Lake Ray Roberts and Lake Bridgeport. Like the lakes discussed in Option A, these two lakes are also fully allocated. So again the entire yield of the project would come from Lake Wright Patman, which alone does not have sufficient yield to meet the needs of Region C.
- *The Northeast Texas Canal (NTC)*. **Response:** Mr. Caudle identified multiple important benefits of canals, including an asserted lower cost per mile to build and lower electricity usage. In Texas, large canals have proved economical on the flat coastal plains. In other part of the state with greater variations in elevation, canals have not proved to be as cost effective as pipelines and have not been implemented. We believe that the general assumption that pipelines will prove to be the preferred method of transport for Region C is correct. In general compared to pipelines, canals have much higher evaporative losses and other carriage losses (e.g. leakage, theft), canal siting is more sensitive to surface elevations, crossings are more difficult (especially in developed areas), and public safety and security is a bigger concern.

  The NTC proposed by Mr. Caudle is a 2,000 cubic-foot per second (cfs) canal from Lake Wright Patman to Lake Ray Roberts, then a 1,200 cfs canal from Lake Ray Roberts to Lake Bridgeport. Mr. Caudle claimed that the NTC could provide 850,000 acre-feet per year to Region C, but he does not indicate the source of this supply. With the exception of Lake Wright Patman, the lakes connected by this strategy (i.e. Chapman, Tawakoni, Fork, Lavon, Hubbard, Lewisville, Grapevine, Ray Roberts, Bridgeport, Eagle Mountain and Worth) are fully allocated. The 2016 Region D IPP shows that Lake O' The Pines will be fully allocated in the future. So again the entire yield of the project would come from Lake Wright Patman at 231 ft-msl, which alone does not have sufficient yield to meet the needs of Region C.
- *The East Texas Canal (ETC)*. **Response:** The ETC option connects the following lakes with a series of canals: Toledo Bend, Sam Rayburn, Steinhagen, and Livingston. Mr. Caudle claimed that the ETC could provide 1,000,000 acre-feet per year to Region C: 700,000 ac-ft/yr is expected to come from Toledo Bend, 100,000 ac-ft/yr from Lake Sam Rayburn, 100,000 ac-ft/yr from Lake Steinhagen, and 100,000 ac-ft/yr from Lake Livingston.

  The unallocated supply out of Toledo Bend in 2070 is only 19,395 ac-ft/yr, plus the 100,000 ac-ft/yr allocated to Region C, for a total of 119,395 ac-ft/yr which is far less than the 700,000 ac-ft/yr required from the reservoir in the ETC strategy. Lake Livingston is owned by TRA and the City of Houston. Houston's supply is fully allocated after 2020, but TRA may have some available yield. If TRA is unwilling or unable to contract for the 100,000 ac-ft/yr called for in the ETC strategy then the available yield of the project would be further reduced. For these reasons, this strategy does not have sufficient yield to meet the needs of Region C

  While most of the lakes in the above strategies are already fully allocated, they could theoretically be used to pass water in the way suggested. However, passing water through these lakes is complicated by the fact that they are owned by multiple entities and environmental concerns. The applicable water rights and permits would need to be amended to allow for such pass-throughs, and the new water rights could be subject to additional environmental flow requirements as a result. The mixing of waters from various sources is also an important concern, and more detailed studies would need to be performed on the effects on water quality in the receiving water bodies and other environmental considerations (e.g. invasive species).

- *The Arkansas-Texas Canal (ATC)*. **Response:** The ATC option is an updated version of a strategy originally studied in a 1976 TWDB Report entitled "An Assessment of Surface Water Supplies of Arkansas: with computations of surplus supplies and a conceptual plan for import to Texas." This strategy draws from three rivers in Arkansas (White, Arkansas, and Ouachita) using a series of canals and pipelines before finally emptying into Lake Wright Patman. Mr. Caudle pointed out some key benefits of this strategy, namely diversification of water sources to decrease vulnerability to drought, and providing renewable surface water supplies to irrigators in Arkansas that currently rely on diminishing groundwater resources. The ATC is proposed to supplement NTC option described above because, by itself, it is not practical due to the high cost and relatively low yield. To make use of surplus waters from these Arkansas rivers, Mr. Caudle noted that a Title III interstate permit would have to be submitted to the Arkansas Natural Resources Commission and approved by the Arkansas Legislature. Additional studies regarding the inter-basin water transfers and their effect on water quality and other environmental considerations would also be required.
- *Marvin Nichols Cost Estimate*. **Response:** Mr. Caudle's concerns with the Marvin Nichols Reservoir cost estimate focus on 6 key aspects: 1) the increase in estimated costs for the reservoir from the 2001 Region C Plan through to the 2016 IPP, 2) TWDB guidelines for developing costs, 3) concerns about underestimation of the mitigation rate, 4) concerns about underestimation of land acquisition costs, 5) concerns about underestimation of archaeological impacts, and 6) concerns about underestimation of the amount of free board.

  The responses to these concerns are as follows: 1) Cost estimates change with changes to the cost of materials and construction and the development of additional information. It would be indeed troubling if the estimate in the 2016 plan were the same as the estimate in the 2001 plan. 2) TWDB guidelines are followed in order to provide comparable costs for all strategies. 3) The current estimated mitigation rate is based on best available current information. Contingencies will allow for more mitigation if needed. 4) The current estimated land cost is based on best available current information, data on real estate values by county developed and maintained by Real Estate Center at Texas A&M University. 5) Archaeological impacts are accurately stated based on currently available information. 6) Freeboard is based on detailed analysis – more detailed than is typical in preliminary planning – and we believe that it is correct.

  The goal of TWDB guidelines for developing costs for the purposes of regional water planning is to ensure that strategies are comparable to each other (e.g. all based on the same unit costs and methodologies for calculating mitigation, contingencies, etc.). In this sense, these are planning-level costs for comparison purposes. A more detailed design-level cost is developed after a strategy is selected for further consideration.

- Clean Water Fund
    - Strengthen municipal water conservation programs. **Response:** Response regarding conservation is presented at the end of this appendix under "General Comments".
    - Implement a more aggressive and consistent plan to reduce average water consumption in each city to 140 gpcd by 2030. **Response:** Response regarding the State Goal of 140 gpcd is presented at the end of this appendix under "General Comments".
    - Incorporate drought contingency plans as supply strategies and factor them in to demand forecasts. **Response:** Response regarding drought contingency plans is presented at the end of this appendix under "General Comments".
    - Increase leak detection and repair programs. **Response:** Response regarding reducing water loss is presented at the end of this appendix under "General Comments".
    - Explore the potential benefits of Aquifer Storage and Recovery. **Response:** Response regarding ASR is presented at the end of this appendix under "General Comments".
    - Utilize existing reservoirs before proposing new reservoirs. **Response:** Comment noted.
- Dallas Water Utilities
    - General comparison of Region C Plan to Dallas Long Range Plan. **Response:** Comments noted.
    - Table 1. Summary of Significant Inconsistencies. **Response:** Changes incorporated throughout report as appropriate. See below for details on specific items listed in Table 1.
        - Page 3.7 of IPP. Include Main Stem Balancing Reservoir in list of indirect reuse projects. **Response:** This was not added. Page 3.7 is discussing currently available reuse projects implemented since the 2011 Plan. The Main Stem Balancing Reservoir is not a current reuse supply.
        - Page 5A.11. Include Neches Run-of-River as a WMS requiring an interbasin transfer. **Response:** Neches Run-of-River was added to the list of strategies requiring an interbasin transfer in Section 5A.1.13.
        - Table 5A.3. The maximum IBT amounts for Lake Palestine and Neches Run-of-River Supplies are incorrectly shown. **Response:** Table 5A.3 was corrected to show to maximum IBT from Lake Palestine as 114,337 acre-feet per year and the maximum IBT from Neches Run-of-River as 47,250 acre-feet per year.
        - Page 5B.14. Text on page 5B.14 incorrectly states that the Neches Run-of-River strategy includes conjunctive use with groundwater or tributary storage. **Response:** This statement was referring to the potential alternatives summarized in the Upper Neches River Municipal Water Authority (UNRMWA) Water Supply Project Feasibility Study. The reference to groundwater and tributary storage was removed to avoid confusion.
        - Appendix P – Neches Run-of-River. **Response:** Text was revised to address all comments related to this write-up.

        - Table Q-38. Table incorrectly shows DWU as the probable owner. The probable owner should be UNRMWA. **Response:** Table was revised to show the probable owner as UNRMWA and/or DWU.
        - Table Q-17. The assumed Dallas ownership of the project is incorrect. **Response:** The assumed Dallas ownership of the project was adjusted to account for all of the potential participants, not just those considering the strategy as an alternative strategy. The Dallas participation was changed from 82.1% to 23.4%.
    - Letter of Clarification of Sulphur Basin Supplies Alternate Water Supply Recommendation. **Response:** Confirmation appreciated and reflected in plan.
- Fort Worth
    - Request to change conservation strategy cost to include Water Conservation and Condition Assessment Program costs. **Response:** Requested change made.
- Garland Democratic Voice
    - Two newsletter articles in opposition to proposed Marvin Nichols Reservoir. **Response:** Comments noted.
- Sierra Club
    - Calculation of Water Demands, Available Water Supplies, and Water "Needs". **Response:** Region C acknowledges Sierra Club's differing opinion on Region C's use of recent years' average per capita rather than using year 2011 use as base per capita (for 27% of WUGs), but Region C maintains that this approach is appropriate in those cases. Dallas and Denton are mentioned as having used the average of recent years to calculate base year gpcd, however this is not the case. A corrected TWDB calculation of the 2011 historical gpcd was used as the base year gpcd for those two cities. Other comments noted.
    - Water Conservation as a Water Management Strategy. **Response:** Region C appreciates the acknowledgment of Region C's conservation efforts and accomplishments. Additional response regarding conservation is presented at the end of this appendix under "General Comments".
    - Water Management Strategies Involving New Surface Water Reservoirs. **Response:** Additional response regarding "no new reservoirs" is presented at the end of this appendix under "General Comments". Comments noted.
    - Alternative Water Management Strategies Involving Infrastructure (particularly Aquifer Storage and Recovery). **Response:** Additional information was added to Plan on Aquifer Storage and Recovery in Chapter 5A, and further response regarding ASR is presented at the end of this appendix under "General Comments".
    - Drought Management/Response. **Response:** Response regarding drought contingency plans and reducing water loss is presented at the end of this appendix under "General Comments".
- Tarrant Regional Water District.
    - Letter of Clarification of Sulphur Basin Supplies Alternate Water Supply Recommendation. **Response:** Confirmation appreciated and reflected in plan.

- Texas Conservation Alliance
    - Value of Current Supply. The comment asserts that if the region as a whole can bring the average gpcd to 141, the current supply will be adequate to meet 2070 demands. **Response:** The referenced theoretical demand (14.3M people x 141 gpcd=2,266,113 af/y) would only be the municipal demand, and does not include non-municipal demand for manufacturing, steam electric power, irrigation, mining, and livestock. Even if that theoretical municipal demand were the only demand, the current supply of 2,272,150 af/y would only provide a safety factor of 1.0027. This is an unacceptably low margin of safety by any standard engineering practices. Further response regarding the State Goal of 140 gpcd is presented at the end of this Appendix under General Comments.
    - Municipal Reuse-Recycling. The comments states that "The IPP anticipates 429,018 af/y of reuse in 2070, but in principle there is no reason why all, or almost all return flows could not be used as water supply" and "A Minimum of 80% reuse is a realistic goal". **Response:**
        - The referenced 2070 reuse supply (427,011 af/y) is only the supply from existing (currently operating) reuse projects (Table 5E.7). An additional 355,118 af/y of reuse projects are planned (Table 5E.8), bringing the total 2070 reuse amount to ~782,000 af/y.
        - The assertion by TCA is that 50% (1.3M of 2.6M af/y) of the water that is used would be returned to wastewater treatment plants, treated, and then be available to be reused. While this 50% has been an assumed standard in the past, recent analysis of return flow data performed by Region C in this round of planning indicate that during the recent drought the percentage of return flow was lower than 50%.
        - The assumption by TCA is that 100% of return flow (~1.3M af/y) would be available for reuse. This does not account for the requirement that some amount of return flow needs to be returned to the natural waterways to support aquatic life. TCEQ typically requires a certain amount of bypass flows (ex, 30% bypass at TRWD wetlands projects) and/or only permits a certain percentage of available return flows to be reused (percentages vary, but are typically around 60% based on most recent permits granted).
        - Region C's ~782,000 af/y of reuse represents about 60% of the available return flow. Available return flow is assumed to be ~1.32M af/y (45% of total demand of 2,929,880 af/y). Region C's 782,000 af/y of reuse is consistent with the amount that could reasonably be expected to be permitted.
        - Future Yield of Area Reservoirs. **Response:** Most rain that falls in urbanized DFW is not within the watershed of any Region C water supply reservoirs. Most run-off from Region C urbanized area is in the Lake Livingston watershed in Region H (see article in Nov 2014 Region C newsletter, *Where the Rain Falls Really Matters*). Therefore, the future yield of existing reservoirs in Region C is not likely to increase due to urbanization within these watersheds.
    - Special Significance of Cedar Creek and Richland-Chambers. **Response:**
        - TRWD already makes additional use of Richland-Chambers (R-C) Reservoir through their existing wetlands project which diverts return flow from Trinity River into wetlands and then into Richland-Chambers Reservoir. 2070 WAM yield of R-C is 167,100 af/y and the reuse/wetland project provides an additional 100,465 af/y of supply.

- TRWD plans to make additional use of Cedar Reservoir through their planned wetlands project which will divert return flow from Trinity River into wetlands and then into Cedar Creek Reservoir. 2070 WAM yield of Cedar Creek is 151,783 af/y and the planned reuse/wetland project will provide an additional 88,059 af/y of supply.
    - Combined currently permitted yield from these two lakes including associated reuse projects is over 507,000 af/y.
    - The TCA assertion is "...if all flows above 500 cubic feet per second (cfs) were diverted ... the two lakes would have a combined firm yield of at least a million AFY." This assertion appears to be based on records from one USGS streamflow gage record rather than the TCEQ WAM analysis (required by TWDB for regional planning) which considers downstream senior water rights, particularly Lake Livingston. Based on TCEQ WAM analysis, there is very little unpermitted firm yield supply in the Trinity River Basin in Region C.
    - A Region C WWP is currently attempting to get an "X-flow" permit for one of its reservoirs, which would enable the capture of additional flood flows during times of high flow. However, TCEQ does not consider this type of permit to be "firm" supply and TWDB does not allow use of it as a reliable supply in regional planning.
  - Lake Texoma – a Cost-Effective Source of Supply **Response:** Comments noted. Region C has provided analysis of this strategy in Chapter 5B.
  - Marvin Nichols Reservoir – the Most Destructive Project in the Plan. **Response:** Comments noted.
  - Sulphur Basin Supplies. TCA asks for a breakdown of how much water is developed under the proposed "Sulphur Basin Supplies" is from Wright Patman and how much is from the 42,000-acre Marvin Nichols. **Response:** The report has been modified to include this information. See Chapters 5A and 5B as well as Appendix P.
  - Lake Tehuacana. **Response:** Comments noted.
  - Lower Bois d'Arc Creek Reservoir, Ralph Hall Lake, Neches Run-of-the-River Project, Lake Columbia. **Response:** Comments noted.
- Upper Neches River Municipal Water Authority
  - Page 5A.11 Include Neches ROR needing IBT. **Response:** Neches ROR added to text.
  - Page 5A.12 Reflect 114,337 af/y of Palestine as already permitted IBT. **Response:** Palestine maximum amount in Table 5A.3 changed to the permitted amount of 114,337 af/y with the note that the 2030 WAM yield is 110,670 af/y. This lower amount is the supply available to Dallas Water Utilities the first decade online.
  - Page 5A.13 Clarify Neches ROR in Table 5A.3. **Response:** Note added in table regarding existing 18,000 af/y of interbasin transfer that is permitted.
  - Page 5A.16 Confirm amount for Lake Palestine. **Response:** The amount shown as available to Region C from Palestine is 110,670 af/y, which is the WAM yield for the first decade Palestine will be online (2030). Even though the permitted amount is 114,337 af/y, TWDB requires that available supply be limited to the WAM yield.
  - Page 5A.16 Revise amount of Neches ROR for Region C. **Response:** Amount corrected to 47,250 af/y.
  - Page 5A.17 Delete duplicative line in Table 5A.4 for Neches ROR. **Response:** Deleted duplicate row from table.

- Page 5B.6 Neches ROR qualitative impacts are too high. **Response:** Table 5B.2 as well as Tables P.3 and P.4 have been updated to reflect the Neches Run-of-River strategy that does not include an off-channel reservoir.
- Page 5B.14 Delete portion of description for Neches ROR. **Response:** Description edited to remove reference to tributary storage and groundwater.
- Page 5C.10 Delete portion of description for Neches ROR. **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
- Page 8.12 In the first paragraph regarding Lake Fastrill, delete the final sentence. **Response:** Final sentence deleted.
- Pages P.61 through P.64 Revise Tech Memo for Neches ROR
  - Page P.61 2013 Dollars (not 2011 Dollars). **Response:** Corrected.
  - Page P.61 Revise last sentence in 2nd paragraph. **Response:** Sentence deleted per Dallas Water Utilities Comment.
  - Page P.61 In last sentence delete portion of description. **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
  - Page P.62 Replace 40 MGD with 42 MGD. **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
  - Page P.62 Edit text for tributary storage Alternate option. **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
  - Page P.63 Edit text for groundwater Alternate option. **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
  - Page P.63 Replace "2014 Report" with "February 2015 HDR Report". **Response:** Text edited to remove portion of the description of this project (per Dallas Water Utilities comment).
  - Page P.63 Delete reference to Nueces Off-Channel Reservoir. **Response:** Table removed.
  - Page P.64 Revise Evaluation to reflect this strategy does not include off-channel reservoir. **Response** Tables P.3 and P.4 have been updated to reflect the Neches Run-of-River strategy that does not include an off-channel reservoir.
- Page P.65 Include references to 2 reports. **Response:** References included.
- Page Q.67 Revise Table Q-38 title and content. **Response:** Revised probable owner and footnote.

- Upper Trinity Regional Water District
  - Page 5C.57 Correct the name of Sulphur River Municipal Water District and Upper Trinity Regional Water District. **Response:** Corrected.
  - Page 5C.86 Clarify relationship of 3 WUGs listed under Mustang SUD. **Response:** Text edited to reflect correct relationship.

- Page H.46 Clarify relationship of 3 WUGs listed under Mustang SUD. **Response:** A footnote has been added to Table H.32 to clarify that these 3 WUGs are wholesale customers of UTRWD, but that Mustang SUD is the contract operator of the systems.
- Page H.47 Correct 2020 "Supplies Less Demand" value. **Response:** Corrected.

General Comments

- Need more conservation and more efficient use of water. **Response:** The Region C Water Planning Group (RCWPG) desires to see the water user groups in Region C achieve a high level of water conservation and efficiency in water systems. Water in an important resource that is vital to the economy of Region C and the State, and Region C desires to use it efficiently. Much progress has already been made, demonstrated by a number of factors. Between the 2011 Plan and 2016 Plan, Region C's projected 2060 municipal per capita use was reduced from 200 to 165 gpcd, and further reduced to 161 gpcd by 2070. By 2070, Region C anticipates almost 250,000 acre-feet per year of water savings for "build in" water conservation items associated with plumbing fixtures and efficient appliances (Table 5E.9). In addition, Region C anticipates another 135,000 acre-feet per year of water savings from "active" conservation efforts (Table 5E.9). RCWPG recognizes that future technologies may be developed that will enable even more conservation and RCWPG is open to adopting those technologies as strategies in future plans as they become practicable and implementable.
- Need to achieve state goal of 140 gpcd. **Response:** This comment refers to the goal developed by the Water Conservation Implementation Task Force in 2004 for municipal per capita water use (See Section 1.6.3 of this plan). It is important to understand that this 140 gpcd goal is for an average (not dry) year, and that water use originating from reuse projects is not to be included when computing the per capita use (ie, credit for reuse). Regional planning gpcd's are for dry year (per TWDB guidelines), do not account for future conservation strategy savings, and do not have reuse credited to them. Were Region C's municipal use to be calculated in the way the Task Fork recommended (for an average year, giving credit for the region's large amount of reuse) it would meet the target of 140 gpcd. (Table 5E.10 of this plan shows the projected normal year municipal gpcd with conservation and reuse to be <u>less than 100 gpcd</u>). Region C's ability to meet this target is particularly noteworthy given the large amount of non-residential municipal use (commercial and retail) that is included in Region C's municipal demand as compared to other regions. Examples of this non-residential municipal demand are: DFW Airport, Dallas and Fort Worth Convention Centers, multiple professional sporting facilities (5+), major retail areas (Galleria, Dallas Market, Grapevine Mills, etc), major hospital/medical facilities (UT Southwestern, Baylor, etc), large universities (TCU, SMU, UT Dallas, UNT), and national corporate offices (Exxon Mobil, AT&T, American Airlines, Texas Instruments, etc). It is also important to note that much of the Metroplex's commercial/retail serves population visiting Region C from other regions.
- Better enforcement of irrigation restrictions. **Response:** The RCWPG supports and encourages the efforts for better enforcement of existing watering restrictions including time-of-day and day of the week watering.

- Reduce water losses (to 10% like Region H). **Response:** Water Loss Reduction is a conservation strategy for any Region C WUGs that had high water losses. Each WUG's historical water loss was used to determine the amount of water that could be saved through replacement of water lines that were a significant source of water loss. More detail on this is provided in Appendix K. Table Q-10 has also been expanded to show how much conservation savings is attributed to the water loss prevention strategy for each WUGs.
- Drought contingency plans. **Response:** RCWPG maintains its position regarding Drought Contingency Plans as presented in Chapter 7 (Section 7.6)
- Perceived low percentage of WUGs implementing conservation. **Response:** There appears to be a general misunderstanding by the public of the conservation survey data presented in Chapter 5E. In future plans, Region C wills strive to present this information more clearly. An example of this misinterpretation follows. *Table 5E.6 presents results of a Region C survey of water retailers related to conservation efforts. The implementation percentages presented in this table represent the percentage of those entities responding to the survey, not the percentages of all water retailers or percentage of population in Region C that implement conservation strategies. For example, Table 5E.6 shows that 43% of the entities responding to the survey have implemented Time-of-Day Watering Restrictions. This does not equate to only 43% of all Region C water retailers that implement this strategy, nor does it equate to only 43% of the population implementing this strategy. For example, while two entities (Fort Worth and Dallas) represent only 1% of the water retailers responding to the survey (2 of 148), these two entities represent about 30% of the Region's population. Both of these entities have implemented significant watering restrictions, as have most of the larger water retailers in Region C.*
- More reuse/water recycling. **Response:** Reuse (or water recycling) is a major strategy for Region C. Table 5E.7 (existing reuse projects) and Table 5E.8 (reuse strategies) show that Region C will have about 784,000 acre-feet of reuse by 2070. This represents 27% of the overall water use that will be recycled. This exceeds all other regions in the state. RCWPG encourages further reuse of water as is practicable and feasible.
- No New Reservoirs. **Response:** Region C water suppliers do not enter into the planning of reservoirs lightly because they understand the difficulty of developing such projects and the impacts they have. Region C water suppliers would not undertake these reservoir projects if other alternatives were more feasible. Region C water suppliers have an obligation to provide water needed for the future of this region and for the good of the entire state, and have determined that these reservoirs, along with other selected strategies, are necessary to adequately provide for the future.
- Stop further urbanization. **Response:** Region C Water Planning Group and water suppliers do not have control over future growth. At the same time, the RCWPG does have an obligation to plan for the growth that is anticipated.
- Utilize ASR (Aquifer Storage and Recovery). **Response:** An expanded description of ASR will be included in Section 5A.1.11 of the final plan. While several ongoing feasibility studies are being performed within Region C, those studies are not advanced enough to determine the suitability of ASR as a source of supply for Region C at this time. Studies of ASR should continue, and pilot

projects should be implemented if the strategy appears to be promising. ASR projects determined to be viable should be added to future Regional Water Plans.

- Utilize Lake O' the Pines; comments assert that 89,600 af/y is available. **Response:** Based on strategies presented in Region D's 2016 IPP for the Northeast Texas Municipal Water District (Lake O' The Pines water right holder), it is the understanding of Region C that Lake O' The Pines will be fully committed to Region D's future water demands. Table 5A.1 of the Region C Plan has been updated to clarify this.
- Ban/curtail oil fracking due to high water use. **Response:** Mining water use makes up only 2.3% of the total projected demand in 2020 and only 1.5% in 2070. This mining use includes oil and gas fracking as well as other mining operations such as lignite mining for power plants and sand and gravel operations. The 2016 Region C Water Plan does contain several water management strategies of using reuse/recycled water to meet mining demands.
- Plan does not recognize or study the impacts of climate change. **Response:** Although not explicitly stated, the 2016 plan does address the effects of climate change. The use of safe yield rather than firm yield for both Dallas and Tarrant Regional Water District reservoirs is the chosen response to the potential effects of climate change. Future Region C Plans may further refine the anticipated effects of climate change and adjust supplies and strategies accordingly.

Other Changes to the IPP

- Addition of Socio-Economic Analysis by TWDB
- Addition of Infrastructure Funding report generated from Survey of Water Suppliers
- Addition of Sulphur River Basin Authority as a Wholesale Water Provider as designated by Region C Water Planning Group on September 28, 2015.
- Addition of Section 10.6 related to the 2016 Interregional Conflict between Region C and Region D.
- Revision of the Sulphur Basin Supplies strategy pursuant to the mediation agreement reached as part of the 2016 Interregional Conflict between Region C and Region D.
- Addition of Interim 2060 strategy for Tarrant Regional Water District to avoid unmet need precipitated by Interregional Conflict mediation agreement.
- Various editorial changes.
- Addition of Tables required by Texas Water Development Board.
- Revision of some cost estimates.

Appendix X

Appendix X

Comparison of the Region C Water Plan to Applicable Water Planning Regulations

APPENDIX X

COMPARISON OF THE REGION C WATER PLAN TO APPLICABLE WATER PLANNING REGULATIONS

The purpose of this appendix is to demonstrate that this plan has addressed required TWDB Regional Planning rules and to facilitate the determination of how the Regional Water Plan is consistent with the long-term protection of the water, agricultural, and natural resources of the State of Texas, particularly within this region. The following checklist includes a regulatory citation (Column 1) for all subsections and paragraphs contained in the following applicable portions of the water planning regulations:

- 31 TAC Chapter 358.3
- 31 TAC Chapter 357.3
- 31 TAC Chapter 357.4
- 31 TAC Chapter 357.2
- 31 TAC Chapter 357.5

According to 31 TAC Chapter 357.41, the Regional Water Plan is considered to be consistent with the long-term protection of the State's resources if it complies with the above listed requirements. Therefore, the Regional Water Plan has been compared to each applicable section of the regulations as a means of determining consistency.

The checklist also includes a summary description of each cited regulation (Column 2). It should be understood that this summary is intended only to provide a general description of the particular section of the regulation and should not be assumed to contain all specifics of the actual regulation. The evaluation of the Regional Water Plan should be performed against the complete regulation, as contained in the actual 31 TAC 358 and 31 TAC 357 regulations.

Column 3 of the checklist provides the evaluation response as affirmative, negative, or not applicable. A "Yes" in this column indicates that the Regional Water Plan has been evaluated to comply with the stated section of the regulation. A "No" response indicates that the Regional Water Plan does not comply with the stated regulation. A response of "NA" (or not applicable) indicates that the stated section of the regulation does not apply to this Regional Water Plan.

The evidence of where, in the Regional Water Plan, the stated regulation is addressed is provided in Column 4. Where the regulation is addressed in multiple locations within the Regional Water Plan, this column may cite only the primary locations. In addition to identifying where the regulation is addressed, this column may include commentary about the application of the regulation in the Regional Water Plan.

The above-listed regulations are repetitive, in some instances. One section of the regulations may be restated or paraphrased elsewhere within the regulations. In some cases, multiple sections of the regulations may be combined into one separate regulation section. Therefore, Column 5 provides cross-referencing.

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
358.3 (1)	The state water plan shall provide for the preparation for and response to drought conditions.	Yes	Chapters 2, 3, 5, 7	
(2)	The RWP and SWP shall serve as water supply plans under drought of record conditions.	Yes	See above	
(3)	Consideration shall be given to the construction and improvement of surface water resources and the application of principles that result in voluntary redistribution of water resources.	Yes	Chapter 5	
(4)	Provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions so that sufficient water will be available at a reasonable cost to satisfy a reasonable projected use of water to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of the regional water planning area.	Yes	Chapters 5 and 6	
(5)	Include identification of those policies and action that may be needed to meet Texas' water supply needs and prepare for and respond to drought conditions.	Yes	Chapters 5 and 7	
(6)	Decision-making shall be open to and accountable to the public with decisions based on accurate, objective and reliable information with full dissemination of planning results except for those matters made confidential by law.	Yes	Chapter 10	
(7)	Establish terms of participation in water planning efforts that shall be equitable and shall not unduly hinder participation.	Yes	Chapter 10	
(8)	Consideration of the effect of policies or water management strategies on the public interest of the state, water supply, and those entities involved in providing this supply throughout the entire state.	Yes	Chapter 8	
(9)	Consideration of all water management strategies the regional water plan determines to be potentially feasible when developing plans to meet future water needs and to respond to drought so that cost effective water management strategies which are consistent with long-term protection of the state's water resources, agricultural resources, and natural resources are considered and approved.	Yes	Chapters 5 and 6	
(10)	Consideration of opportunities that encourage and result in voluntary transfers of water resources, including but not limited to regional water banks, sales, leases, options, subordination agreements, and financing agreements.	Yes	Chapter 5	
(11)	Consideration of a balance of economic, social, aesthetic, and ecological viability.	Yes	Appendices O and P	
(12)	For regional water planning areas without approved regional water plans or water providers for which revised plans are not developed through the regional water planning process, the use of information from the adopted state water plan and other completed studies that are sufficient for water planning shall represent the water supply plan for that area or water provider.	NA		
(13)	All surface waters are held in trust by the state, their use is subject to rights granted and administered by the Commission, and the use of surface water is governed by the prior appropriation doctrine, unless adjudicated otherwise.	Yes	Chapter 3	
(14)	Existing water rights, water contracts, and option agreements shall be protected. However, potential amendments of water rights, contracts and agreements may be considered and evaluated. Any amendments will require the eventual consent of the owner.	Yes	Chapters 3 and 5	
(15)	The production and use of groundwater in Texas is governed by the rule of capture doctrine unless and to the extent that such production and use is regulated by a groundwater conservation district.	Yes	Chapter 3	§36.002
(16)	Consideration of recommendations of river and stream segments of unique ecological value to the legislature for potential protection.	Yes	Chapter 8	
(17)	Consideration of recommendation of sites of unique value for the construction of reservoirs to the legislature for potential protection.	Yes	Chapter 8	
(18)	Consideration of water planning and management activities of local, regional, state, and federal agencies, along with existing local, regional, and state water plans and information and existing state and federal programs and goals.	Yes	Chapters 1 and 5	
(19)	Designated water quality and related water uses as shown in the state water quality management plan shall be improved or maintained.	Yes	Chapter 6	
(20)	Coordination of water planning and management activities of RWPGs to identify common needs and issues and achieve efficient use of water supplies, including the Board and other relevant RWPGs, working together to identify common needs, issues, and challenges while working together to resolve conflicts in a fair, equitable, and efficient manner.	Yes	Entire RWP	
(21)	The water management strategies identified in approved RWPs to meet needs shall be described in sufficient detail to allow a state agency making a financial or regulatory decision to determine if a proposed action before the state agency is consistent with an approved RWP.	Yes	Chapter 5, Appendices O and P	
(22)	The evaluation of water management strategies shall use environmental information in accordance with the Commission's adopted environmental flow standards where applicable or, in basins where standards are not available or have not been adopted, information from existing site-specific studies or state consensus environmental planning criteria.	Yes	Cahpter 5; Evaluation of strategies involving new reservoir include environmental flow standards as appropriate	30 TAC Chapter 298

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
(23)	Consideration of environmental water needs including instream flows and bay and estuary inflows, including adjustments by the RWPGs to water management strategies to provide for environmental water needs including instream flows and bay and estuary needs. Consideration shall be consistent with the Commission's adopted environmental flow standards in basins where standards have been adopted.	Yes	Cahpter 5; Evaluation of strategies involving new reservoir include environmental flow standards as appropriate	30 TAC Chapter 298
(24)	Planning shall be consistent with all laws applicable to water use for the state and regional water planning area.	Yes	Entire RWP	
(25)	The inclusion of ongoing water development projects that have been permitted by the Commission or a predecessor agency.	Yes	Chapter 5	
(26)	Specific recommendations of water management strategies shall be based upon identification, analysis, and comparison of all water management strategies the RWPG determines to be potentially feasible so that the cost effective water management strategies which are environmentally sensitive are considered and adopted unless the RWPG demonstrates that adoption of such strategies is not appropriate.	Yes	Chapter 5	§357.34(d)(3)(A) §357.34(d)(3)(B)
(27)	Achieve efficient use of existing water supplies, explore opportunities for and the benefits of developing regional water supply facilities or providing regional management of water facilities, coordinate the actions of local and regional water resource management agencies, provide substantial involvement by the public in the decision-making process, and provide full dissemination of planning results.	Yes	Chapters 5 and 10	
(28)	Consideration of existing regional water planning efforts when developing RWPs.	Yes	Chapters 1 and 5	
Chapter One Description of the Regional Water Planning Area				
31 TAC §357.30				
	RWPGs shall describe their regional water planning area including the following:			
357.3 (1)	Social and economic aspects of a region such as information on current population, economic activity and economic sectors heavily dependent on water resources	Yes	1.1	
(2)	Current water use and major water demand centers	Yes	1.3	
(3)	Current groundwater, surface water, and reuse supplies including major springs that are important for water supply or protection of natural resources	Yes	1.4	
(4)	Wholesale water providers	Yes	1.5	
(5)	Agricultural and natural resources	Yes	1.1	
(6)	Identified water quality problems	Yes	1.12.2	
(7)	Identified threats to agricultural and natural resources due to water quantity problems or water quality problems related to water supply	Yes	1.12	
(8)	Summary of existing local and regional water plans	Yes	1.6	
(9)	The identified historic drought(s) of record within the planning area	Yes	1.7 and Chapter 7	
(10)	Current preparations for drought within the RWPA	Yes	1.7 and Chapter 7	
(11)	Information compiled by the Board from water loss audits	Yes	1.9 and Appendix B	§358.6
(12)	An identification of each threat to agricultural and natural resources and a discussion of how that threat will be addressed or affected by the water management strategies evaluated in the plan.		1.10 and Chapter 6	
Chapter Two Projected Non-Municipal, Municipal and Population Water Demands				
31 TAC §357.31				
357.31 (a)	Present projected population and water demands by WUG.	Yes	2.2, 2.3, Appendices F and G	§357.10
(b)	Present projected water demands associated with WWPs by category of water use, including municipal, manufacturing, irrigation, steam electric power generation, mining, and livestock for each county or portion of a county in the RWPA.	Yes	2.3.4	
(c)	Report the current contractual obligations of WUG and WWPs to supply water in addition to any demands projected for the WUG or WWP.	Yes	Appendices C & H	§357.32
(d)	Municipal demands shall be adjusted to reflect water savings due to plumbing fixture requirements identified in the Texas Health and Safety Code, Chapter 372.	Yes	2.3	Texas Health and Safety Code, Chapter 372
(e)	In developing RWPs, RWPGs shall use:			
(e) (1)	Population and water demand projections developed by the EA that will be contained in the next state water plan and adopted by the Board after consultation with the RWPGs, Commission, Texas Department of Agriculture, and the Texas Parks and Wildlife Department.	Yes	2.2, 2.3	
(e) (2)	RWPGs may request revisions of Board adopted population or water demand projections if the request demonstrates that population or water demand projections no longer represents a reasonable estimate of anticipated conditions based on changed conditions and or new information.	Yes	Appendix E	§357.21(c)
(f)	Population and water demand projections shall be presented for each planning decade for each of the above reporting categories.	Yes	2.2, 2.3	

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
	Guidance Principles			
	31 TAC §358.3			
	Chapter Three Water Supply Analysis			
	31 TAC §357.32			
357.32 (a)	RWPGs shall evaluate:			
(a) (1)	Source water availability during drought of record conditions.	Yes	Chapter 3	
(a) (2)	Existing water supplies that are legally and physically available to WUGs and wholesale water suppliers within the RWPA for use during the drought of record.	Yes	3.4, 3.5, 3.6, Appendices I and J	
(b)	Consider surface water and groundwater data from the state water plan, existing water rights, contracts and option agreements relating to water rights, other planning and water supply studies, and analysis of water supplies existing in and available to the RWPA during drought of record conditions	Yes	3.2, 3.3	
(c)	Evaluation of the existing surface water available during drought of record shall be based on firm yield. The analysis may be based on justified operational procedures other than firm yield.	Yes	3.2	
(d)	Use modeled available groundwater volumes for groundwater availability, as issued by the Board, and incorporate such information in its RWP unless no modeled available groundwater volumes are provided.	Yes	3.3	
(e)	Evaluate the existing water supplies for each WUG and WWP	Yes	3.5, 3.6	
(f)	Water supplies based on contracted agreements will be based on the terms of the contract, which may be assumed to renew upon contract termination if the contract contemplates renewal or extensions.	Yes	3.5, 3.6, Appendix H	
(g)	Evaluation results shall be reported by WUG in accordance with §357.31(a) of this title (relating to Projected Population and Water Demands) and WWPs in accordance with §357.31(b) of this title	Yes	Appendices I and J	§357.31(a) §357.31(b)
	Chapter Four Identification of Water Needs			
	31 TAC §357.33			
357.33 (a)	Include comparisons of existing water supplies and projected water demands to identify water needs.	Yes	Chapter 4	
(b)	Compare projected water demands with existing water supplies available to WUGs and WWPs in a planning area to determine whether WUGs will experience water surpluses or needs for additional supplies. Results will be reported for WUGs and for WWPs by categories of use including municipal, manufacturing, irrigation, steam electric, mining, and livestock watering for each county or portion of a county in a RWPA.	Yes	Chapter 4, Appendices C and H	§357.31 §357.32
(c)	The social and economic impacts of not meeting water needs will be evaluated by RWPGs and reported for each RWPA.	Yes	Chapter 4,6 - To be included in Final Plan	
(d)	Results of evaluations will be reported by WUG in accordance with §357.31(a) of this title and WWPs in accordance with §357.31(b) of this title.	Yes	Chapter 4, Appendices C and H	§357.31(a) §357.31(b)
(e)	Perform a secondary water needs analysis for all WUGs and WWPs for which conservation water management strategies or direct reuse water management strategies are recommended. This secondary water needs analysis will calculate the water needs that would remain after assuming all recommended conservation and direct reuse water management strategies are fully implemented. The resulting secondary water needs volumes shall be presented in the RWP by WUG and WWP and decade.	Yes	4.6, Appendix U - To be included in Final Plan	
	Chapter Five Identification and Evaluation of Potentially Feasible Water Management Strategies			
	31 TAC §357.34			
357.34 (a)	Identify and evaluate potentially feasible water management strategies for all WUGs and WWPs with identified water needs.	Yes	Chapter 5 and Appendix O	
(b)	Identify potentially feasible water management strategies to meet water supply needs. Strategies shall be developed for WUGs and WWPs. The strategies shall meet new water supply obligations necessary to implement recommended water management strategies of WWPs and WUGs.	Yes	Subchapter 5A	§357.33 §357.12(b)
(c)	Potential Feasible Water Management Strategies should include, but are not limited to:			
(c) (1)	Expanded use of existing supplies including system optimization and conjunctive use of water resources, reallocation of reservoir storage to new uses, voluntary redistribution of water resources including contracts, water marketing, regional water banks, sales, leases, options, subordination agreements, and financing agreements, subordination of existing water rights through voluntary agreements, enhancements of yields of existing sources, and improvement of water quality including control of naturally occurring chlorides.	Yes	Subchapter 5A.1	
(c) (2)	New supply development including construction and improvement of surface water and groundwater resources, brush control, precipitation enhancement, desalination, water supply that could be made available by cancellation of water rights based on data provided by the Commission, rainwater harvesting, and aquifer storage and recovery.	Yes	Subchapters 5A.1	
(c) (3)	Conservation and drought management measures including demand management.	Yes	Subchapter 5E and Chapter 7	
(c) (4)	Reuse of wastewater.	Yes	Subchapter 5E	
(c) (5)	Interbasin transfers of surface water.	Yes	Subchapter 5A.1.15	

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
(c) (6)	Emergency transfers of surface water including a determination of the part of each water right for non-municipal use in the RWPA that may be transferred without causing unreasonable damage to the property of the non-municipal water rights holder in accordance with Texas Water Code §11.139 (relating to Emergency Authorizations).	Yes	Chapter 7	§11.139
(d)	Evaluations of Potentially Feasible Water Management Strategies should include the following analyses:			
(d) (1)	For the purpose of evaluating potentially feasible water management strategies, the Commission's most current Water Availability Model with assumptions of no return flows and full utilization of senior water rights, is to be used. Alternative assumptions may be used with written approval from the EA.	Yes	Subchapter 5A and Chapter 3	
(d) (2)	An equitable comparison between and consistent evaluation and application of all water management strategies the RWPGs determine to be potentially feasible for each water supply need.	Yes	Subchapters 5C, 5D and Appendix O	
(d) (3) (A)	A quantitative reporting of the net quantity, reliability, and cost of water delivered and treated for the end user's requirements during drought of record conditions, taking into account and reporting anticipated strategy water losses, incorporating factors used calculating infrastructure debt payments and may include present costs and discounted present value costs. Costs do not include distribution of water within a WUG after treatment.	Yes	Subchapters 5B, 5C, 5D, 5E, Appendices P and Q	
(d) (3) (B)	A quantitative reporting of the environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico.	Yes	Appendix P	30 TAC Chapter 298
(d) (3) (C)	A quantitative reporting of the impacts to agricultural resources.	Yes	Appendix P	
(d) (4)	Discussion of the plan's impact on other water resources of the state including other water management strategies and groundwater and surface water interrelationships.	Yes	Chapter 6	
(d) (5)	Discussion of each threat to agricultural or natural resources identified pursuant to §357.30(7) of this title (relating to Description of the Regional Water Planning Area) including how that threat will be addressed or affected by the water management strategies evaluated	Yes	Chapter 6 and Appendix Y	§357.30(7)
(d) (6)	If applicable, consideration and discussion of the provisions in Texas Water Code §11.085(k)(1) for interbasin transfers of surface water. At minimum, this consideration will include a summation of water needs in the basin of origin and in the receiving basin.	Yes	Chapter 6.3	§11.085(k)(1)
(d) (7)	Consideration of third-party social and economic impacts resulting from voluntary redistributions of water including analysis of third-party impacts of moving water from rural and agricultural areas.	Yes	Chapter 6, Appendices N and P	
(d) (8)	A description of the major impacts of recommended water management strategies on key parameters of water quality identified by RWPGs as important to the use of a water resource and comparing conditions with the recommended water management strategies to current conditions using best available data.	Yes	Chapter 6 and Appendix M	
(d) (9)	Consideration of water pipelines and other facilities that are currently used for water conveyance as described in §357.22(a)(3) of this title (relating to General Considerations for Development of Regional Water Plans).	Yes	Chapter 7 and Appendix Q	§357.22(a)(3)
(d) (10)	Other factors as deemed relevant by the RWPG including recreational impacts.	Yes	Chapter 6	
(e)	Evaluate and present potentially feasible water management strategies with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved RWP.	Yes	Chapter 5	
(f)	Conservation, Drought Management Measures, and Drought Contingency Plans shall be considered by RWPGs when developing the regional plans, particularly during the process of identifying, evaluating, and recommending water management strategies. RWPs shall incorporate water conservation planning and drought contingency planning in the regional water planning area.	Yes	Chapter 5 and 7	
(f) (1)	Drought management measures including water demand management. RWPGs shall consider drought management measures for each need identified in §357.33 of this title and shall include such measures for each user group to which Texas Water Code §11.1272 (relating to Drought Contingency Plans for Certain Applicants and Water Right Holders) applies. Impacts of the drought management measures on water needs must be consistent with guidance provided by the Commission in its administrative rules implementing Texas Water Code §11.1272. If a RWPG does not adopt a drought management strategy for a need it must document the reason in the RWP.	Yes	Chapter 7	§357.33 §11.1272
(f) (2)	Must consider water conservation practices, including potentially applicable best management practices, for each identified water need.	Yes	Subchapter 5E and Appendix K	
(f) (2) (A)	Include water conservation practices for each user group to which Texas Water Code §11.1271 and §13.146 (relating to Water Conservation Plans) apply. The impact of these water conservation practices on water needs must be consistent with requirements in appropriate Commission administrative rules.	Yes	Subchapter 5E and Appendix K	§11.1271 §13.146
(f) (2) (B)	Consider water conservation practices for each WUG beyond the minimum requirements of subparagraph (A) of this paragraph, whether or not the WUG is subject to Texas Water Code §11.1271 and §13.146. If RWPGs do not adopt a water conservation strategy to meet an identified need, they shall document the reason in the RWP.	Yes	Subchapter 5E and Appendix K	§11.1271 §13.146
(f) (2) (C)	For each WUG or WWP that is to obtain water from a proposed interbasin transfer, RWPGs will include a water conservation strategy that will result in the highest practicable level of water conservation and efficiency achievable.	NA	Subchapter 5E and Appendix K	§11.085

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
(f) (2) (D)	Consider strategies to address any issues identified in the information compiled by the Board from the water loss audits performed by retail public utilities pursuant to §358.6 of this title (relating to Water Loss Audits).	Yes	Subchapter 5E and Appendix K	§358.6
(g)	Include a subchapter consolidating the RWPG's recommendations regarding water conservation. RWPGs shall include in the RWPs model water conservation plans pursuant to Texas Water Code §11.1271	Yes	Subchapter 5E and Appendix K	§11.1271
31 TAC §357.35				
357.35 (a)	Recommend water management strategies to be used during a drought of record based on the potentially feasible water management strategies evaluated under §357.34 of this title (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies).	Yes	Chapter 5, Appendices O, P, and Q	§357.34
(b)	Recommend specific water management strategies based upon the identification, analysis, and comparison of water management strategies by the RWPG that the RWPG determines are potentially feasible so that the cost effective water management strategies that are environmentally sensitive are considered and adopted unless a RWPG demonstrates that adoption of such strategies is inappropriate.	Yes	Chapter 5, Appendices O, P, and Q	§357.34
(c)	Strategies will be selected by the RWPGs so that cost effective water management strategies, which are consistent with long-term protection of the state's water resources, agricultural resources, and natural resources are adopted.	Yes	Chapter 5, Appendices O, P, and Q	
(d)	Identify and recommend water management strategies for all WUGs and WWPs with identified water needs and that meet all water needs during the drought of record except in cases where: (1) no water management strategy is feasible. In such cases, RWPGs must explain why no management strategies are feasible; or (2) a political subdivision that provides water supply other than water supply corporations, counties, or river authorities explicitly does not participate in the regional water planning process for needs located within its boundaries or extraterritorial jurisdiction.	Yes	Chapter 5, Appendices O, P, and Q	
(e)	Specific recommendations of water management strategies to meet an identified need will not be shown as meeting a need for a political subdivision if the political subdivision in question objects to inclusion of the strategy for the political subdivision and specifies its reasons for such objection. This does not prevent the inclusion of the strategy to meet other needs.	Yes	Chapter 5, Appendices O, P, and Q	
(f)	Recommended strategies shall protect existing water rights, water contracts, and option agreements, but may consider potential amendments of water rights, contracts and agreements, which would require the eventual consent of the owner.	Yes	Chapter 5, Appendices O, P, and Q	
(g)	RWPGs shall report the following			
(g) (1)	Recommended water management strategies and the associated results of all the potentially feasible water management strategy evaluations by WUG and WWP. If a WUG or WWP lies in one or more counties or RWPAs or river basins, data will be reported for each river basin, RWPA, and county.	No	Chapters 5C and 5D, Appendices C and H - Reporting by basin to be provided by DB17	
(g) (2)	Calculated planning management supply factors for each WUG and WWP included in the RWP assuming all recommended water management strategies are implemented. This calculation shall be based on the sum of: the total existing water supplies, plus all water supplies from recommended water management strategies for each entity; divided by that entity's total projected water demand, within the planning decade. The resulting calculated safety factor shall be presented in the plan by entity and decade for every WUG and WWP	No	Chapter 5C for WWPs; WUG Management Supply Factor To be provided by DB17	
(g) (3)	Fully evaluated Alternative Water Management Strategies included in the adopted RWP shall be presented together in one place in the RWP.	No	Appendices O, P, and Q;	
Chapter Six Impacts of Regional Water Plan and Consistency with Protection of Water Resources, Agricultural Resources, and Natural Resources				
31 TAC §357.40				
357.40 (a)	RWPs shall include a description of the impacts of the RWP regarding:			
(b) (1)	Agricultural resources pursuant to §357.34(d)(3)(C) of this title (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies)	Yes	Chapter 6 and Appendices O, P and Y	§357.34(d)(3)(C)
(b) (2)	Other water resources of the state including other water management strategies and groundwater and surface water interrelationships pursuant to §357.34(d)(4) of this title	Yes	Chapter 6 and Appendices O, P and Y	§357.34(d)(4)
(b) (3)	Threats to agricultural and natural resources identified pursuant to §357.34(d)(5) of this title	Yes	Chapter 6 and Appendices O, P and Y	§357.34(d)(5)
(b) (4)	Third-party social and economic impacts resulting from voluntary redistributions of water including analysis of third-party impacts of moving water from rural and agricultural areas pursuant to §357.34(d)(7) of this title	Yes	Appendix P	§357.34(d)(7)
(b) (5)	Major impacts of recommended water management strategies on key parameters of water quality pursuant to §357.34(d)(8) of this title	Yes	6.1	§357.34(d)(8)
(b) (6)	Effects on navigation	Yes	6.4.4 - The Region C Plan does not have an impact on navigation	
(c)	Include a summary of the identified water needs that remain unmet by the RWP.		6.5.1	
31 TAC §357.41				

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles 31 TAC §358.3				
357.41	Describe how RWPs are consistent with the long-term protection of the state's water resources, agricultural resources, and natural resources as embodied in the guidance principles in §358.3(4) and (8) of this title (relating to Guidance Principles).	Yes	Chapter 6	§358.3(4) and (8)
Chapter Seven Drought Response Information, Activities, and Recommendations 31 TAC §357.42				
357.42 (a)	Consolidate and present information on current and planned preparations for, and responses to, drought conditions in the region including, but not limited to, drought of record conditions based on the following subsections.	Yes	7	
(b)	Conduct an overall assessment of current preparations for drought within the RWPA including a description of how water suppliers in the RWPA identify and respond to the onset of drought. This may include information from local drought contingency plans.	Yes	7.2	
(c)	Develop drought response recommendations regarding the management of existing groundwater and surface water sources in the RWPA designated in accordance with §357.32 of this title (relating to Water Supply Analysis), including:			
(c) (1)	Factors specific to each source of water supply to be considered in determining whether to initiate a drought response for each water source including specific recommended drought response triggers	Yes	7.5	§357.32
(c) (2)	Actions to be taken as part of the drought response by the manager of each water source and the entities relying on each source, including the number of drought stages	Yes	7.5	§357.32
(c) (3)	Triggers and actions developed in paragraphs (1) and (2) of this subsection may consider existing triggers and actions associated with existing drought contingency plans.	Yes	7.5	§357.32
(d)	Collect information on existing major water infrastructure facilities that may be used for interconnections in event of an emergency shortage of water. In accordance with Texas Water Code §16.053(r), this information is CONFIDENTIAL INFORMATION and cannot be disseminated to the public. The associated information is to be collected by a subgroup of RWPG members in a closed meeting and submitted separately to the EA in accordance with guidance to be provided by EA.	Yes	Submitted under separate document	Texas Water Code §16.053(r)
(e)	Provide general descriptions of local drought contingency plans that involve making emergency connections between water systems or WWP systems that do not include locations or descriptions of facilities that are disallowed under subsection (d) of this section.	Yes	7.3	
(f)	RWPGs may designate recommended and alternative drought management water management strategies and other recommended drought measures in the RWP including:			
(f) (1)	List and description of the recommended drought management water management strategies and associated WUGs and WWPs, if any, that are recommended by the RWPG. Information to include associated triggers to initiate each of the recommended drought management water management strategies	NA	7.6 - Region C does not recommend specific drought management strategies. Region C recommends the implementation of drought contingency plans by suppliers when appropriate to reduce demand during drought and prolong current supplies.	
(f) (2)	List and description of alternative drought management water management strategies and associated WUGs and WWPs, if any, that are included in the plan. Information to include associated triggers to initiate each of the alternative drought management water management strategies	NA	No alternative drought management strategies were included in the Region C Plan	
(f) (3)	List of all potentially feasible drought management water management strategies that were considered or evaluated by the RWPG but not recommended	NA	Region C does not recommend specific drought management strategies.	
(f) (4)	List and summary of any other recommended drought management measures, if any, that are included in the RWP, including associated triggers if applicable	NA	Region C does not recommend specific drought management strategies.	
(g)	Evaluate potential emergency responses to local drought conditions or loss of existing water supplies; the evaluation shall include identification of potential alternative water sources that may be considered for temporary emergency use by WUGs and WWPs in the event that the existing water supply sources become temporarily unavailable to the WUGs and WWPs due to unforeseeable hydrologic conditions such as emergency water right curtailment, unanticipated loss of reservoir conservation storage, or other localized drought impacts. RWPGs shall evaluate, at a minimum, municipal WUGs that: (1) have existing populations less than 7,500 (2) rely on a sole source for its water supply regardless of whether the water is provided by a WWP (3) all county-other WUGs	Yes	7.4	

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
(h)	Consider any relevant recommendations from the Drought Preparedness Council.	Yes	7.7.1	
(i)	Make drought preparation and response recommendations regarding:			
(i) (1)	Development of, content contained within, and implementation of local drought contingency plans required by the Commission	Yes	7.2, 7.5	
(i) (2)	Current drought management preparations in the RWPA including: (A) drought response triggers; and (B) responses to drought conditions;	Yes	7.2, 7.5	
(i) (3)	The Drought Preparedness Council and the State Drought Preparedness Plan	Yes	7.2, 7.5, 7.7.1	
(i) (4)	Any other general recommendations regarding drought management in the region or state	Yes	7.7	
(j)	Develop region-specific model drought contingency plans.	Yes	7.5.4, regioncwater.org	
Chapter Eight Policy Recommendations and Unique Sites				
31 TAC §357.43				
357.43 (a)	The RWPs shall contain any regulatory, administrative, or legislative recommendations developed by the RWPGs	Yes	8.3	
(b)	May include in adopted RWPs recommendations for all or parts of river and stream segments of unique ecological value located within the RWPA by preparing a recommendation package consisting of a physical description giving the location of the stream segment, maps, and photographs of the stream segment and a site characterization of the stream segment documented by supporting literature and data. The recommendation package shall address each of the criteria for designation of river and stream segments of ecological value found in this subsection. The RWPG shall forward the recommendation package to the Texas Parks and Wildlife Department and allow the Texas Parks and Wildlife Department 30 days for its written evaluation of the recommendation. The adopted RWP shall include, if available, Texas Parks and Wildlife Department's written evaluation of each river and stream segment recommended as a river or stream segment of unique ecological value.	NA	8.2 - Region C WPG does not recommend the designation of any ecologically unique stream segments	
(b) (1)	May recommend a river or stream segment as being of unique ecological value based upon the criteria set forth in §358.2 of this title (relating to Definitions)	NA	8.2 - Region C WPG does not recommend the designation of any ecologically unique stream segments	§358.2
(b) (2)	For every river and stream segment that has been designated as a unique river or stream segment by the legislature, during a session that ends not less than one year before the required date of submittal of an adopted RWP to the Board, or recommended as a unique river or stream segment in the RWP, the RWPG shall assess the impact of the RWP on these segments. The assessment shall be a quantitative analysis of the impact of the plan on the flows important to the river or stream segment, as determined by the RWPG, comparing current conditions to conditions with implementation of all recommended water management strategies. The assessment shall also describe the impact of the plan on the unique features cited in the region's recommendation of that segment	NA	8.2 - Region C WPG does not recommend the designation of any ecologically unique river or stream segments	
(c)	May recommend sites of unique value for construction of reservoirs by including descriptions of the sites, reasons for the unique designation and expected beneficiaries of the water supply to be developed at the site. The criteria at §358.2 of this title shall be used to determine if a site is unique for reservoir construction.	Yes	8.3 - Region C WPG recommends several unique sites for reservoir development	§358.2
(d)	Any other recommendations that the RWPG believes are needed and desirable to achieve the stated goals of state and regional water planning including to facilitate the orderly development, management, and conservation of water resources and prepare for and respond to drought conditions.	Yes	8.4	
(e)	May develop information as to the potential impacts of any proposed changes in law prior to or after changes are enacted.	Yes	8.4	
(f)	Consider making legislative recommendations to facilitate more voluntary water transfers in the region.	Yes	8.4	
Chapter Nine Infrastructure Financing Analysis				
31 TAC §357.44				
357.44	Assess and quantitatively report on how individual local governments, regional authorities, and other political subdivisions in their RWPA propose to finance recommended water management strategies.	No	Chapter 9, Appendix R	
Chapter Ten Public Participation and Plan Adoption				
31 TAC §357.21				
357.21 (a)	Conduct all business in meetings posted and held in accordance with the Texas Open Meetings Act, Texas Government Code Chapter 551, with a copy of all materials presented or discussed available for public inspection prior to and following the meetings.	Yes	Chapter 10	Texas Government Code Chapter 551
(b-d)	All public notices required by the TWDB by the RWPG shall comply with 31 TAC §357.21 and shall meet the requirements specified therein.	Yes	Chapter 10	
31 TAC §357.50				

Regulatory Citation (Col 1)	Summary of Requirement (Col 2)	Response (Yes/No/ NA) (Col 3)	Location(s) in Regional Plan and/or Commentary (Col 4)	Regulatory Cross References (Col 5)
Guidance Principles				
31 TAC §358.3				
357.5 (a)	Submit their adopted RWPs to the Board every five years on a date to be disseminated by the EA, as modified by subsection (e)(2) of this section, for approval and inclusion in the state water plan.	Yes	The Region C Water Plan was submitted to the EA accordingly	
(b)	Prior to the adoption of the RWP, the RWPGs shall submit concurrently to the EA and the public an IPP. The IPP submitted to the EA must be in the electronic and paper format specified by the EA. Each RWPG must certify that the IPP is complete and adopted by the RWPG.	Yes	Chapter 10	
(c)	Distribute the IPP in accordance with §357.21(d)(5) of this title (relating to Notice and Public Participation).	Yes	Chapter 10	
(d)	Solicit, and consider the necessary comments when adopting a RWP.	Yes	Appendix V and W	
(e)	Submit the IPP and the adopted RWPs and amendments to approved RWPs to the EA in conformance with 31 TAC §357.50 (e).	Yes	The Region C Water Plan was submitted to the EA accordingly	
(f)	Submit in a timely manner to the EA information on any known interregional conflict between RWPs.	NA	Interregional conflict in 2016 IPP raised by Region D has been resolved. There are no other known interregional conflicts between RWPs.	
(g)	Modify the RWP to incorporate Board resolutions of interregional conflicts	NA	Section 10.6, Appendix Z, and throughout final plan	
(h)	Seek to resolve conflicts with other RWPGs and shall participate in any Board sponsored efforts to resolve interregional conflicts.	NA	2016 IPP Conflict with Region D was resolved throught mediation. See Section 10.6 and Appendix Z.	
Chapter Eleven Implementation and Comparison to the Previous Regional Water Plan				
31 TAC §357.45				
357.45 (a)	Describe the level of implementation of previously recommended water management strategies. Information on the progress of implementation of all water management strategies that were recommended in the previous RWP, including conservation and drought management water management strategies; and the implementation of projects that have affected progress in meeting the state's future water needs.	Yes	11.2	
(b)	RWPGs shall provide a brief summary of how the RWP differs from the previously adopted RWP with regards to:			
(b) (1)	Water demand projections	Yes	11.3.1	
(b) (2)	Drought of record and hydrologic and modeling assumptions used in planning for the region	Yes	11.3.2	
(b) (3)	Groundwater and surface water availability, existing water supplies, and identified water needs for WUGs and WWPs	Yes	11.3.3, 11.3.4, 11.3.5	
(b) (4)	Recommended and alternative water management strategies.	Yes	11.3.6	

Appendix Y

Appendix Y

Quantitative Analyses of Marvin Nichols Reservoir

Appendix Y

Quantitative Analyses of Marvin Nichols Reservoir

This appendix contains two separate reports quantifying the impacts of the proposed Marvin Nichols Reservoir.

The first report quantifies the impacts of the larger reservoir footprint (at elevation 328 msl) and was produced by Region C as a result of the August 8, 2014 Order from TWDB related to the Interregional Conflict between the 2011 Region C and Region D Water Plans. This report was submitted to TWDB on October 29, 2014 and is titled *"Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on the Agricultural and Natural Resources of Region D and the State"*. This configuration of the reservoir is an alternative strategy in this *2016 Region C Water Plan.*

The second report quantified impacts of the smaller reservoir footprint (at elevation 313.5 msl) and was produced by Region C for this *2016 Region C Water Plan.* The title of this report is *"Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on the Agricultural and Natural Resources with the Top of Conservation Storage at 313.5 Feet above Mean Sea Level"*. This configuration of the reservoir is a recommended strategy in this *2016 Region C Water Plan.*

FREESE AND NICHOLS

Innovative approaches
Practical results
Outstanding service

Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on the Agricultural and Natural Resources of Region D and the State

Prepared for:

Region C Water Planning Group

For Submittal to:

Texas Water Development Board

Prepared by:

Freese and Nichols, Inc.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109
817-735-7300

NTD11336

Table of Contents

List of Appendices

List of Figures

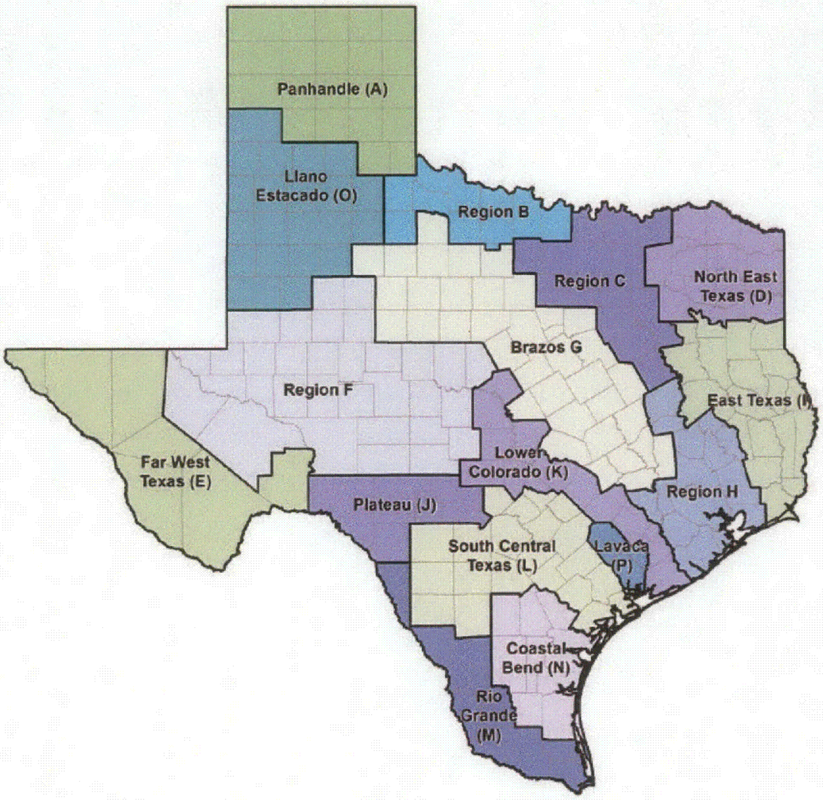
List of Tables

Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on the Agricultural and Natural Resources of Region D and the State

1. Introduction

In 1997, the Texas Legislature passed Senate Bill One, which initiated a regional water planning process for Texas. The planning process was implemented by the Texas Water Development Board (TWDB), which set up rules governing planning and established 16 water planning regions across the state. (See Figure 1.) Planning in each region is overseen by a regional water planning group, which develops a water supply plan addressing the future water needs of the region. The 16 regional plans are reviewed and approved by the Texas Water Development Board and assembled into a state water plan.

Figure 1
Regional Water Planning Areas Established by Texas Water Development Board.



The water planning process is conducted on a five-year cycle. Regional water plans were approved in 2001, 2006, and 2011, and the fourth round of planning is currently underway. State water plans based on the regional plans were developed in 2002, 2007, and 2012.

The Region C Regional Water Planning Area includes all or part of 16 counties and includes the Dallas-Fort Worth Metropolitan area. Region C has over 1/4 of the state's population and is the most populous of the 16 planning regions. The population of Region C is increasing rapidly, and the *2011 Region C Water Plan*[1] included a number of water management strategies to supply additional water to meet growing needs. Figure 2 shows the location of Region C, the North East Texas Regional Water Planning Group (Region D), and the proposed Marvin Nichols Reservoir. One of the water management strategies included in the *2011 Region C Water Plan* is the proposed Marvin Nichols Reservoir, which would be located in Red River, Titus, and Franklin Counties in the Sulphur River Basin. The proposed reservoir would be developed to meet needs in Region C, but it is located in The North East Texas Regional Water Planning Area (also known as Region D). Marvin Nichols Reservoir would have a firm yield of 612,300 acre-feet per year, of which 489,840 acre-feet per year would be used to meet needs in Region C and the rest left for local use. The remainder of this report includes additional information on the proposed Marvin Nichols Reservoir.

The *Regional Water Plan* for the North East Texas Regional Water Planning Group[2] "expressed the opinion that including the Marvin Nichols Reservoir in the Region C Regional Water Plan constituted an interregional conflict"[3] [between the Region C and Region D plans]. The TWDB initially approved the 2011 Region C and Region D plans, indicating that the inclusion of Marvin Nichols Reservoir in the 2011 Region C plan and the opposition to the reservoir expressed in the 2011 Region D plan did not constitute an interregional conflict under TWDB rules. (The rules define an interregional conflict as the overallocation of water from a particular source of supply.[3])

---

[1] Superscripted numbers refer to the list of references in Appendix A.

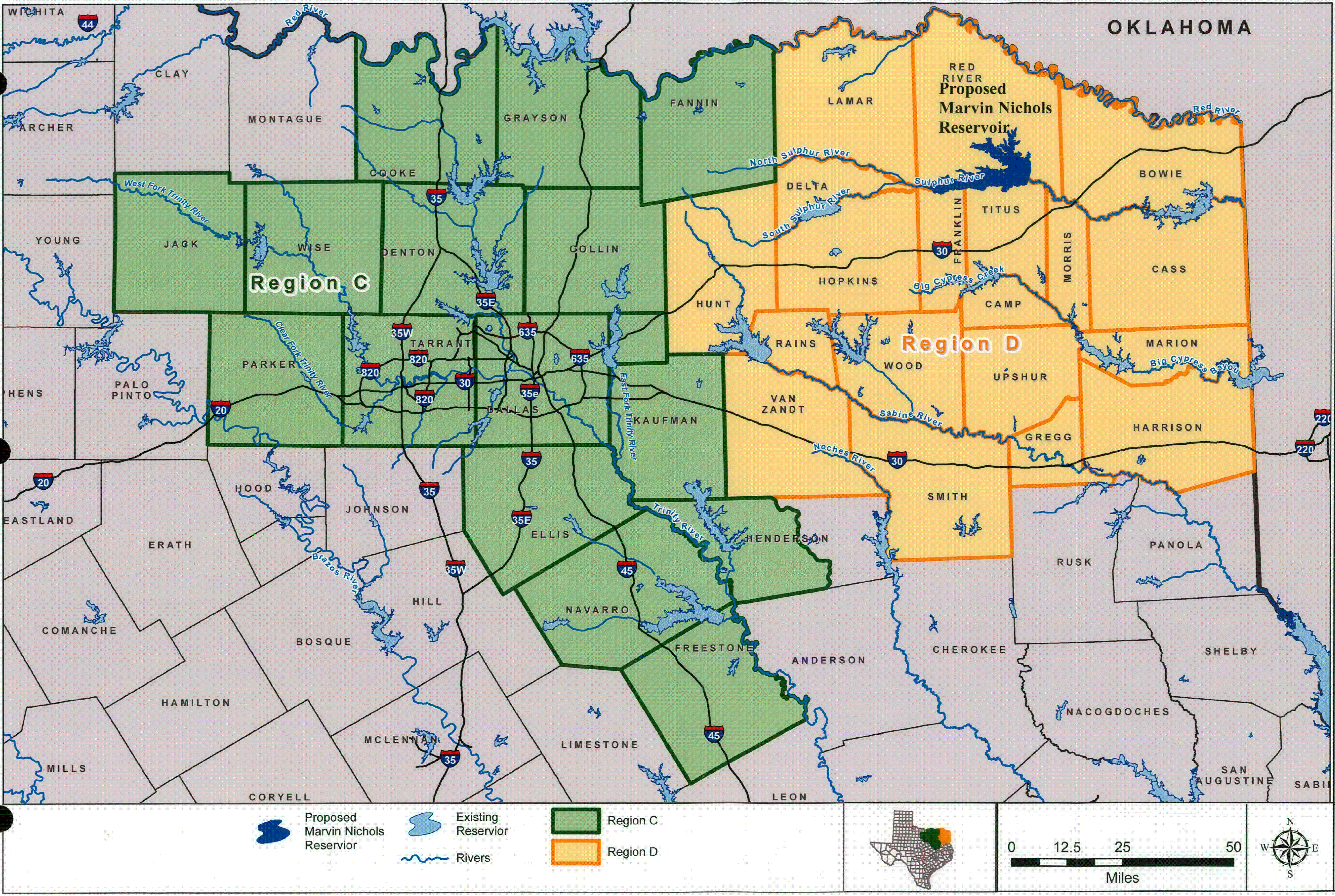


Figure 2

REGION C WATER PLANNING GROUP
MARVIN NICHOLS QUANTITATIVE ANALYSIS REPORT

LOCATION MAP FOR REGION C, REGION D, AND THE PROPOSED MARVIN NICHOLS RESERVIOR

FN PROJECT NO.	NTD11336
DATE CREATED	10/10/2014
DATUM & COORDINATE SYSTEM	NAD83 State Plane (feet) Texas North Centra
FILE NAME	Figure2
PREPARED BY	JLA

FREESE AND NICHOLS
4500 International Plaza Suite 200
Fort Worth, Texas 76109-4895
(817) 735-7300

If there is a conflict between regional water plans, TWDB is required to initiate mediation to resolve the issue. If the mediation fails, TWDB is required to take action to resolve the interregional conflict. After the Region C and Region D 2011 regional water plans were approved, private parties in Region D filed suit seeking judicial review of TWDB's decision to approve the 2011 Region C plan. In December 2011, "the District Court declared that an interregional conflict existed, reversed the TWDB's decision approving the two regional plans, and remanded the case to the TWDB for resolution."[3] The District Court's decision was upheld on appeal by the 11th Court of Appeals in May 2013.[3]

Following these court decisions, the TWDB provided a mediator and arranged for mediation between representatives of the Region C and Region D regional water planning groups in an effort to resolve the conflict, but the two sides did not reach agreement. Therefore, the TWDB is required to resolve the conflict.

On August 7, 2014, the TWDB Board met to consider the interregional conflict and requested additional information from Region C. The Board action is reflected in the Interim Order of August 8, 2014, which included the following language:

> "Region C is directed to conduct an analysis and quantification of the impacts of the Marvin Nichols Reservoir Water Management Strategy on the agricultural and natural resources of Region D and the State, pursuant to Sections 16.051 and 16.053 of the Texas Water Code and Chapters 357 and 358 of Board rules. Region C should submit this analysis and quantification to the Board by November 3, 2014. Upon receipt of the analysis and quantification, the Executive Administrator and Region D will be given the opportunity to submit a written response to the submission, and the matter will be scheduled for Board consideration. If no submittal is received by the Board on or before November 3, 2014, this matter will set for a Board Meeting to direct the Regions to revise their regional water plans reflecting the removal of the Marvin Nichols Reservoir Water Management Strategy from the 2011 Region C Plan, without prejudice."

The full Interim Order of August 8, 2014, is included as Appendix B to this report. The sections of the Texas Water Code and chapters of Board rules mentioned in the order are also included as appendices:

- Section 16.051 of the Texas Water Code is Appendix C.
- Section 16.053 of the Texas Water Code is Appendix D.
- Chapter 357 of TWDB rules (Texas Administrative Code §357) is Appendix E.
- Chapter 358 of TWDB rules (Texas Administrative Code §358) is Appendix F.

This report provides the information requested by the TWDB Board in the Interim Order of August 8, 2014. Reviewing the sections of the Texas Water Code and the chapters of TWDB rules listed above, the requirement for quantification of impacts on agricultural and natural resources is in Board rules, reflected in Texas Administrative Code §§357.34(d)(3)(B) and 357.34(d)(3)(C):

> "357.34(d) Evaluations of potentially feasible water management strategies shall include the following analyses:... (3) A quantitative reporting of:
> ...
> (B) Environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico. Evaluations of effects on environmental flows will include consideration of the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water). If environmental flow standards have not been established, then environmental information from existing site-specific studies, or in the absence of such information, state environmental planning criteria adopted by the Board for inclusion in the state water plan after coordinating with staff of the Commission and the Texas Parks and Wildlife Department to ensure that water management strategies are adjusted to provide for environmental water needs including instream flows and bays and estuaries inflows.
> (C) Impacts to agricultural resources."

The information in this report is intended to supplement the *2011 Region C Water Plan*, with emphasis on the quantification and analysis of the impact of Marvin Nichols Reservoir on agricultural and natural resources requested in the Board's Interim Order of August 8, 2014.

Section 2 of this report provides the analysis and quantification of the impacts of Marvin Nichols Reservoir on natural resources. Section 3 provides the analysis and quantification of the impacts of the project on agricultural resources. Section 4 discusses potential mitigation requirements for the project and how they might affect impacts on natural and agricultural resources. Section 5 provides additional information, and the Appendices include supporting material.

2. Analysis and Quantification of the Impacts on Natural Resources

2.1 Requirements of Texas Water Code and Texas Water Development Board Rules

The requirements for quantitative reporting on the impacts of water management strategies on natural resources are included in the Board rules in Texas Administrative Code §357, included in Appendix E. Specifically §357.34(d)(3)(B), requires that the quantitative reporting address impacts on certain specific aspects of natural resources:

- Environmental water needs
- Wildlife habitat
- Cultural resources
- Effect on bays, estuaries, and arms of the Gulf of Mexico

A quantitative reporting of impacts on each of these areas is provided below, as is additional information on impacts on threatened and endangered species.

2.2 Available Data for Impacts on Natural Resources

Data on impacts of the proposed Marvin Nichols Reservoir on environmental flow needs is taken from the hydrologic analyses of the reservoir conducted for the *2011 Region C Water Plan.*[1] Data on impacts on other natural resources is taken from the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[4] The environmental evaluation is a recent report developed for the U.S. Army Corps of Engineers as part of an on-going basin-wide assessment of the Sulphur River Basin. It was completed in June 2013 and was not available when the *2011 Region C Water Plan* was developed. The report includes environmental analyses of Marvin Nichols Reservoir and other potential water supply projects in the Sulphur Basin.

2.3 Impacts on Environmental Water Needs

Texas Administrative Code §357.34(d)(3)(B) includes specific requirements for the evaluation of environmental water needs:

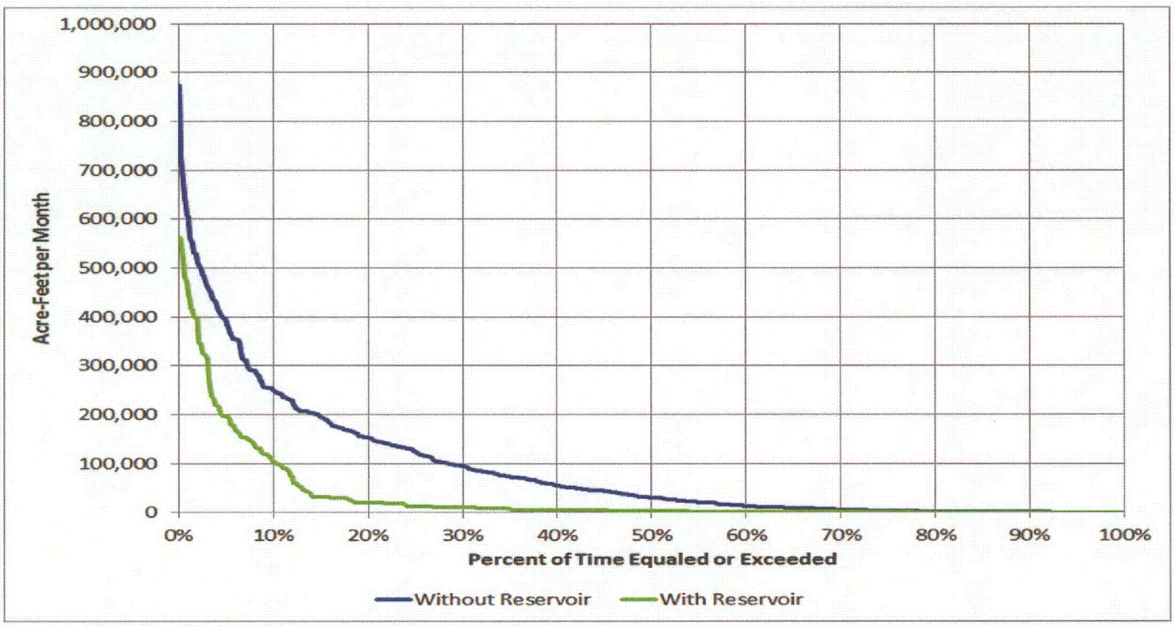
> "Evaluations of effects on environmental flows will include consideration of the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water). If environmental flow standards have not been established, then environmental information from existing site-specific studies, or in the absence of such information, state environmental planning criteria adopted by the Board for inclusion in the state water plan after coordinating with staff of the Commission and the Texas Parks and Wildlife Department to ensure that water management strategies are adjusted to provide for environmental water needs including instream flows and bays and estuaries inflows."

The Texas Commission on Environmental Quality (TCEQ) has not yet adopted environmental flow standards under 30 TAC Chapter 298 for the Sulphur Basin, and environmental instream flow information from existing site-specific studies is not available for the proposed Marvin Nichols Reservoir. As required by TWDB rules, the operation of the proposed reservoir was evaluated using state environmental planning criteria adopted by the Board for inclusion in the state water plan. Table 1 and Figure 3 summarize the flow-frequency relationship for the Sulphur River immediately below the proposed Marvin Nichols Reservoir with and without the reservoir. It is likely that the detailed studies required for reservoir permitting will result in different streamflow bypass requirements and different impacts on downstream flows. The results in Table 1 and Figure 3 reflect current TWDB requirements.

Table 1
Monthly Flow Frequency Relationship with and without Marvin Nichols Reservoir

% of Months Flow is Exceeded	Flow in CFS	
	Without Marvin Nichols	With Marvin Nichols
5%	393,333	195,908
10%	249,393	104,035
20%	153,060	20,928
30%	95,124	11,488
40%	54,579	5,712
50%	30,492	2,748
60%	12,993	1,550
70%	6,057	943
80%	2,135	486
90%	615	104
95%	425	79

Figure 3
Flow-Frequency Relationship of Sulphur River at Marvin Nichols Dam Site with and without the Reservoir



2.4 Impacts on Wildlife Habitat

The primary impact of the proposed Marvin Nichols Reservoir on wildlife habitat would be the inundation of habitat by the reservoir. This impact was evaluated as part of the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*,[4] prepared for the U.S. Army Corps of Engineers as part of an on-going basin-wide assessment of the Sulphur River Basin. The *Environmental Evaluation Interim Report* used the existing Texas Parks and Wildlife Ecological Systems Classification data set, which was developed by analysis of color infra-red and multi-spectral satellite imagery. The data set was considered to be the most recent, readily available data on land cover types in the Sulphur River Basin. The cover types determined from the Ecological Systems Data set were grouped into larger categories based on EPA's Level One National Land Cover Data classifications. U.S. Fish and Wildlife Service National Wetlands Inventory data were used to further refine the classifications. The approach used in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4] is described in greater detail in Appendix G, which reproduces Sections 2.1 and 2.2 of that report.

Table 2 shows the acreage of each cover type within the footprint of the proposed Marvin Nichols Reservoir. For comparison, the area of each cover type in all of Region D is also included. (Cover areas in Region D were developed for this study using the database developed in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[4]) Appendix H is a map of the cover types in the Marvin Nichols Reservoir site, taken from *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[4]

Table 2
Quantitative Reporting on Impacts on Wildlife Habitat

Cover Type	Area (Acres)		Marvin Nichols Reservoir Area as a Percent of Region D
	Marvin Nichols Reservoir	Region D	
Barren	<1	8,437	0.0%
Bottomland Hardwood Forest	10,156	417,265	2.4%
Forested Wetland	21,444	414,573	5.2%
Grassland/Old Field	18,241	2,843,656	0.6%
Herbaceous Wetland	1,244	32,011	3.9%
Open Water	1,162	211,761	0.5%
Row Crops	706	314,184	0.2%
Shrub Wetland	1,405	16,445	8.5%
Shrubland	444	47,485	0.9%
Upland Forest	11,223	2,869,079	0.4%
Urban	78	158,878	0.0%
Total	**66,103**	**7,333,774**	**0.9%**

The area for Marvin Nichols Reservoir in Table 2 differs from the area in the *2011 Region C Water Plan*[1] (68,854 acres) for two reasons:

- The area in the Region C plan includes ancillary facilities, whereas the data in Table 2 are for the land inundated by the reservoir only.
- The area inundated by the reservoir is slightly different in *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4] due to the use of different elevation databases.

Table 2 presents the impact of the proposed Marvin Nichols Reservoir on wildlife habitat in terms of the acreage of different types of habitat inundated by the reservoir. The reservoir will affect 5.2 percent of the forested wetlands, 2.4 percent of the bottomland hardwood forests, and 0.4 percent of the upland forests in Region D. Bottomland hardwoods and forested wetlands are often lumped together as bottomland hardwoods, and they are considered to be particularly important as wildlife habitat. The total of these two types in the proposed Marvin Nichols Reservoir represents 3.8 percent of the area in Region D. The 31,600 acres that would be inundated by the proposed reservoir represents about 0.5 percent of the estimated 5,973,000 acres[5] of bottomland hardwoods in Texas. As a part of permitting for the project, there will be more detailed assessments of the quality of the wildlife habitat that would be affected by the project, which will aid in the development of mitigation plans.

2.5 Impacts on Cultural Resources

The impacts of Marvin Nichols Reservoir on cultural resources would result from the inundation of cultural resource sites. The *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4] collected the following data on potential cultural resource impacts from Marvin Nichols Reservoir site and other proposed reservoir sites in the Sulphur River Basin:

- Number of known cultural resources
- Presence of known human remains/burials
- Acres of zones of archaeological potential
- Percentage of reservoir footprint with previous cultural resource surveys
- Surveyed site density

Table 3 is a quantitative reporting of known cultural resources in the Marvin Nichols Reservoir footprint. Table 4 is a quantitative reporting of other measures of potential impacts on cultural resources. The data in both tables is taken from *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4].

Table 3
Quantitative Reporting of Impacts on Cultural Resources – Known Cultural Resources

Likely Eligibility of Sites for the National Register of Historic Properties (NHRP)	Historic	Pre-historic	Caddo	Multi-Component	Prehisoric Multi-Component	Total*
Likely NRHP Eligible	0	20	9	2	3	34
Possibly NRHP Eligible - Fair Chance	0	4	2	0	0	6
Possibly NRHP Eligible - Poor Chance	0	4	1	0	0	5
Not Likely NRHP Eligible	0	15	1	2	0	18

* Total for likely NRHP eligible is corrected from 31 in *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4].

Table 4
Quantitative Reporting of Impacts on Cultural Resources – Other Factors

Measurement of Impact on Cultural Resources	Value for Measurement
Ratio of High Value Sites to Low Value Sites	1.7*
Number of Known Cemeteries	1 (57 graves)
Acres with High Potential for Archaeological Sites	51,654
Percentage of Project Area Previously Surveyed for Cultural Resources	1.3%
Number of Acres Surveyed per Site Found in Survey	90.1

* Ratio of high value sites to low value sites is corrected from 1.6 in *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4].

In general, impacts on cultural resources are mitigated through coordination with the Corps of Engineers and the Texas State Historical Commission during permitting. Coordination with Indian tribes on archeological issues would also be a part of the permitting process. Mitigation is accomplished by investigating and recording archaeological sites and proper relocation of cemeteries. This process of archaeological mitigation adds to project costs, and it has been considered in costs developed for the proposed Marvin Nichols Reservoir.

2.6 Impacts on Bays, Estuaries and Arms of the Gulf of Mexico

The proposed Marvin Nichols Reservoir would generally reduce flows discharging to bays, estuaries and arms of the Gulf of Mexico. The Sulphur River, on which the Marvin Nichols Reservoir would be located, is a tributary of the Red River, which does not flow to any bay, estuary or arm of the Gulf of Mexico in Texas. According to the U.S. Geological Survey, the Red River discharges to the Atchafalaya River, which flows to the Gulf of Mexico in Lousiana[6,7]. Natural discharges from the Atchafalaya to the Gulf of Mexico average 58,000 cubic feet per second, or 42 million acre-feet per year[6,7]. In addition, human diversions of flood flows from the Mississippi River to the Atchafalaya River add about 167,000 cfs, or 121 million acre-feet per year, to the discharge of the Atchafalaya[6,7], making a total discharge of 163 million acre-feet per year.

Assuming full use of Marvin Nichols Reservoir and no return flows, the project would reduce flows by about 670,000 acre-feet per year. This would reduce the discharge from the Atchafalaya River to the Gulf of Mexico in Louisiana by about 0.4%. It should be noted that reducing the discharge from the Atchafalaya is moving toward natural conditions, offsetting a very small part of the flows added to the Atchafalaya by human diversion from the Mississippi River. The impact of Marvin Nichols Reservoir on bays, estuaries and arms of the Gulf of Mexico would be negligible.

2.7 Impacts on Threatened and Endangered Species

The Texas Water Development Board rules do not require reporting on potential impacts to threatened and endangered species. However, data on potential impacts to endangered and threatened species are available in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4] and are presented here. The U.S. Fish and Wildlife Service maintains lists of federally endangered and threatened species by county. The Texas Parks and Wildlife Department maintains a separate Texas, or State, list of endangered and threatened species by county. Table 5 summarizes State and Federally listed threatened and endangered species in the counties in which Marvin Nichols Reservoir would be located. Appendix I is an excerpt from Chapter 3 of the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[4] that presents additional information on the development of the data in Table 5.

Table 5
Quantitative Reporting of Potential Impacts on Endangered and Threatened Species

Classification of Endangered and Threatened Species	Potential for Impact Due to Marvin Nichols Reservoir	Number Present in Counties Where Marvin Nichols Reservoir Would be Located
Federal Endangered Species	No Potential to Low Potential	3
	Moderate Potential	0
	High Potential	0
Federal Threatened Species	No Potential to Low Potential	0
	Moderate Potential	0
	High Potential	0
Texas Endangered Species	No Potential to Low Potential	4
	Moderate Potential	0
	High Potential	0
Texas Threatened Species	No Potential to Low Potential	14
	Moderate Potential	3
	High Potential	0

Of the Federally listed species, there are three potential species that are listed in the counties where Marvin Nichols would be located, but none of these species are expected to be impacted by the reservoir. There are a total of 21 threatened or endangered State-listed species within these counties, but only three threatened species have moderate potential to be impacted by the reservoir, and none have high potential. Because there are three State-listed threatened species potentially present in the counties in which Marvin Nichols Reservoir would be located, additional studies may be required to assess the impact on these species, if any, as reservoir development continues. According to the *Environmental Evaluation Interim*

Report – Sulphur River Basin – Comparative Assessment, "The Texas Endangered Species Act does not protect wildlife species from indirect or incidental take (e.g., destruction of habitat, unfavorable management practices, etc.). The TPWD has a Memorandum of Understanding with every state agency to conduct a thorough environmental review of state initiated and funded projects, such as highways, reservoirs, land acquisition, and building construction, to determine their potential impact on state endangered or threatened species." [4]

3. Analysis and Quantification of the Impacts on Agricultural Resources

3.1 Requirements of Texas Water Code and Texas Water Development Board Rules

The requirements for quantitative reporting on the impacts of water management strategies on agricultural resources are included in the Board rules in Texas Administrative Code §357, included in Appendix E. Specifically, §357.34(d)(3)(C) requires that the quantitative reporting address impacts on agricultural resources. The rules do not include any more detailed description of what quantitative reporting is required. To respond to this requirement, this report provides the following quantitative reporting on the impacts of the proposed Marvin Nichols Reservoir on agricultural resources:

- Inundation of land potentially useful as agricultural resources
- Loss of timber harvests
- Inundation of prime farmlands.

3.2 Available Data for Impacts on Agricultural Resources

Data on impacts to land cover types potentially useful as agricultural resources is based on a land classification developed for the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[4] The data available from that report has been adapted by a simplified re-classification that expands the geographic scope of the analysis for purposes of comparison within this study. Data on the loss of timber harvests is developed from data maintained by the Texas A&M Forestry Service. In the early 2000s, two analyses of the proposed Marvin Nichols reservoir's impacts on timber resources were performed, which reached radically different conclusions[8,9]. Both reports consider the impacts of a previous concept for the proposed Marvin Nichols Reservoir that differs in both size and location from the current concept for the reservoir and which is no longer being considered. Because these studies analyze a different project, they are not considered to be relevant for the current analysis. Data on inundation of prime farmlands is developed from prime farmland data maintained by the U.S. Department of Agriculture Natural Resources Conservation Service.

3.3 Impacts Due to Inundation of Land Potentially Useful as Agricultural Resources

The development of land cover type information for the proposed Marvin Nichols Reservoir is discussed in Section 2.4 and Appendices G and H. Five of the land cover types present in the footprint of the reservoir are potentially useful as agricultural resources. Forested wetlands, bottomland hardwoods, and upland forests might be useful in the growth and harvesting of timber (silvicultural activities). Row crops represent current farming activities. Grassland/old field would potentially include land used for grazing of livestock, although it would also include grassland not currently used for agricultural purposes. Table 6 includes information on the area of these land cover types that would be inundated by the Marvin Nichols Reservoir. To allow consideration of the impacts to agricultural resources of Region D and Texas, the areas of these cover types for Region D are included in the table.

Table 6
Quantitative Reporting on Impacts on Agricultural Resources - Land Potentially Useful for Agriculture

Cover Type	Area (Acres)		Marvin Nichols Reservoir Area as a Percent of Region D
	Marvin Nichols Reservoir	Region D	
Bottomland Hardwood Forest	10,156	417,265	2.4%
Forested Wetland	21,444	414,573	5.2%
Grassland/Old Field	18,241	2,872,649	0.6%
Row Crops	706	314,184	0.2%
Upland Forest	11,223	2,689,079	0.4%
Other Land Cover Types	4,333	626,024	0.7%
Total	**66,103**	**7,333,774**	0.9%

The most significant impacts to agricultural resources relative to the resources of Region D and of Texas are on resources that could potentially be useful to the silviculture industry. These impacts are discussed further (in terms of impacts on timberland and timber sales) in Section 3.4 below.

3.3 Impacts Due to Inundation of Prime Farmland

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) maintains data on prime farmland, which is defined as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses.[10]" Prime farmland is not necessarily currently in agricultural use, but it must be available for agricultural use. For example, prime farmland soils underlying an urban area would not be counted as prime farmland because they are not available for agricultural uses. Table 7 shows the acreage of prime farmland that would be inundated by the proposed Marvin Nichols Reservoir compared to prime farmland area in Region D and Texas. Marvin Nichols Reservoir would inundate 0.76 percent of the prime farmland in Region D and 0.04 percent of the prime farmland in Texas.

Table 7
Quantitative Reporting on Impacts on Agricultural Resources – Prime Farmland

Cover Type	Area (Acres)			Marvin Nichols Reservoir Area as a Percent of Area in:	
	Marvin Nichols Reservoir	Region D	Texas	Region D	Texas
Prime Farmland	14,893	1,949,929	35,087,200	0.76%	0.04%

3.4 Impacts on Timberland and Timber Harvests

Agricultural use of the land that would be inundated by the proposed Marvin Nichols Reservoir includes the production of timber. The Texas A&M Forest Service maintains data on timberland, timber harvest, and the stumpage value of harvests by county. As part of this study, Freese and Nichols contacted the Texas A&M Forest Service to obtain information on the impact of the proposed Marvin Nichols Reservoir on timber resources. Unfortunately, the Texas A&M Forest Service database was not designed to provide information for relatively small areas like the proposed Marvin Nichols Reservoir. The Texas A&M Forest Service indicated that analysis of the data at the county level and above would be most meaningful.

The Texas A&M Forest Service produces annual reports of Harvest Trends for timber products in East Texas, which includes most of the timberland and timber production in Texas. Figure 4 shows the area covered by the Harvest Trends reports, as well as the location of the proposed Marvin Nichols Reservoir and the boundaries of Region D. Most of Region D (except for the western counties) is covered by the Harvest Trends Reports.

Although information on the inundation of timberland by the proposed reservoir cannot be gathered directly from data maintained by the Texas A&M Forest Service, it is possible to estimate the magnitude of impacts by looking at county data. Almost all of the footprint of the proposed Marvin Nichols Reservoir is located in Red River, Titus and Franklin Counties. (There are extremely small areas of the reservoir in Delta and Lamar Counties, but they are contained on the Sulphur River floodway channel and would not have forested land.) The total timberland in these three counties is 523,629 acres, and the total of the bottomland hardwood, forested wetland, and upland forest cover types is slightly more, at 531,200 acres. If we treat these three land cover types as a close approximation of timberland, the proposed Marvin Nichols Reservoir will inundate about 42,823 acres of timberland (Table 8), or about 8.2 percent of the 523,629 acres of timberland in Red River, Titus and Franklin Counties.

Table 8 provides data on potential timberland in Marvin Nichols Reservoir and timberland in Region D[11] and East Texas.[12] Note that the data for Region D and East Texas include only the area shown in Figure 4. The data for Region D and East Texas were obtained from the Texas Forest Service data set.[11,12]

Figure 4
Region D and Area Covered by Harvest Trends Report

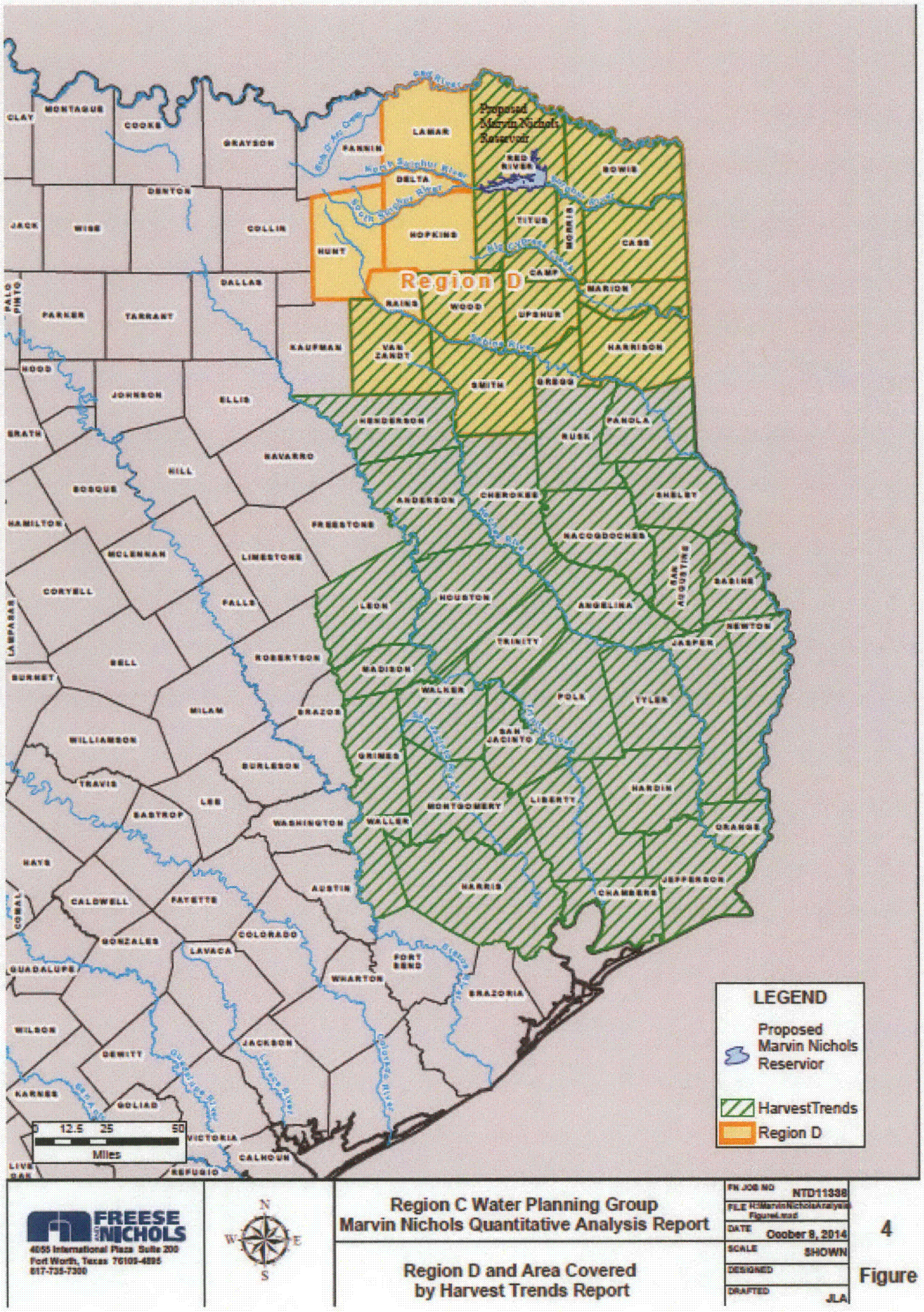


Table 8
Potential Timberland in Marvin Nichols Reservoir

	Area (Acres)	Fraction in Marvin Nichols
Potential Timberland in Marvin Nichols Reservoir		
Bottomland Hardwoods	10,156	N/A
Forested Wetlands	21,444	N/A
Upland Forest	11,223	N/A
Total Potential Timberland	**42,823**	N/A
Total Timberland in Region D	**2,698,272**	**1.6%**
Total Timberland in East Texas	**11,906,539**	**0.4%**

Table 9
Estimated Impact of Marvin Nichols Reservoir on Timber Harvest Values

County	Volume Harvested (Cubic Feet)			Stumpage Value of the Harvest
	Pine	Hardwood	Total	
Franklin	326,276	1,144,085	1,470,361	$539
Red River	4,509,199	5,140,016	9,649,215	$3,546
Titus	1,001,683	1,566,883	2,568,566	$1,077
Total for Marvin Nichols Counties	5,837,158	7,850,984	13,688,142	$5,162
Estimated Stumpage Value for Marvin Nichols (8.2% of Total for Counties)				**$423**
Total for Region D (not including Hunt, Lamar, Delta, Hopkins and Rains Counties)	67,709,902	44,420,920	112,130,822	$46,138
Total for East Texas (See Figure 3)	419,568,624	101,963,374	521,531,998	$232,606

Table 9 is a summary of data on timber sales taken from the Texas A&M Forest Service report *Harvest Trends 2013.*[13] These data are available only on a county-wide basis. Note that the potential timberland inundated by the proposed Marvin Nichols Reservoir is estimated to be 8.2 percent of the timberland in Red River, Titus and Franklin Counties. As a result, the timber harvest volume and stumpage value from the reservoir area is assumed to be about 8.2 percent of the total value for the three counties. (The stumpage value is the value of the timber harvested, not including the costs of processing and delivering the timber.) The estimated stumpage value of the timber harvests in the Marvin Nichols Reservoir pool is less than one percent of the total for Region D and less than 0.2 percent of the total for East Texas. (None of the 23 East Texas Counties with the highest timber harvest values (all over $4,000,000) would be affected by Marvin Nichols Reservoir.)

4. Mitigation and the Effect of Mitigation on Impacts to Natural and Agricultural Resources

Developers of a new reservoir project are often required to provide mitigation for the impacts on natural resources in the form of land set aside, protected from development, and managed to enhance ecological value. Mitigation is generally only required for specific types of resources that would be impacted such as waters of the U.S. and the state, including wetlands. The developer of a project gets mitigation credit for improving the environmental functions of the land used for mitigation. The usual approach is to purchase degraded areas with limited environmental value and improve them through restoration, enhancement and careful management to achieve desired compensatory results at minimum cost.

Table 10 gives information on historical mitigation requirements for Texas reservoirs. Two additional reservoirs, Lower Bois d'Arc Creek Reservoir and Lake Ralph Hall, are currently in the permitting process, and mitigation requirements have not yet been finalized. Significant land has been acquired for mitigation for Lower Bois d'Arc Creek Reservoir, and the transaction was on a willing buyer-willing seller basis, with no condemnation of land.

Mitigation offsets the impacts of a project on natural resources by improving the ecological functions of other land. Mitigation would be expected to offset the impacts of the proposed Marvin Nichols Reservoir on natural resources. On the other hand, mitigation to protect natural resources may increase the impact on agricultural resources if the land acquired for mitigation is currently in agricultural use. (Because of the management of mitigation land to enhance ecological values, farming is unlikely to be allowed. Other agricultural uses, like timbering, would probably also be impossible or face significant controls and restrictions.)

Mitigation requirements for new reservoirs are generally determined during the permitting process, and the requirements for the proposed Marvin Nichols Reservoir are not yet known. Estimates of mitigation requirements have been developed as part of cost estimates for the project.[14] The mitigation acreage required is estimated as twice the acreage of waters of the United States, other than non-stream open waters, that are impacted by the project. For the proposed Marvin Nichols Reservoir, the acreage of potential waters of the U.S., other than non-stream open waters, was estimated to be 23,530 acres. The estimated mitigation requirement is twice that amount, or 47,060 acres. This is consistent with historical mitigation requirements for reservoirs in Texas. In the case of Marvin Nichols Reservoir, the land acquired for mitigation would probably include a large percentage of forested wetlands, which makes up most of the acreage of waters of the U.S. that would be affected by the reservoir. It should be emphasized that this is only an estimate. Actual mitigation requirements and location will be developed as permitting for the proposed reservoir proceeds. As discussed above, mitigation is intended to offset impacts on natural resources but may increase impacts to agricultural resources.

Table 10
Mitigation Requirements for Texas Reservoirs

Project	Date Impounded	Conservation Pool Area (Acres)	Required Mitigation Area (Acres)	Mitigation Ratio	Comments
Alan Henry	1993	2,884	3,000	1.04 to 1	Mitigation Downstream
Applewhite	Not completed (permitted in 1989)	2,500	2,500	1.0 to 1	Planned mitigation downstream
Chapman	1991	19,200	35,500	1.85 to 1	Mitigation next to reservoir and downstream
Gilmer	1997	1,010	1,557	1.54 to 1	
Joe Pool	1986	7,470	0	None	
Mitchell County	1993	1,463	0	None	
O.H. Ivie	1990	19,149	5,990	0.31 to 1	Mitgation next to reservoir
Palo Duro	1989	2,413	0	None	
Ray Roberts	1986	29,350	0	None	
Richland-Chambers	1987	44,752	13,700	0.31 to 1	Mitigation Downstream

5. Additional Information

Table 11 shows the needs for additional water supplies in the Trinity and Sulphur Basins, taken from the Texas Water Development Board database for the 2011 regional water plans[15]. The Texas Water Development Board defines needs as the difference between the supply currently available and the projected demands for a water user group. Table 11 shows the sum of net needs by river basin and planning group. For suppliers that have a surplus, needs are set at zero. As the table shows, there is need for considerable additional water supply in the Trinity Basin, particularly in Region C.

Table 11
Needs for Additional Water Supply in the Trinity and Sulphur Basins

Basin	Region	Sum of Supply Needs for All Suppliers (Acre-Feet)					
		2010	**2020**	**2030**	**2040**	**2050**	**2060**
Trinity Basin	B	282	307	322	324	295	296
	C	68,871	392,545	671,835	932,746	1,215,968	1,549,685
	D	0	0	21	32	59	126
	G	307	2,253	5,978	9,836	14,508	19,526
	H	32,364	39,404	45,526	51,129	57,515	64,565
	I	21	116	466	846	1,265	1,802
	Total	**101,845**	**434,625**	**724,148**	**994,913**	**1,289,610**	**1,636,000**
Sulphur Basin	C	3	260	462	608	793	1,055
	D	977	1,215	1,554	2,209	3,314	5,058
	Total	**980**	**1,475**	**2,016**	**2,817**	**4,107**	**6,113**

Appendix A

List of References

List of References

1. Freese and Nichols, Inc., Alan Plummer Associates, Inc., CP&Y, Inc., and Cooksey Communications, Inc. *2011 Region C Water Plan*. October 2010.
2. Bucher Willis & Ratliff Corporation, Hayter Engineering, Inc., Hayes Engineering Company, Bob Bowman Associates, and LBG Guyton Associates. *Regional Water Plan Prepared for the Region D - North East Texas Regional Water Planning Group.* September 1, 2010.
3. Patteson, Kevin. Memo on *Resolution of the Interregional Conflict between the 2011 Region C and the Region D Regional Water Plans*. Austin: Texas Water Development Board, 19 May 2014. PDF.
4. Freese and Nichols, Inc. *Environmental Evaluation Interim Report - Sulphur River Basin - Comparative Assessment.* 2013.
5. Texas Parks and Wildlife Department: *Texas Wetlands Conservation Plan*, Austin, 1997.
6. U.S. Geological Survey: Open-File Report 87-242, *Water Fact Sheet – Largest Rivers in the United States*, Washington D.C., May 1990.
7. U.S. Census Bureau: *Statistical Abstract of the United States: 2012*, Table 365, Washington, D.C.
8. Xu, Ph.d. Weihuan, and Publication 162. *The Economic Impact of the Proposed Marvin Nichols I Reservoir to the Northeast Texas Forest Industry* (n.d.): n. pag. Texas Forest Service, Aug. 2002. Web. 15 Oct. 2014.
9. Weinstein, Bernard L., Ph.D., and Terry L. Clower, Ph.D. T*he Economic, Fiscal, and Developmental Impacts of the Proposed Marvin Nichols Reservoir Project* (n.d.): n. pag. The Sulphur River Basin Authority, Mar. 2003. Web. 15 Oct. 2014.
10. U.S. Department of Agriculture Natural Resources Conservation Service and Iowa State University Center for Survey Statistics and Methodology: Summary Report: 2010 National Resources Inventory, September 2013. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1167354.pdf
11. Miles, P.D. Monday September 29 10:25:58 MDT 2014. Forest Inventory EVALIDator web-application version 1.6.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://apps.fs.fed.us/Evalidator/evalidator.jsp]
12. Miles, P.D. Monday September 29 09:07:52 MDT 2014. Forest Inventory EVALIDator web-application version 1.6.0.01. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: http://apps.fs.fed.us/Evalidator/evalidator.jsp]
13. Texas A&M Forest Service. *Harvest Trends 2013*. Texas A&M Forest Service. Sept. 2014. Web. 9 Oct. 2014.
14. Freese and Nichols, Inc., and MTG Engineers and Surveyors. *Sulphur River Basin Feasibility Study - Cost Rollup Report*. Rep. N.p.: Sulphur Basin Group, n.d. Print.
15. *2012 Regional Water Planning Database (DB12)*. Texas Water Development Board, 2012. Downloaded 8 Oct. 2014.

Appendix B

Texas Water Development Board Interim Order of August 8, 2014

TEXAS WATER DEVELOPMENT BOARD

AN INTERIM ORDER concerning the interregional conflict between the 2011 North Central Texas Regional Planning Area Regional Water Plan and the 2011 North East Texas Regional Planning Area Regional Water Plan in accordance with Texas Water Code § 16.053.

On August 7, 2014, the Texas Water Development Board (Board) considered the interregional conflict between the 2011 North Central Texas Regional Planning Area (Region C) Regional Water Plan and the 2011 North East Texas Regional Planning Area (Region D) Regional Water Plan.

After considering the oral argument of the parties and the filings in this matter, the Board determined that there was inadequate analysis and quantification of the impact of the Marvin Nichols Reservoir Water Management Strategy on the agricultural and natural resources of Region D and the State.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS WATER DEVELOPMENT BOARD that:

1. Region C is directed to conduct an analysis and quantification of the impacts of the Marvin Nichols Reservoir Water Management Strategy on the agriculture and natural resources of Region D and the State, pursuant to Sections 16.051 and 16.053 of the Texas Water Code and Chapters 357 and 358 of Board rules. Region C should submit this analysis and quantification to the Board by November 3, 2014. Upon receipt of the analysis and quantification, the Executive Administrator and Region D will be given the opportunity to submit a written response to the submission, and the matter will be scheduled for Board consideration. If no submittal is received by the Board on or before November 3, 2014, this matter will set for a Board Meeting to direct the Regions to revise

their regional water plans reflecting the removal of the Marvin Nichols Reservoir Water Management Strategy from the 2011 Region C Plan, without prejudice.

2. The Executive Administrator is directed to undertake an examination of current rules and guidance pertaining to the development of regional water plans, and identify any opportunities for: ensuring that future regional and state water planning efforts include all statutorily-required analyses; and defining "interregional conflict" in a manner that is consistent with the ruling of the 11th Court of Appeals in *Texas Water Development Board vs. Ward Timber, Ltd.*, 411 S.W.3d 554 (Tex. App.-Eastland 2013, no pet.).

3. The Region C and Region D regional water planning groups are encouraged to continue to participate in the Sulphur River Basin Study.

Issue Date: August 8, 2014

TEXAS WATER DEVELOPMENT BOARD

Carlos Rubinstein, Chairman

Appendix C

Texas Water Code Section 16.051

WATER CODE

TITLE 2. WATER ADMINISTRATION

SUBTITLE C. WATER DEVELOPMENT

CHAPTER 16. PROVISIONS GENERALLY APPLICABLE TO WATER DEVELOPMENT

SUBCHAPTER C. PLANNING

SEC. 16.051. STATE WATER PLAN: DROUGHT, CONSERVATION, DEVELOPMENT, AND MANAGEMENT; EFFECT OF PLAN.

(a) Not later than January 5, 2002, and before the end of each successive five-year period after that date, the board shall prepare, develop, formulate, and adopt a comprehensive state water plan that incorporates the regional water plans approved under Section 16.053. The state water plan shall provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions, in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of the entire state.

(a-1) The state water plan must include:

(1) an evaluation of the state's progress in meeting future water needs, including an evaluation of the extent to which water management strategies and projects implemented after the adoption of the preceding state water plan have affected that progress; and

(2) an analysis of the number of projects included in the preceding state water plan that received financial assistance from the board.

(a-2) To assist the board in evaluating the state's progress in meeting future water needs, the board may obtain implementation data from the regional water planning groups.

(b) The state water plan, as formally adopted by the board, shall be a guide to state water policy. The commission shall take the plan into consideration in matters coming before it.

(c) The board by rule shall define and designate river basins and watersheds.

(d) The board, in coordination with the commission, the Department of Agriculture, and the Parks and Wildlife Department, shall adopt by rule guidance principles for the state water plan which reflect the public interest of the entire state. When adopting guidance principles, due consideration shall be given to the construction and improvement of surface water resources and the application of principles that result in voluntary redistribution of water resources. The board shall review and update the guidance principles, with input from the commission, the Department of Agriculture, and the Parks and Wildlife Department, as necessary but at least every five years to coincide with the five-year cycle for adoption of a new water plan as described in Subsection (a).

(e) On adoption the board shall deliver the state water plan to the governor, the lieutenant governor, and the speaker of the house of representatives and present the plan for review to the appropriate legislative committees. The plan shall include legislative recommendations that the board believes are needed and desirable to facilitate more voluntary water transfers. The plan shall identify river and stream segments of unique ecological value and sites of unique value for the construction of reservoirs that the board recommends for protection under this section.

(f) The legislature may designate a river or stream segment of unique ecological value. This designation solely means that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in a specific river or stream segment designated by the legislature under this subsection.

(g) The legislature may designate a site of unique value for the construction of a reservoir. A state agency or political subdivision of the state may not obtain a fee title or an easement that would significantly prevent the construction of a reservoir on a site designated by the legislature under this subsection.

> (g-1) Notwithstanding any other provisions of law, a site is considered to be a designated site of unique value for the construction of a reservoir if the site is recommended for designation in the 2007 state water plan adopted by the board and in effect on May 1, 2007. The designation of a unique reservoir site under this subsection terminates on September 1, 2015, unless there is an affirmative vote by a proposed project sponsor to make expenditures necessary in order to construct or file applications for permits required in connection with the construction of the reservoir under federal or state law.

(h) The board, the commission, or the Parks and Wildlife Department or a political subdivision affected by an action taken in violation of Subsection (f) or (g) may bring a cause of action to remedy or prevent the violation. A cause of action brought under this subsection must be filed in a district court in Travis County or in the county in which the action is proposed or occurring.

(i) For purposes of this section, the acquisition of fee title or an easement by a political subdivision for the purpose of providing retail public utility service to property in the reservoir site or allowing an owner of property in the reservoir site to improve or develop the property may not be considered a significant impairment that prevents the construction of a reservoir site under Subsection (g). A fee title or easement acquired under this subsection may not be considered the basis for preventing the future acquisition of land needed to construct a reservoir on a designated site.

Amended by Acts 1977, 65th Leg., p. 2207, ch. 870, Sec. 1, eff. Sept. 1, 1977; Acts 1985, 69th Leg., ch. 795, Sec. 1.046, eff. Sept. 1, 1985; Acts 1991, 72nd Leg., ch. 516, Sec. 4, eff. Sept. 1, 1991; Acts 1997, 75th Leg., ch. 1010, Sec. 1.01, eff. Sept. 1, 1997; Acts 1999, 76th Leg., ch. 456, Sec. 4, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 979, Sec. 4, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 1223, Sec. 2, eff. June 18, 1999; Acts 2001, 77th Leg., ch. 966, Sec. 2.16, eff. Sept. 1, 2001.

Amended by:

Acts 2007, 80th Leg., R.S., Ch. 1430 (S.B. 3), Sec. 3.01, eff. September 1, 2007.

Acts 2007, 80th Leg., R.S., Ch. 1430 (S.B. 3), Sec. 4.01, eff. June 16, 2007.

Acts 2011, 82nd Leg., R.S., Ch. 1233 (S.B. 660), Sec. 8, eff. September 1, 2011.

Appendix D

Texas Water Code Section 16.053

WATER CODE

TITLE 2. WATER ADMINISTRATION

SUBTITLE C. WATER DEVELOPMENT

CHAPTER 16. PROVISIONS GENERALLY APPLICABLE TO WATER DEVELOPMENT

SUBCHAPTER C. PLANNING

SEC. 16.053. REGIONAL WATER PLANS.

(a) The regional water planning group in each regional water planning area shall prepare a regional water plan, using an existing state water plan identified in Section 16.051 of this code and local water plans prepared under Section 16.054 of this code as a guide, if present, that provides for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of that particular region.

(b) No later than September 1, 1998, the board shall designate the areas for which regional water plans shall be developed, taking into consideration such factors as river basin and aquifer delineations, water utility development patterns, socioeconomic characteristics, existing regional water planning areas, political subdivision boundaries, public comment, and other factors the board deems relevant. The board shall review and update the designations as necessary but at least every five years.

(c) No later than 60 days after the designation of the regions under Subsection (b), the board shall designate representatives within each regional water planning area to serve as the initial coordinating body for planning. The initial coordinating body may then designate additional representatives to serve on the regional water planning group. The initial coordinating body shall designate additional representatives if necessary to ensure adequate representation from the interests comprising that region, including the public, counties, municipalities, industries, agricultural interests, environmental interests, small businesses, electric generating utilities, river authorities, water districts, and water utilities. The regional water planning group shall maintain adequate representation from those interests. In addition, the groundwater conservation districts located in each management area, as defined by Section 36.001, located in the regional water planning area shall appoint one representative of a groundwater conservation district located in the management area and in the regional water planning area to serve on the regional water planning group. In addition, representatives of the board, the Parks and Wildlife Department, and the Department of Agriculture shall serve as ex officio members of each regional water planning group.

(d) The board shall provide guidelines for the consideration of existing regional planning efforts by regional water planning groups. The board shall provide guidelines for the format in which information shall be presented in the regional water plans.

(e) Each regional water planning group shall submit to the development board a regional water plan that:

(1) is consistent with the guidance principles for the state water plan adopted by the development board under Section 16.051(d);

(2) provides information based on data provided or approved by the development board in a format consistent with the guidelines provided by the development board under Subsection (d);

(2-a) is consistent with the desired future conditions adopted under Section 36.108 for the relevant aquifers located in the regional water planning area as of the date the board most recently adopted a state water plan under Section 16.051 or, at the option of the regional water planning group, established subsequent to the adoption of the most recent plan;

(3) identifies:

(A) each source of water supply in the regional water planning area, including information supplied by the executive administrator on the amount of modeled available groundwater in accordance with the guidelines provided by the development board under Subsections (d) and (f);

(B) factors specific to each source of water supply to be considered in determining whether to initiate a drought response;

(C) actions to be taken as part of the response; and

(D) existing major water infrastructure facilities that may be used for interconnections in the event of an emergency shortage of water;

(4) has specific provisions for water management strategies to be used during a drought of record;

(5) includes but is not limited to consideration of the following:

(A) any existing water or drought planning efforts addressing all or a portion of the region;

(B) approved groundwater conservation district management plans and other plans submitted under Section 16.054;

(C) all potentially feasible water management strategies, including but not limited to improved conservation, reuse, and management of existing water supplies, conjunctive use, acquisition of available existing water supplies, and development of new water supplies;

(D) protection of existing water rights in the region;

(E) opportunities for and the benefits of developing regional water supply facilities or providing regional management of water supply facilities;

(F) appropriate provision for environmental water needs and for the effect of upstream development on the bays, estuaries, and arms of the Gulf of Mexico and the effect of plans on navigation;

(G) provisions in Section 11.085(k)(1) if interbasin transfers are contemplated;

(H) voluntary transfer of water within the region using, but not limited to, regional water banks, sales, leases, options, subordination agreements, and financing agreements; and

(I) emergency transfer of water under Section 11.139, including information on the part of each permit, certified filing, or certificate of adjudication for nonmunicipal use in the region that may be transferred without causing unreasonable damage to the property of the nonmunicipal water rights holder;

(6) identifies river and stream segments of unique ecological value and sites of unique value for the construction of reservoirs that the regional water planning group recommends for protection under Section 16.051;

(7) assesses the impact of the plan on unique river and stream segments identified in Subdivision (6) if the regional water planning group or the legislature determines that a site of unique ecological value exists;

(8) describes the impact of proposed water projects on water quality; and

(9) includes information on:

(A) projected water use and conservation in the regional water planning area; and

(B) the implementation of state and regional water plan projects, including water conservation strategies, necessary to meet the state's projected water demands.

(e-1) On request of the Texas Water Advisory Council, a regional planning group shall provide the council a copy of that planning group's regional water plan.

(f) No later than September 1, 1998, the board shall adopt rules:

(1) to provide for the procedures for adoption of regional water plans by regional water planning groups and for approval of regional water plans by the board; and

(2) to govern procedures to be followed in carrying out the responsibilities of this section.

(g) The board shall provide technical and financial assistance to the regional water planning groups in the development of their plans. The board shall simplify, as much as possible, planning requirements in regions with abundant water resources. The board, if requested, may facilitate resolution of conflicts within regions.

(h)(1) Prior to the preparation of the regional water plan, the regional water planning group shall, after notice, hold at least one public meeting at some central location within the regional planning area to gather suggestions and recommendations from the public as to issues that should be addressed in the plan or provisions that should be considered for inclusion in the plan.

(2) The regional water planning group shall provide an ongoing opportunity for public input during the preparation of the regional water plan.

(3) After the regional water plan is initially prepared, the regional water planning group shall, after notice, hold at least one public hearing at some central location within the regional water planning area. The group shall make copies of the plan available for public inspection at least one month before the hearing by providing a copy of the plan in the county courthouse and at least

one public library of each county having land in the region. Notice for the hearing shall include a listing of these and any other location where the plan is available for review.

(4) After the regional water plan is initially prepared, the regional water planning group shall submit a copy of the plan to the board. The board shall submit comments on the regional water plan as to whether the plan meets the requirements of Subsection (e) of this section.

(5) If no interregional conflicts exist, the regional water planning group shall consider all public and board comments; prepare, revise, and adopt the final plan; and submit the adopted plan to the board for approval and inclusion in the state water plan.

(6) If an interregional conflict exists, the board shall facilitate coordination between the involved regions to resolve the conflict. If conflict remains, the board shall resolve the conflict. On resolution of the conflict, the involved regional water planning groups shall prepare revisions to their respective plans and hold, after notice, at least one public hearing at some central location within their respective regional water planning areas. The regional water planning groups shall consider all public and board comments; prepare, revise, and adopt their respective plans; and submit their plans to the board for approval and inclusion in the state water plan.

(7) The board may approve a regional water plan only after it has determined that:

(A) all interregional conflicts involving that regional water planning area have been resolved;

(B) the plan includes water conservation practices and drought management measures incorporating, at a minimum, the provisions of Sections 11.1271 and 11.1272; and

(C) the plan is consistent with long-term protection of the state's water resources, agricultural resources, and natural resources as embodied in the guidance principles adopted under Section 16.051(d).

(8) Notice required by Subdivision (1), (3), or (6) of this subsection must be:

(A) published once in a newspaper of general circulation in each county located in whole or in part in the regional water planning area before the 30th day preceding the date of the public meeting or hearing; and

(B) mailed to:

(i) each mayor of a municipality with a population of 1,000 or more that is located in whole or in part in the regional water planning area;

(ii) each county judge of a county located in whole or in part in the regional water planning area;

(iii) each special or general law district or river authority with responsibility to manage or supply water in the regional water planning area;

(iv) each retail public utility that:

(a) serves any part of the regional water planning area; or

(b) receives water from the regional water planning area; and

(v) each holder of record of a permit, certified filing, or certificate of adjudication for the use of surface water the diversion of which occurs in the regional water planning area.

(9) Notice published or mailed under Subdivision (8) of this subsection must contain:

(A) the date, time, and location of the public meeting or hearing;

(B) a summary of the proposed action to be taken;

(C) the name, telephone number, and address of the person to whom questions or requests for additional information may be submitted; and

(D) information on how the public may submit comments.

(10) The regional water planning group may amend the regional water plan after the plan has been approved by the board. Subdivisions (1)-(9) apply to an amendment to the plan in the same manner as those subdivisions apply to the plan.

(11) This subdivision applies only to an amendment to a regional water plan approved by the board. This subdivision does not apply to the adoption of a subsequent regional water plan for submission to the board as required by Subsection (i). Notwithstanding Subdivision (10), the regional water planning group may amend the plan in the manner provided by this subdivision if the executive administrator makes a written determination that the proposed amendment qualifies for adoption in the manner provided by this subdivision before the regional water planning group votes on adoption of the amendment. A proposed amendment qualifies for

adoption in the manner provided by this subdivision only if the amendment is a minor amendment, as defined by board rules, that will not result in the overallocation of any existing or planned source of water, does not relate to a new reservoir, and will not have a significant effect on instream flows or freshwater inflows to bays and estuaries. If the executive administrator determines that a proposed amendment qualifies for adoption in the manner provided by this subdivision, the regional water planning group may adopt the amendment at a public meeting held in accordance with Chapter 551, Government Code. The proposed amendment must be placed on the agenda for the meeting, and notice of the meeting must be given in the manner provided by Chapter 551, Government Code, at least two weeks before the date the meeting is held. The public must be provided an opportunity to comment on the proposed amendment at the meeting.

(i) The regional water planning groups shall submit their adopted regional water plans to the board by January 5, 2001, for approval and inclusion in the state water plan. In conjunction with the submission of regional water plans, each planning group should make legislative recommendations, if any, to facilitate more voluntary water transfers in the region. Subsequent regional water plans shall be submitted at least every five years thereafter. Public participation for revised regional plans shall follow the procedures under Subsection (h).

(j) The board may provide financial assistance to political subdivisions under Subchapters E and F of this chapter, Subchapters C, D, E, F, J, O, Q, and R, Chapter 15, and Subchapters D, I, K, and L, Chapter 17, for water supply projects only if:

(1) the board determines that the needs to be addressed by the project will be addressed in a manner that is consistent with the state water plan;

(2) beginning January 5, 2002, the board:

(A) has approved a regional water plan as provided by Subsection (i), and any required updates of the plan, for the region of the state that includes the area benefiting from the proposed project; and

(B) determines that the needs to be addressed by the project will be addressed in a manner that is consistent with that regional water plan; and

(3) the board finds that the water audit required under Section 16.0121 has been completed and filed.

(k) The board may waive the requirements of Subsection (j) of this section if the board determines that conditions warrant the waiver.

(l) A political subdivision may contract with a regional water planning group to assist the regional water planning group in developing or revising a regional water plan.

(m) A cause of action does not accrue against a regional water planning group, a representative who serves on the regional water planning group, or an employee of a political subdivision that contracts with the regional water planning group under Subsection (l) for an act or omission in the course and scope of the person's work relating to the regional water planning group.

(n) A regional water planning group, a representative who serves on the regional water planning group, or an employee of a political subdivision that contracts with the regional water planning group under Subsection (l) is not liable for damages that may arise from an act or omission in the course and scope of the person's work relating to the regional water planning group.

(o) The attorney general, on request, shall represent a regional water planning group, a representative who serves on the regional water planning group, or an employee of a political subdivision that contracts with the regional water planning group under Subsection (l) in a suit arising from an act or omission relating to the regional water planning group.

(p) If a groundwater conservation district files a petition with the development board stating that a conflict requiring resolution may exist between the district's approved management plan developed under Section 36.1071 and an approved state water plan, the development board shall provide technical assistance to and facilitate coordination between the district and the involved region to resolve the conflict. Not later than the 45th day after the date the groundwater conservation district files a petition with the development board, if the conflict has not been resolved, the district and the involved region shall mediate the conflict. The district and the involved region may seek the assistance of the Center for Public Policy Dispute Resolution at The University of Texas School of Law or an alternative dispute resolution system established under Chapter 152, Civil Practice and Remedies Code, in obtaining a qualified impartial third party to mediate the conflict. The cost of the mediation services must be specified in the agreement between the parties and the Center for Public Policy Dispute Resolution or the alternative dispute resolution system. If the district and the involved region cannot resolve the conflict through mediation, the development board shall resolve the conflict not later than the 60th day after the date the mediation is completed as provided by Subsections (p-1) and (p-2).

(p-1) If the development board determines that resolution of the conflict requires a revision of an approved regional water plan, the development board shall suspend the approval of that plan and provide information to the regional water planning group. The regional water planning group shall prepare any revisions to its plan specified by the development board and shall hold, after notice, at least one public hearing at some central location within the regional water planning area. The regional water planning group shall consider all public and development board comments, prepare, revise, and adopt its plan, and submit the revised plan to the development board for approval and inclusion in the state water plan.

(p-2) If the development board determines that resolution of the conflict requires a revision of the district's approved groundwater conservation district management plan, the development board shall provide information to the district. The groundwater district shall prepare any revisions to its plan based on the information provided by the development board and shall hold, after notice, at least one public hearing at some central location within the district. The groundwater district shall consider all public and development board comments, prepare, revise, and adopt its plan, and submit the revised plan to the development board.

(p-3) If the groundwater conservation district disagrees with the decision of the development board under Subsection (p), the district may appeal the decision to a district court in Travis County. Costs for the appeal shall be set by the court hearing the appeal. An appeal under this subsection is by trial de novo.

(p-4) On the request of the involved region or groundwater conservation district, the development board shall include discussion of the conflict and its resolution in the state water plan that the development board provides to the governor, the lieutenant governor, and the speaker of the house of representatives under Section 16.051(e).

(q) Each regional planning group shall examine the financing needed to implement the water management strategies and projects identified in the group's most recent approved regional plan and, not later than June 1, 2002, shall report to the board regarding:

(1) how local governments, regional authorities, and other political subdivisions in the region propose to pay for water infrastructure projects identified in the plan; and

(2) what role the regional planning group proposes for the state in financing projects identified in the plan, giving particular attention to proposed increases in the level of state participation in

funding for regional projects to meet needs beyond the reasonable financing capability of local governments, regional authorities, and other political subdivisions involved in building water infrastructure.

Text of subsection as added by Acts 2005, 79th Leg., R.S., Ch. 1200 (H.B. 578), Sec. 1

(r) Information described by Subsection (e)(3)(D) that is included in a regional water plan submitted to the board is excepted from required disclosure under the public information law, Chapter 552, Government Code.

Text of subsection as added by Acts 2005, 79th Leg., R.S., Ch. 1097 (H.B. 2201), Sec. 8 and amended by Acts 2007, 80th Leg., R.S., Ch. 1430 (S.B. 3), Sec. 2.15

(r) The board by rule shall provide for reasonable flexibility to allow for a timely amendment of a regional water plan, the board's approval of an amended regional water plan, and the amendment of the state water plan. If an amendment under this subsection is to facilitate planning for water supplies reasonably required for a clean coal project, as defined by Section 5.001, the rules may allow for amending a regional water plan without providing notice and without a public meeting or hearing under Subsection (h) if the amendment does not:

(1) significantly change the regional water plan, as reasonably determined by the board; or

(2) adversely affect other water management strategies in the regional water plan.

Amended by Acts 1977, 65th Leg., p. 2207, ch. 870, Sec. 1, eff. Sept. 1, 1977; Acts 1985, 69th Leg., ch. 795, Sec. 1.047, eff. Sept. 1, 1985; Acts 1997, 75th Leg., ch. 1010, Sec. 1.02, eff. Sept. 1, 1997; Acts 1999, 76th Leg., ch. 456, Sec. 5, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 979, Sec. 5, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 1180, Sec. 1, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 1222, Sec. 2, eff. June 18, 1999; Acts 1999, 76th Leg., ch. 1223, Sec. 3, eff. June 18, 1999; Acts 2001, 77th Leg., ch. 966, Sec. 2.17 to 2.19, eff. Sept. 1, 2001; Acts 2001, 77th Leg., ch. 1234, Sec. 25, eff. Sept. 1, 2001; Acts 2003, 78th Leg., ch. 744, Sec. 2, eff. Sept. 1, 2003; Acts 2003, 78th Leg., ch. 1057, Sec. 5, eff. June 20, 2003; Acts 2003, 78th Leg., ch. 1275, Sec. 3(45), eff. Sept. 1, 2003.

Amended by:

Acts 2005, 79th Leg., Ch. 970 (H.B. 1763), Sec. 1, eff. September 1, 2005.

Acts 2005, 79th Leg., Ch. 1097 (H.B. 2201), Sec. 8, eff. June 18, 2005.

Acts 2005, 79th Leg., Ch. 1200 (H.B. 578), Sec. 1, eff. September 1, 2005.

Acts 2007, 80th Leg., R.S., Ch. 1430 (S.B. 3), Sec. 2.14, eff. September 1, 2007.

Acts 2007, 80th Leg., R.S., Ch. 1430 (S.B. 3), Sec. 2.15, eff. September 1, 2007.

Acts 2011, 82nd Leg., R.S., Ch. 595 (S.B. 181), Sec. 1, eff. June 17, 2011.

Acts 2011, 82nd Leg., R.S., Ch. 1233 (S.B. 660), Sec. 9, eff. September 1, 2011.

Appendix E

Texas Administrative Code Title 31 Part 10 Chapter 357: Regional Water Planning Rules

Texas Administrative Code

Next Rule>>

TITLE 31 NATURAL RESOURCES AND CONSERVATION
PART 10 TEXAS WATER DEVELOPMENT BOARD
CHAPTER 357 REGIONAL WATER PLANNING
SUBCHAPTER A GENERAL INFORMATION
RULE §357.10 **Definitions and Acronyms**

The following words, used in this chapter, have the following meanings.

(1) Alternative water management strategy--A fully evaluated water management strategy that may be substituted into a regional water plan in the event that a recommended water management strategy is no longer recommended.

(2) Availability--Maximum amount of water available from a source during the drought of record, regardless of whether the supply is physically or legally available to water user groups.

(3) Board--The Texas Water Development Board.

(4) Collective Reporting Unit--A grouping of utilities located in the Regional Water Planning Area. Utilities within a Collective Reporting Unit must have a logical relationship, such as being served by common wholesale water providers, having common sources, or other appropriate associations.

(5) Commission--The Texas Commission on Environmental Quality.

(6) Consistency between a regional water plan and a desired future condition--A regional water plan is consistent with a desired future condition if the groundwater availability amount in the regional water plan and on which an existing water supply or recommended water management strategy relies does not exceed the modeled available groundwater amount associated with the desired future condition for the relevant aquifers. The desired future condition must be either the desired future condition adopted as of the date the Board most recently adopted a state water plan or, at the option of the regional water planning group, a desired future condition adopted on a subsequent date.

(7) County-other--An aggregation of residential, commercial, and institutional water users in cities with less than 500 people or utilities that provide less than an average of 250,000 gallons per day, as well as unincorporated rural areas in a given county.

(8) Drought contingency plan--A plan required from wholesale and retail public water suppliers and irrigation districts pursuant to Texas Water Code §11.1272 (relating to Drought Contingency Plans for Certain Applicants and Water Right Holders). The plan may consist of one or more strategies for temporary supply and demand management and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies as required by the Commission.

(9) Drought management measures--Demand management activities to be implemented during drought that may be evaluated and included as water management strategies.

(10) Drought of record--The period of time when natural hydrological conditions provided the least amount of water supply.

(11) Executive administrator (EA)--The executive administrator of the Board or a designated representative.

(12) Existing water supply--Maximum amount of water available from existing sources for use during drought of record conditions that is physically and legally available for use by a water user group.

(13) Firm yield--Maximum water volume a reservoir can provide each year under a repeat of the drought of record using reasonable sedimentation rates and assuming that all senior water rights will be totally utilized.

(14) Interbasin transfer of surface water--Defined and governed in Texas Water Code §11.085 (relating to Interbasin Transfers) as the diverting of any state water from a river basin and transfer of that water to any other river basin.

(15) Interregional conflict--An interregional conflict exists when more than one regional water plan relies upon the same water source, so that there is not sufficient water available to fully implement both plans and would create an over-allocation of that source.

(16) Intraregional conflict--A conflict between two identified, quantified, and recommended water management strategies in the same adopted regional water plan that rely upon the same

water source, so that there is not sufficient water available to fully implement both water management strategies and thereby creating an over-allocation of that source.

(17) Initially Prepared Plan (IPP)--Draft regional water plans that are presented at a public hearing in accordance with §357.21(d) of this title (relating to Notice and Public Participation) and submitted for Board review and comment.

(18) Political subdivision--City, county, district, or authority created under the Texas Constitution, Article III, §52, or Article XVI, §59, any other political subdivision of the state, any interstate compact commission to which the state is a party, and any nonprofit water supply corporation created and operating under Texas Water Code Chapter 67 (relating to Nonprofit Water Supply or Sewer Service Corporations).

(19) Regional water plan (RWP)--The plan adopted or amended by a regional water planning group pursuant to Texas Water Code §16.053 (relating to Regional Water Plans) and this chapter.

(20) Regional water planning area (RWPA)--Area designated pursuant to Texas Water Code §16.053.

(21) Regional water planning group (RWPG)--Group designated pursuant to Texas Water Code §16.053.

(22) Retail public utility--Defined in Texas Water Code §13.002 (relating to Water Rates and Services) as "any person, corporation, public utility, water supply or sewer service corporation, municipality, political subdivision or agency operating, maintaining, or controlling in this state facilities for providing potable water service or sewer service, or both, for compensation."

(23) State Drought Preparedness Plan--A plan, separate from the state water plan, that is developed by the Drought Preparedness Council for the purpose of mitigating the effects of drought pursuant to Texas Water Code §16.0551 (relating to State Drought Preparedness Plan).

(24) State Drought Response Plan--A plan prepared and directed by the chief of the Texas Division of Emergency Management for the purpose of managing and coordinating the drought response component of the State Water Plan and the State Drought Preparedness Plan pursuant to Texas Water Code §16.055 (relating to Drought Response Plan).

(25) State Water Plan--The most recent state water plan adopted by the Board under the Texas Water Code §16.051 (relating to State Water Plan).

(26) Water conservation measures--Practices, techniques, and technologies that will reduce the consumption of water, reduce the loss of waste or water, or improve the efficiency in the use of water that may be presented as water management strategies.

(27) Water Conservation Plan--The most current plan required by Texas Water Code §11.1271 (relating to Water Conservation Plans) from an applicant for a new or amended water rights permit and from any holder of a permit, certificate, etc. who is authorized to appropriate more than 1,000 acre-feet per year or more for municipal, industrial, and other non-irrigation uses and for those who are authorized to appropriate 10,000 acre-feet per year or more for irrigation, and the most current plan required by Texas Water Code §13.146 from a retail public utility that provides potable water service to 3,300 or more connections These plans must include specific, quantified 5-year and 10-year targets for water savings.

(28) Water Management Strategy--A plan or specific project to meet a need for additional water by a discrete user group, which can mean increasing the total water supply or maximizing an existing supply, including through reducing demands.

(29) Water User Group (WUG)--Identified user or group of users for which water demands and water supplies have been identified and analyzed and plans developed to meet water needs. These include:

(A) Incorporated Census places of a population greater than 500, including select Census Designated Places, such as significant military bases or cases in which the Census Designated Place is the only Census place in the county;

(B) Retail public utilities providing more than 280 acre-feet per year for municipal use;

(C) Collective Reporting Units, or groups of retail public utilities that have a common association;

(D) Municipal and domestic water use, referred to as county-other, not included in subparagraphs (A) - (C) of this paragraph; and

(E) Non-municipal water use including manufacturing, irrigation, steam electric power generation, mining, and livestock watering for each county or portion of a county in a RWPA.

(30) Wholesale Water Provider (WWP)--Any person or entity, including river authorities and irrigation districts, that has contracts to sell more than 1,000 acre-feet of water wholesale in any one year during the five years immediately preceding the adoption of the last regional water plan. The regional water planning groups shall include as wholesale water providers other persons and entities that enter or that the regional water planning group expects or recommends to enter contracts to sell more than 1,000 acre-feet of water wholesale during the period covered by the plan.

RULE §357.11 Designations

(a) The Board shall review and update the designations of RWPAs as necessary but at least every five years, on its own initiative or upon recommendation of the executive administrator. The Board shall provide 30 days notice of its intent to amend the designations of RWPAs by publication of the proposed change in the *Texas Register* and by mailing the notice to each mayor of a municipality with a population of 1,000 or more or which is a county seat that is located in whole or in part in the RWPAs proposed to be impacted, to each water district or river authority located in whole or in part in the RWPA based upon lists of such water districts and river authorities obtained from the Commission, and to each county judge of a county located in whole or in part in the RWPAs proposed to be impacted. After the 30 day notice period, the Board shall hold a public hearing at a location to be determined by the Board before making any changes to the designation of a RWPA.

(b) If upon boundary review the Board determines that revisions to the boundaries are necessary, the Board shall designate areas for which regional water plans shall be developed, taking into consideration factors such as:

(1) River basin and aquifer delineations;

(2) Water utility development patterns;

(3) Socioeconomic characteristics;

(4) Existing regional water planning areas;

(5) Political subdivision boundaries;

(6) Public comment; and

(7) Other factors the Board deems relevant.

(c) After an initial coordinating body for a regional water planning group is named by the Board, the RWPGs shall adopt, by two-thirds vote, bylaws that are consistent with provisions of this chapter. Within 30 days after the Board names members of the initial coordinating body, the executive administrator shall provide to each member of the initial coordinating body a set of model bylaws which the RWPG shall consider. The RWPG shall provide copies of its bylaws and any revisions thereto to the executive administrator. The bylaws adopted by the RWPG shall at a minimum address the following elements:

(1) definition of a quorum necessary to conduct business;

(2) method to be used to approve items of business including adoption of regional water plans or amendments thereto;

(3) methods to be used to name additional members;

(4) terms and conditions of membership;

(5) methods to record minutes and where minutes will be archived as part of the public record; and

(6) methods to resolve disputes between RWPG members on matters coming before the RWPG.

(d) RWPGs shall maintain at least one representative of each of the following interest categories as voting members of the RWPG. However, if a RWPA does not have an interest category below, then the RWPG shall so advise the EA and no membership designation is required.

(1) Public, defined as those persons or entities having no economic interest in the interests represented by paragraphs (2) - (12) of this subsection other than as a normal consumer;

(2) Counties, defined as the county governments for the 254 counties in Texas;

(3) Municipalities, defined as governments of cities created or organized under the general, home-rule, or special laws of the state;

(4) Industries, defined as corporations, partnerships, sole proprietorships, or other legal entities that are formed for the purpose of making a profit and which produce or manufacture goods or services and which are not small businesses;

(5) Agricultural interests, defined as those persons or entities associated with production or processing of plant or animal products;

(6) Environmental interests, defined as those persons or groups advocating the conservation of the state's natural resources, including but not limited to soil, water, air, and living resources;

(7) Small businesses, defined as corporations, partnerships, sole proprietorships, or other legal entities that are formed for the purpose of making a profit, are independently owned and operated, and have fewer than 100 employees or less than $1 million in gross annual receipts;

(8) Electric generating utilities, defined as any persons, corporations, cooperative corporations, or any combination thereof, meeting each of the following three criteria: own or operate for compensation equipment or facilities which produce or generate electricity; produce or generate electricity for either wholesale or retail sale to others; and are neither a municipal corporation nor a river authority;

(9) River authorities, defined as any districts or authorities created by the legislature which contain areas within their boundaries of one or more counties and which are governed by boards of directors appointed or designated in whole or part by the governor or board, including, without limitation, San Antonio River Authority and Palo Duro River Authority;

(10) Water districts, defined as any districts or authorities, created under authority of either Texas Constitution, Article III, §52(b)(1) and (2), or Article XVI, §59 including districts having the authority to regulate the spacing of or production from water wells, but not including river authorities;

(11) Water utilities, defined as any persons, corporations, cooperative corporations, or any combination thereof that provide water supplies for compensation except for municipalities, river authorities, or water districts; and

(12) Groundwater management areas, defined as a single representative for each groundwater management area that is at least partially located within a RWPA. Defined as a representative from a groundwater conservation district that is appointed by the groundwater conservation districts within the associated groundwater management area.

(e) The RWPGs shall add the following non-voting members, who shall receive meeting notifications and information in the same manner as voting members:

(1) Staff member of the Board to be designated by the EA;

(2) Staff member of the Texas Parks and Wildlife Department designated by its executive director;

(3) Member designated by each adjacent RWPG to serve as a liaison;

(4) One or more persons to represent those entities with headquarters located in another RWPA and which holds surface water rights authorizing a diversion of 1,000 acre-feet a year or more in the RWPA, which supplies water under contract in the amount of 1,000 acre-feet a year or more to entities in the RWPA, or which receives water under contract in the amount of 1,000 acre-feet a year or more from the RWPA; and

(5) Staff member of the Texas Department of Agriculture designated by its commissioner.

(f) Each RWPG shall provide a current list of its members to the EA; the list shall identify the interest represented by each member including interests required in subsection (d) of this section.

(g) Each RWPG, at its discretion, may at any time add additional voting and non-voting representatives to serve on the RWPG for any new interest category, including additional representatives of those interests already listed in subsection (d) of this section that the RWPG considers appropriate for water planning.

(h) Each RWPG, at its discretion, may remove individual voting or non-voting members or eliminate RWPG representative positions in accordance with the RWPG bylaws as long as minimum requirements of RWPG membership are maintained in accordance with subsection (d) of this section.

(i) RWPGs may enter into formal and informal agreements to coordinate, avoid conflicts, and share information with other RWPGs or any other interests within any RWPA for any purpose the RWPGs consider appropriate including expediting or making more efficient water planning efforts. These efforts may involve any portion of the RWPG membership. Any plans or information developed through these efforts by RWPGs or by committees may be included in a RWP only upon approval of the RWPG.

(j) Upon request, the EA will provide technical assistance to RWPGs, including on water supply and demand analysis, methods to evaluate the social and economic impacts of not meeting needs, and regarding drought management measures and water conservation practices.

RULE §357.12 General Regional Water Planning Group Responsibilities and Procedures

(a) Prior to the preparation for the RWPs, in accordance with the public participation requirements in §357.21 of this title (relating to Notice and Public Participation), the RWPGs shall:

(1) hold at least one public meeting to gather suggestions and recommendations from the public as to issues that should be addressed or provisions that should be included in the next regional or state water plan;

(2) prepare a scope of work that includes a detailed description of tasks to be performed, identifies responsible parties for task execution, a task schedule, task and expense budgets, and describes interim products, draft reports, and final reports for the planning process;

(3) approve any amendments to the scope of work only in an open meeting of the RWPG where notice of the proposed action was provided in accordance with §357.21 of this title; and

(4) designate a political subdivision as a representative of the RWPG eligible to apply for financial assistance for scope of work and RWP development pursuant to Chapter 355, Subchapter C of this title (relating to Regional Water Planning Grants).

(b) A RWPG shall hold a public meeting to determine the process for identifying potentially feasible water management strategies; the process shall be documented and shall include input received at the public meeting; after reviewing the potentially feasible strategies using the documented process, then the RWPG shall list all possible water management strategies that are potentially feasible for meeting a need in the region. The public meeting under this subsection shall be in accordance with the requirements of §357.21(b) of this title.

(c) If applicable, and approved by the EA, implement simplified planning in accordance with guidance to be provided by the EA. If a RWPG determines in its analysis of water needs that it has sufficient supplies in the RWPA to meet water needs for the 50-year planning period, RWPGs may conduct simplified regional water planning as follows:

(1) identify water supplies that are available for voluntary redistribution in a RWPA or to other RWPAs;

(2) where appropriate, adopt previous RWP or state water plan information, updated as necessary, as the RWP; and

(3) other activities upon approval of the EA necessary to complete a RWP that meets rule and statute requirements.

RULE §357.20 Guidance Principles for State and Regional Water Planning

Development of the state water plan and of RWPs shall be guided by the principles stated in §358.3 of this title (relating to Guidance Principles).

RULE §357.21 Notice and Public Participation

(a) RWPGs shall conduct all business in meetings posted and held in accordance with the Texas Open Meetings Act, Texas Government Code Chapter 551, with a copy of all materials presented or discussed available for public inspection prior to and following the meetings and shall meet the additional notice requirements when specifically referenced as required under other subsections.

(b) All public notices required by this subsection shall comply with this section and shall meet the following requirements:

(1) These notice requirements apply to the following RWPG actions: regular RWPG meetings; amendments to the regional water planning scope of work or budget; process of identifying potentially feasible water management strategies; meetings to replace RWPG members or addition of new RWPG members; and adoption of regional water plans.

(2) Published 72 hours prior to the meeting.

(3) Notice shall include:

(A) a date, time, and location of the meeting;

(B) a summary of the proposed action to be taken; and

(C) the name, telephone number, and address of the person to whom questions or requests for additional information may be submitted.

(4) Entities to be notified include:

(A) all voting and non-voting RWPG members;

(B) any person or entity who has requested notice or RWPG activities either in writing or email, as requested by the person or entity; and

(C) each County Clerk, in writing, within the RWPA.

(5) Notice and agenda to be posted:

(A) On the website of the host political subdivision or on the Board website if requested by the RWPG; and

(B) Texas Secretary of State website.

(6) Documents to be made available on the internet or in hard copy for public inspection prior to and following meeting include:

(A) Agenda of meeting; and

(B) Copies of all materials presented or discussed at the meeting.

(c) Notice under this subsection shall meet the following requirements:

(1) These notice requirements apply to the following RWPG actions: population projection and water demand projection revision requests to officially adopted Board projections; substitution of alternative water management strategies; and minor amendments to RWPs.

(2) Notice of meetings under this subsection shall be published/postmarked on the internet, emailed, and mailed to the public before the 14th day preceding the date of the meeting.

(3) Notice shall include:

(A) a date, time, and location of the meeting;

(B) a summary of the proposed action to be taken;

(C) the name, telephone number, and address of the person to whom questions or requests for additional information may be submitted; and

(D) information that the RWPG will accept written and oral comments at the meetings and information on how the public may submit written comments separate from such meetings. The RWPG shall specify a deadline for submission of public written comments of not earlier than 14 days after the meeting.

(4) Entities to be notified include:

(A) all voting and non-voting RWPG members;

(B) any person or entity who has requested notice of RWPG activities either in writing or email, as requested by the person or entity;

(C) each County Clerk, in writing, within the RWPA; and

(D) each County Clerk in counties outside the RWPA where a recommended or alternative water management strategy being considered would be located.

(5) Notice and associated meeting agenda to be posted:

(A) On the website of the host political subdivision or on the Board website if requested by the RWPG; and

(B) Texas Secretary of State website.

(6) Documents to be made available on the internet or in hard copy for public inspection prior to and following meeting include:

(A) Agenda of meeting; and

(B) Copies of all materials, reports, plans presented or discussed at the meeting.

(7) Public comments to be accepted as follows:

(A) Written comments for 14 days prior to meeting with comments considered by RWPG members prior to action;

(B) Oral and written public comment during meeting; and

(C) Written comments must also be accepted for 14 days following the meeting and all comments received during the comment period must be submitted to the Board by the RWPG.

(d) Notice under this subsection shall meet the following requirements:

(1) These notice requirements apply to the following RWPG actions: holding a preplanning public meeting to obtain public input on development of the next RWP; major amendments to RWPs; holding hearings for IPPs; and requesting research and planning funds from the Board.

(2) Notice shall be published in a newspaper of general circulation in each county located in whole or in part in the RWPA as follows:

(A) before the 30th day preceding the date of the public meeting or hearing; and

(B) when applying for Board funding, at least 30 days prior to Board consideration of funding applications.

(3) Notice of the public meetings and public hearings shall include:

(A) a date, time, and location of the public meeting or hearing;

(B) a summary of the proposed action to be taken;

(C) the name, telephone number, and address of the person to whom questions or requests for additional information may be submitted; and

(D) information that the RWPG will accept written and oral comments at the hearings and information on how the public may submit written comments separate from such hearings. The RWPG shall specify a deadline for submission of public written comments as specified in paragraph (8)(A) of this subsection.

(4) If applying for Board funding, the notice shall include the name and address of the eligible applicant and the name of the applicant's manager or official representative; a brief description of the regional water planning area; the purposes of the planning project; the Board's name, address, and the name of a contact person with the Board; a statement that any comments must be filed with the EA and the applicant within 30 days of the date on which the notice is mailed or published. Prior to action by the Board, the applicant must provide one copy of the notice sent, a list of those to which the notice was sent, the date on which the notice was sent, copies of all notices as published showing name of the newspaper and the date on which the notice was published.

(5) RWPGs shall make copies of the IPP available for public inspection at least 30 days before a public hearing required or held by providing a copy of the IPP in at least one public library in each county and either the county courthouse's law library, the county clerk's office, or some other accessible place within the county courthouse of each county having land in the RWPA and include locations of such copies in the notice for public hearing. For distribution of the IPP and adopted RWP, the RWPG may consult and coordinate with county and local officials in determining the most appropriate location in the county courthouse to ensure maximum accessibility to the public during business hours. Additionally, the RWPG may consult with local and county officials in determining which public library in the county can provide maximum accessibility to the public. According to the capabilities of the facility, the RWPG may provide the copy electronically, on an electronic disc or drive, or in hard copy. The RWPG shall make an effort to ensure ease of access to the public, including where feasible, posting the IPP on websites and providing notice of such posting.

(6) Notice shall be mailed to, at a minimum, the following:

(A) Notification of all entities that are to be notified under subsection (c)(4) of this section;

(B) Each mayor of a municipality with a population of 1,000 or more or which is a county seat that is located in whole or in part in the RWPA;

(C) Each county judge of a county located in whole or in part in the RWPA;

(D) Each special or general law district or river authority with responsibility to manage or supply water in the RWPA based upon lists of such water districts and river authorities obtained from the Commission;

(E) Additionally, for public hearings or meetings to obtain input on development of a future RWP or a meeting or hearing associated with IPPs or major RWP amendments:

(i) each retail public utility, defined as a community water system, that serves any part of the RWPA or receives water from the RWPA based upon lists of such entities obtained from the Commission; and

(ii) each holder of record of a water right for the use of surface water the diversion of which occurs in the RWPA based upon lists of such water rights holders obtained from the Commission; and

(F) Additionally, a RWPG that intends to request Board funds for regional water planning must provide written notice to all other RWPGs.

(7) Notice and associated hearing and meeting agenda shall also be posted:

(A) On the website of the host political subdivision or on the Board website if requested by the RWPG;

(B) Texas Secretary of State website; and

(C) In the Texas Register.

(8) Public comments to be accepted as follows:

(A) Written comments submitted immediately following 30-day public notice posting and prior to and during meeting or hearing; and

(i) Until not earlier than 30-days following the date of the public hearing on a major amendment to a RWP.

(ii) Until not earlier than 60 days following the date of the public hearing on an IPP.

(B) Verbal public comments at the noticed meeting or hearing;

(C) Comments received must be considered as follows:

(i) Comments associated with hearings must be considered by RWPG members when adopting a RWP or adopting a major amendment to a RWP.

(ii) Comments associated with a preplanning meeting, scope of work development, and an application for funding to the Board must be considered prior to taking RWPG action.

RULE §357.22 General Considerations for Development of Regional Water Plans

(a) RWPGs shall consider existing local, regional, and state water planning efforts, including water plans, information and relevant local, regional, state and federal programs and goals when developing the regional water plan. The RWPGs shall also consider:

(1) water conservation plans;

(2) drought management and drought contingency plans;

(3) information compiled by the Board from water loss audits performed by retail public utilities pursuant to §358.6 of this title (relating to Water Loss Audits);

(4) publicly available plans for major agricultural, municipal, manufacturing and commercial water users;

(5) local and regional water management plans;

(6) water availability requirements promulgated by a county commissioners court in accordance with Texas Water Code §35.019 (relating to Priority Groundwater Management Areas);

(7) the Texas Clean Rivers Program;

(8) the U.S. Clean Water Act;

(9) water management plans;

(10) other planning goals including, but not limited to, regionalization of water and wastewater services where appropriate;

(11) approved groundwater conservation district management plans and other plans submitted under Texas Water Code §16.054 (relating to Local Water Planning);

(12) approved groundwater regulatory plans; and

(13) any other information available from existing local or regional water planning studies.

(b) The RWP shall contain a separate chapter for the contents of §§357.30, 357.31, 357.32, 357.33, 357.42, 357.43, 357.44, 357.45, and 357.50 of this title and shall also contain a separate chapter for the contents of §357.34 and §§357.35, 357.40 and 357.41 of this title for a total of eleven separate chapters.

RULE §357.30 Description of the Regional Water Planning Area

RWPGs shall describe their regional water planning area including the following:

(1) social and economic aspects of a region such as information on current population, economic activity and economic sectors heavily dependent on water resources;

(2) current water use and major water demand centers;

(3) current groundwater, surface water, and reuse supplies including major springs that are important for water supply or protection of natural resources;

(4) wholesale water providers;

(5) agricultural and natural resources;

(6) identified water quality problems;

(7) identified threats to agricultural and natural resources due to water quantity problems or water quality problems related to water supply;

(8) summary of existing local and regional water plans;

(9) the identified historic drought(s) of record within the planning area;

(10) current preparations for drought within the RWPA;

(11) information compiled by the Board from water loss audits performed by retail public utilities pursuant to §358.6 of this title (relating to Water Loss Audits); and

(12) an identification of each threat to agricultural and natural resources and a discussion of how that threat will be addressed or affected by the water management strategies evaluated in the plan.

RULE §357.31 Projected Population and Water Demands

(a) RWPs shall present projected population and water demands by WUG as defined in §357.10 of this title (relating to Definitions and Acronyms). If a WUG lies in one or more counties or RWPA or river basins, data shall be reported for each river basin, RWPA, and county split.

(b) RWPs shall present projected water demands associated with WWPs by category of water use, including municipal, manufacturing, irrigation, steam electric power generation, mining, and livestock for each county or portion of a county in the RWPA. If a county or portion of a county is in more than one river basin, data shall be reported for each river basin.

(c) RWPs shall report the current contractual obligations of WUG and WWPs to supply water in addition to any demands projected for the WUG or WWP. Information regarding obligations to supply water to other users must also be incorporated into the water supply analysis in §357.32 of this title (relating to Water Supply Analysis) in order to determine net existing water supplies available for each WUG's own use.

(d) Municipal demands shall be adjusted to reflect water savings due to plumbing fixture requirements identified in the Texas Health and Safety Code, Chapter 372. RWPGs will determine and report how changes in plumbing fixtures would affect projected municipal water demands using projections with plumbing code savings provided by the Board or by methods approved by the EA.

(e) Source of population and water demands. In developing RWPs, RWPGs shall use:

(1) Population and water demand projections developed by the EA that will be contained in the next state water plan and adopted by the Board after consultation with the RWPGs, Commission, Texas Department of Agriculture, and the Texas Parks and Wildlife Department.

(2) RWPGs may request revisions of Board adopted population or water demand projections if the request demonstrates that population or water demand projections no longer represents a reasonable estimate of anticipated conditions based on changed conditions and or new information. Before requesting a revision to population and water demand projections, the RWPG shall discuss the proposed revisions at a public meeting for which notice has been posted in accordance with §357.21(c) of this title (relating to Notice and Public Participation). The RWPG shall summarize public comments received on the proposed request for projection revisions. The EA shall consult with the requesting RWPG and respond to their request within 45 days after receipt of a request from a RWPG for revision of population or water demand projections.

(f) Population and water demand projections shall be presented for each planning decade for each of the above reporting categories.

RULE §357.32 Water Supply Analysis

(a) RWPGs shall evaluate:

(1) source water availability during drought of record conditions; and

(2) existing water supplies that are legally and physically available to WUGs and wholesale water suppliers within the RWPA for use during the drought of record.

(b) Evaluations shall consider surface water and groundwater data from the state water plan, existing water rights, contracts and option agreements relating to water rights, other planning and water supply studies, and analysis of water supplies existing in and available to the RWPA during drought of record conditions.

(c) Evaluation of the existing surface water available during drought of record shall be based on firm yield. The analysis may be based on justified operational procedures other than firm yield. The EA shall consider a written request from a RWPG to use procedures other than firm yield. For surface water supply analysis, RWPGs will use most current Water Availability Models from the Commission to evaluate the adequacy of surface water supplies. RWPGs will assume full utilization of existing water rights and no return flows when using Water Availability Models. RWPGs may use other water availability modeling assumptions or better site-specific information with written approval from the EA. Information available from the Commission shall be incorporated by RWPGs unless better site-specific information is available.

(d) RWPGs shall use modeled available groundwater volumes for groundwater availability, as issued by the Board, and incorporate such information in its RWP unless no modeled available groundwater volumes are provided. Groundwater availability used in the RWP must be consistent with the desired future conditions as of the date the Board most recently adopted a state water plan or, at the discretion of the RWPG, established subsequent to the adoption of the most recent state water plan.

(e) RWPGs shall evaluate the existing water supplies for each WUG and WWP.

(f) Water supplies based on contracted agreements will be based on the terms of the contract, which may be assumed to renew upon contract termination if the contract contemplates renewal or extensions.

(g) Evaluation results shall be reported by WUG in accordance with §357.31(a) of this title (relating to Projected Population and Water Demands) and WWPs in accordance with §357.31(b) of this title.

RULE §357.33 Needs Analysis: Comparison of Water Supplies and Demands

(a) RWPs shall include comparisons of existing water supplies and projected water demands to identify water needs.

(b) RWPGs shall compare projected water demands, developed in accordance with §357.31 of this title (relating to Projected Population and Water Demands), with existing water supplies available to WUGs and WWPs in a planning area, as developed in accordance with §357.32 of this title (relating to Water Supply Analysis), to determine whether WUGs will experience water surpluses or needs for additional supplies. Results will be reported for WUGs and for WWPs by categories of use including municipal, manufacturing, irrigation, steam electric, mining, and livestock watering for each county or portion of a county in a RWPA.

(c) The social and economic impacts of not meeting water needs will be evaluated by RWPGs and reported for each RWPA.

(d) Results of evaluations will be reported by WUG in accordance with §357.31(a) of this title and WWPs in accordance with §357.31(b) of this title.

(e) RWPGs shall perform a secondary water needs analysis for all WUGs and WWPs for which conservation water management strategies or direct reuse water management strategies are recommended. This secondary water needs analysis will calculate the water needs that would remain after assuming all recommended conservation and direct reuse water management strategies are fully implemented. The resulting secondary water needs volumes shall be presented in the RWP by WUG and WWP and decade.

RULE §357.34 Identification and Evaluation of Potentially Feasible Water Management Strategies

(a) RWPGs shall identify and evaluate potentially feasible water management strategies for all WUGs and WWPs with identified water needs.

(b) RWPGs shall identify potentially feasible water management strategies to meet water supply needs identified in §357.33 of this title (relating to Needs Analysis: Comparison of Water Supplies and Demands) in accordance with the process in §357.12(b) of this title (relating to General Regional Water Planning Group Responsibilities and Procedures). Strategies shall be developed for WUGs and WWPs. The strategies shall meet new water supply obligations necessary to implement recommended water management strategies of WWPs and WUGs. RWPGs shall plan for water supply during Drought of Record conditions. In developing RWPs, RWPGs shall provide WMSs to be used during a drought of record.

(c) Potentially feasible water management strategies may include, but are not limited to:

(1) Expanded use of existing supplies including system optimization and conjunctive use of water resources, reallocation of reservoir storage to new uses, voluntary redistribution of water resources including contracts, water marketing, regional water banks, sales, leases, options, subordination agreements, and financing agreements, subordination of existing water rights through voluntary agreements, enhancements of yields of existing sources, and improvement of water quality including control of naturally occurring chlorides.

(2) New supply development including construction and improvement of surface water and groundwater resources, brush control, precipitation enhancement, desalination, water supply that could be made available by cancellation of water rights based on data provided by the Commission, rainwater harvesting, and aquifer storage and recovery.

(3) Conservation and drought management measures including demand management.

(4) Reuse of wastewater.

(5) Interbasin transfers of surface water.

(6) Emergency transfers of surface water including a determination of the part of each water right for non-municipal use in the RWPA that may be transferred without causing unreasonable damage to the property of the non-municipal water rights holder in accordance with Texas Water Code §11.139 (relating to Emergency Authorizations).

(d) Evaluations of potentially feasible water management strategies shall include the following analyses:

(1) For the purpose of evaluating potentially feasible water management strategies, the Commission's most current Water Availability Model with assumptions of no return flows and full utilization of senior water rights, is to be used. Alternative assumptions may be used with written approval from the EA who will consider a written request from a RWPG to use assumptions other than no return flows and full utilization of senior water rights.

(2) An equitable comparison between and consistent evaluation and application of all water management strategies the RWPGs determine to be potentially feasible for each water supply need.

(3) A quantitative reporting of:

(A) The net quantity, reliability, and cost of water delivered and treated for the end user's requirements during drought of record conditions, taking into account and reporting anticipated strategy water losses, incorporating factors used calculating infrastructure debt payments and may include present costs and discounted present value costs. Costs do not include distribution of water within a WUG after treatment.

(B) Environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico. Evaluations of effects on environmental flows will include consideration of the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water). If environmental flow standards have not been established, then environmental information from existing site-specific studies, or in the absence of such information, state environmental planning criteria adopted by the Board for inclusion in the state water plan after coordinating with staff of the Commission and the Texas Parks and Wildlife Department to ensure that water management strategies are adjusted to provide for environmental water needs including instream flows and bays and estuaries inflows.

(C) Impacts to agricultural resources.

(4) Discussion of the plan's impact on other water resources of the state including other water management strategies and groundwater and surface water interrelationships.

(5) A discussion of each threat to agricultural or natural resources identified pursuant to §357.30(7) of this title (relating to Description of the Regional Water Planning Area) including how that threat will be addressed or affected by the water management strategies evaluated.

(6) If applicable, consideration and discussion of the provisions in Texas Water Code §11.085(k)(1) for interbasin transfers of surface water. At minimum, this consideration will include a summation of water needs in the basin of origin and in the receiving basin.

(7) Consideration of third-party social and economic impacts resulting from voluntary redistributions of water including analysis of third-party impacts of moving water from rural and agricultural areas.

(8) A description of the major impacts of recommended water management strategies on key parameters of water quality identified by RWPGs as important to the use of a water resource and comparing conditions with the recommended water management strategies to current conditions using best available data.

(9) Consideration of water pipelines and other facilities that are currently used for water conveyance as described in §357.22(a)(3) of this title (relating to General Considerations for Development of Regional Water Plans).

(10) Other factors as deemed relevant by the RWPG including recreational impacts.

(e) RWPGs shall evaluate and present potentially feasible water management strategies with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved RWP.

(f) Conservation, Drought Management Measures, and Drought Contingency Plans shall be considered by RWPGs when developing the regional plans, particularly during the process of identifying, evaluating, and recommending water management strategies. RWPs shall incorporate water conservation planning and drought contingency planning in the regional water planning area.

(1) Drought management measures including water demand management. RWPGs shall consider drought management measures for each need identified in §357.33 of this title and shall include such measures for each user group to which Texas Water Code §11.1272 (relating to Drought Contingency Plans for Certain Applicants and Water Right Holders) applies. Impacts of the drought management measures on water needs must be consistent with guidance provided by the Commission in its administrative rules implementing Texas Water Code §11.1272. If a RWPG does not adopt a drought management strategy for a need it must document the reason in the RWP. Nothing in this paragraph shall be construed as limiting the use of voluntary arrangements by water users to forgo water usage during drought periods.

(2) Water conservation practices. RWPGs must consider water conservation practices, including potentially applicable best management practices, for each identified water need.

(A) RWPGs shall include water conservation practices for each user group to which Texas Water Code §11.1271 and §13.146 (relating to Water Conservation Plans) apply. The impact of these water conservation practices on water needs must be consistent with requirements in appropriate Commission administrative rules related to Texas Water Code §11.1271 and §13.146.

(B) RWPGs shall consider water conservation practices for each WUG beyond the minimum requirements of subparagraph (A) of this paragraph, whether or not the WUG is subject to Texas Water Code §11.1271 and §13.146. If RWPGs do not adopt a water conservation strategy to meet an identified need, they shall document the reason in the RWP.

(C) For each WUG or WWP that is to obtain water from a proposed interbasin transfer to which Texas Water Code §11.085 (relating to Interbasin Transfers) applies, RWPGs will include a water conservation strategy, pursuant to Texas Water Code §11.085(1), that will result in the highest practicable level of water conservation and efficiency achievable. For these strategies, RWPGs will determine and report projected water use savings in gallons per capita per day based on its determination of the highest practicable level of water conservation and efficiency achievable. RWPGs will develop conservation strategies based on this determination. In preparing this evaluation, RWPGs will seek the input of WUGs and WWPs as to what is the highest practicable level of conservation and efficiency achievable, in their opinion, and take that input into consideration. RWPGs will develop water conservation strategies consistent with guidance provided by the Commission in its administrative rules that implement Texas Water Code §11.085. When developing water conservation strategies, the RWPGs must consider potentially applicable best management practices. Strategy evaluation in accordance with this section will include a quantitative description of the quantity, cost, and reliability of the water estimated to be conserved under the highest practicable level of water conservation and efficiency achievable.

(D) RWPGs shall consider strategies to address any issues identified in the information compiled by the Board from the water loss audits performed by retail public utilities pursuant to §358.6 of this title (relating to Water Loss Audits).

(g) RWPs shall include a subchapter consolidating the RWPG's recommendations regarding water conservation. RWPGs shall include in the RWPs model water conservation plans pursuant to Texas Water Code §11.1271.

RULE §357.35 Recommended and Alternative Water Management Strategies

(a) RWPGs shall recommend water management strategies to be used during a drought of record based on the potentially feasible water management strategies evaluated under §357.34 of this title (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies).

(b) RWPGs shall recommend specific water management strategies based upon the identification, analysis, and comparison of water management strategies by the RWPG that the RWPG determines are potentially feasible so that the cost effective water management strategies that are environmentally sensitive are considered and adopted unless a RWPG demonstrates that adoption of such strategies is inappropriate. To determine cost-effectiveness and environmental sensitivity, RWPGs will follow processes described in §357.34 of this title. The RWP may include alternative water management strategies evaluated by the processes described in §357.34 of this title.

(c) Strategies will be selected by the RWPGs so that cost effective water management strategies, which are consistent with long-term protection of the state's water resources, agricultural resources, and natural resources are adopted.

(d) RWPGs shall identify and recommend water management strategies for all WUGs and WWPs with identified water needs and that meet all water needs during the drought of record except in cases where:

(1) no water management strategy is feasible. In such cases, RWPGs must explain why no management strategies are feasible; or

(2) a political subdivision that provides water supply other than water supply corporations, counties, or river authorities explicitly does not participate in the regional water planning process for needs located within its boundaries or extraterritorial jurisdiction.

(e) Specific recommendations of water management strategies to meet an identified need will not be shown as meeting a need for a political subdivision if the political subdivision in question objects to inclusion of the strategy for the political subdivision and specifies its reasons for such objection. This does not prevent the inclusion of the strategy to meet other needs.

(f) Recommended strategies shall protect existing water rights, water contracts, and option agreements, but may consider potential amendments of water rights, contracts and agreements, which would require the eventual consent of the owner.

(g) RWPGs shall report the following:

(1) Recommended water management strategies and the associated results of all the potentially feasible water management strategy evaluations by WUG and WWP. If a WUG or WWP lies in one or more counties or RWPAs or river basins, data will be reported for each river basin, RWPA, and county.

(2) Calculated planning management supply factors for each WUG and WWP included in the RWP assuming all recommended water management strategies are implemented. This calculation shall be based on the sum of: the total existing water supplies, plus all water supplies from recommended water management strategies for each entity; divided by that entity's total projected water demand, within the planning decade. The resulting calculated safety factor shall be presented in the plan by entity and decade for every WUG and WWP.

(3) Fully evaluated Alternative Water Management Strategies included in the adopted RWP shall be presented together in one place in the RWP.

RULE §357.40 Impacts of Regional Water Plan

(a) RWPs shall include a quantitative description of the socioeconomic impacts of not meeting the identified water needs pursuant to §357.33(c) of this title (relating to Needs Analysis: Comparison of Water Supplies and Demands).

(b) RWPs shall include a description of the impacts of the RWP regarding:

(1) Agricultural resources pursuant to §357.34(d)(3)(C) of this title (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies);

(2) Other water resources of the state including other water management strategies and groundwater and surface water interrelationships pursuant to §357.34(d)(4) of this title;

(3) Threats to agricultural and natural resources identified pursuant to §357.34(d)(5) of this title;

(4) Third-party social and economic impacts resulting from voluntary redistributions of water including analysis of third-party impacts of moving water from rural and agricultural areas pursuant to §357.34(d)(7) of this title;

(5) Major impacts of recommended water management strategies on key parameters of water quality pursuant to §357.34(d)(8) of this title; and

(6) Effects on navigation.

(c) RWPs shall include a summary of the identified water needs that remain unmet by the RWP.

RULE §357.41 Consistency with Long-Term Protection of Water Resources, Agricultural Resources, and Natural Resources

RWPGs shall describe how RWPs are consistent with the long-term protection of the state's water resources, agricultural resources, and natural resources as embodied in the guidance principles in §358.3(4) and (8) of this title (relating to Guidance Principles).

RULE §357.42 Drought Response Information, Activities, and Recommendations

(a) RWPs shall consolidate and present information on current and planned preparations for, and responses to, drought conditions in the region including, but not limited to, drought of record conditions based on the following subsections.

(b) RWPGs shall conduct an overall assessment of current preparations for drought within the RWPA including a description of how water suppliers in the RWPA identify and respond to the onset of drought. This may include information from local drought contingency plans.

(c) RWPGs shall develop drought response recommendations regarding the management of existing groundwater and surface water sources in the RWPA designated in accordance with §357.32 of this title (relating to Water Supply Analysis), including:

(1) Factors specific to each source of water supply to be considered in determining whether to initiate a drought response for each water source including specific recommended drought response triggers;

(2) Actions to be taken as part of the drought response by the manager of each water source and the entities relying on each source, including the number of drought stages; and

(3) Triggers and actions developed in paragraphs (1) and (2) of this subsection may consider existing triggers and actions associated with existing drought contingency plans.

(d) RWPGs will collect information on existing major water infrastructure facilities that may be used for interconnections in event of an emergency shortage of water. In accordance with Texas Water Code §16.053(r), this information is CONFIDENTIAL INFORMATION and cannot be disseminated to the public. The associated information is to be collected by a subgroup of RWPG members in a closed meeting and submitted separately to the EA in accordance with guidance to be provided by EA.

(e) RWPGs will provide general descriptions of local drought contingency plans that involve making emergency connections between water systems or WWP systems that do not include locations or descriptions of facilities that are disallowed under subsection (d) of this section.

(f) RWPGs may designate recommended and alternative drought management water management strategies and other recommended drought measures in the RWP including:

(1) List and description of the recommended drought management water management strategies and associated WUGs and WWPs, if any, that are recommended by the RWPG. Information to include associated triggers to initiate each of the recommended drought management water management strategies;

(2) List and description of alternative drought management water management strategies and associated WUGs and WWPs, if any, that are included in the plan.

Information to include associated triggers to initiate each of the alternative drought management water management strategies;

(3) List of all potentially feasible drought management water management strategies that were considered or evaluated by the RWPG but not recommended; and

(4) List and summary of any other recommended drought management measures, if any, that are included in the RWP, including associated triggers if applicable.

(g) The RWPGs shall evaluate potential emergency responses to local drought conditions or loss of existing water supplies; the evaluation shall include identification of potential alternative water sources that may be considered for temporary emergency use by WUGs and WWPs in the event that the existing water supply sources become temporarily unavailable to the WUGs and WWPs due to unforeseeable hydrologic conditions such as emergency water right curtailment, unanticipated loss of reservoir conservation storage, or other localized drought impacts. RWPGs shall evaluate, at a minimum, municipal WUGs that:

(1) have existing populations less than 7,500;

(2) rely on a sole source for its water supply regardless of whether the water is provided by a WWP; and

(3) all county-other WUGs.

(h) RWPGs shall consider any relevant recommendations from the Drought Preparedness Council.

(i) RWPGs shall make drought preparation and response recommendations regarding:

(1) Development of, content contained within, and implementation of local drought contingency plans required by the Commission;

(2) Current drought management preparations in the RWPA including:

(A) drought response triggers; and

(B) responses to drought conditions;

(3) The Drought Preparedness Council and the State Drought Preparedness Plan; and

(4) Any other general recommendations regarding drought management in the region or state.

(j) The RWPGs shall develop region-specific model drought contingency plans.

RULE §357.43 Regulatory, Administrative, or Legislative Recommendations

(a) The RWPs shall contain any regulatory, administrative, or legislative recommendations developed by the RWPGs.

(b) Ecologically Unique River and Stream Segments. RWPGs may include in adopted RWPs recommendations for all or parts of river and stream segments of unique ecological value located within the RWPA by preparing a recommendation package consisting of a physical description giving the location of the stream segment, maps, and photographs of the stream segment and a site characterization of the stream segment documented by supporting literature and data. The recommendation package shall address each of the criteria for designation of river and stream segments of ecological value found in this subsection. The RWPG shall forward the recommendation package to the Texas Parks and Wildlife Department and allow the Texas Parks and Wildlife Department 30 days for its written evaluation of the recommendation. The adopted RWP shall include, if available, Texas Parks and Wildlife Department's written evaluation of each river and stream segment recommended as a river or stream segment of unique ecological value.

(1) A RWPG may recommend a river or stream segment as being of unique ecological value based upon the criteria set forth in §358.2 of this title (relating to Definitions).

(2) For every river and stream segment that has been designated as a unique river or stream segment by the legislature, during a session that ends not less than one year before the required date of submittal of an adopted RWP to the Board, or recommended as a unique river or stream segment in the RWP, the RWPG shall assess the impact of the RWP on these segments. The assessment shall be a quantitative analysis of the impact of the plan on the flows important to the river or stream segment, as determined by the RWPG, comparing current conditions to conditions with implementation of all recommended water management strategies. The assessment shall also describe the

impact of the plan on the unique features cited in the region's recommendation of that segment.

(c) Unique Sites for Reservoir Construction. A RWPG may recommend sites of unique value for construction of reservoirs by including descriptions of the sites, reasons for the unique designation and expected beneficiaries of the water supply to be developed at the site. The criteria at §358.2 of this title shall be used to determine if a site is unique for reservoir construction.

(d) Any other recommendations that the RWPG believes are needed and desirable to achieve the stated goals of state and regional water planning including to facilitate the orderly development, management, and conservation of water resources and prepare for and respond to drought conditions.

(e) RWPGs may develop information as to the potential impacts of any proposed changes in law prior to or after changes are enacted.

(f) RWPGs should consider making legislative recommendations to facilitate more voluntary water transfers in the region.

RULE §357.44 Infrastructure Financing Analysis

RWPGs shall assess and quantitatively report on how individual local governments, regional authorities, and other political subdivisions in their RWPA propose to finance recommended water management strategies.

RULE §357.45 Implementation and Comparison to Previous Regional Water Plan

(a) RWPGs shall describe the level of implementation of previously recommended water management strategies. Information on the progress of implementation of all water management strategies that were recommended in the previous RWP, including conservation and drought management water management strategies; and the implementation of projects that have affected progress in meeting the state's future water needs.

(b) RWPGs shall provide a brief summary of how the RWP differs from the previously adopted RWP with regards to:

(1) Water demand projections;

(2) Drought of record and hydrologic and modeling assumptions used in planning for the region;

(3) Groundwater and surface water availability, existing water supplies, and identified water needs for WUGs and WWPs; and

(4) Recommended and alternative water management strategies.

RULE §357.50 Adoption, Submittal, and Approval of Regional Water Plans

(a) The RWPGs shall submit their adopted RWPs to the Board every five years on a date to be disseminated by the EA, as modified by subsection (e)(2) of this section, for approval and inclusion in the state water plan.

(b) Prior to the adoption of the RWP, the RWPGs shall submit concurrently to the EA and the public an IPP. The IPP submitted to the EA must be in the electronic and paper format specified by the EA. Each RWPG must certify that the IPP is complete and adopted by the RWPG.

(c) The RWPGs shall distribute the IPP in accordance with §357.21(d)(5) of this title (relating to Notice and Public Participation).

(d) The RWPGs shall solicit, and consider the following comments when adopting a RWP:

(1) the EA's written comments, which shall be provided to the RWPG within 120 days of receipt of the IPP;

(2) written comments received from any federal agency or Texas state agency, which the RWPGs shall accept after the first public hearing notice is published pursuant to §357.21(d) of this title until at least 90 days after the public hearing is held pursuant to §357.21(d) of this title; and

(3) any written or oral comments received from the public after the first public hearing notice is published pursuant to §357.21(d) of this title until at least 60 days after the public hearing is held pursuant to §357.21(d) of this title.

(e) Submittal of RWPs. RWPGs shall submit the IPP and the adopted RWPs and amendments to approved RWPs to the EA in conformance with this section.

(1) RWPs shall include:

(A) The technical report and data prepared in accordance with this chapter and the EA's specifications;

(B) An executive summary that documents key RWP findings and recommendations; and

(C) Summaries of all written and oral comments received pursuant to subsection (d) of this section, with a response by the RWPG explaining how the plan was revised or why changes were not warranted in response to written comments received under subsection (d) of this section.

(2) RWPGs shall submit regional plans to the EA according to the following schedule:

(A) Initially prepared plans are due every five years on a date disseminated by the EA unless an extension is approved, in writing, by the EA.

(B) Prior to submission of the IPP, the RWPGs shall upload the data, metadata and all other relevant digital information supporting the plan to the Board's planning database system. All changes and corrections to this information must be entered into the Board's database prior to submittal of an adopted plan.

(C) The RWPG will transfer copies of all data, models, and reports generated by the planning process and used in developing the RWP to the EA. To the maximum extent possible, data shall be transferred in digital form according to specifications provided by the EA. One copy of all reports prepared by the RWPG shall be provided in digital format according to specifications provided by the EA. All digital mapping shall use a geographic information system according to specifications provided by the EA. The EA shall seek the input from the State Geographic Information Officer regarding specifications mentioned in this section.

(D) Adopted RWPs are due to the EA every five years on a date disseminated by the EA unless, at the discretion of the EA, a time extension is granted consistent with the timelines in Texas Water Code §16.053(i).

(E) Once approved by the Board, RWPs will be made available on the Board website.

(f) The RWPGs shall submit in a timely manner to the EA information on any known interregional conflict between RWPs.

(g) The RWPGs shall modify the RWP to incorporate Board resolutions of interregional conflicts.

(h) The RWPGs shall seek to resolve conflicts with other RWPGs and shall participate in any Board sponsored efforts to resolve interregional conflicts.

(i) Approval of RWPs by the Board. The Board may approve a RWP only after it has determined that the RWP complies with statute and rules.

(j) Upon receipt of a RWP adopted by the RWPG, the Board will consider approval of such plan based on the following criteria:

(1) The Board shall verify adoption of the RWP by the RWPG.

(2) The Board shall approve the plan only after it considers any information from RWPGs of the existence of an interregional conflict and finds that no interregional conflict exists. The Board shall not consider approval of a RWP unless all RWPs which could contain conflicts have also been submitted to the Board for approval, or the Board determines that such plans are not likely to be submitted.

(k) Board Adoption of State Water Plan. RWPs approved by the Board pursuant to this chapter shall be incorporated into the state water plan as outlined in §358.4 of this title (relating to Guidelines).

RULE §357.51 Amendments to Regional Water Plans

(a) Local Water Planning Amendment Requests. A political subdivision in the RWPA may request a RWPG to consider specific changes to an adopted RWP based on changed conditions or new information. A RWPG must formally consider such request within 180 days after its receipt and shall amend its adopted RWP if it determines an amendment is warranted. If the political subdivision is not satisfied with the RWPG's decision on the issue, it may file a petition with the

EA to request Board review the decision and consider changing the approved RWP. The political subdivision shall send a copy of the petition to the chair of the affected RWPG.

(1) The petition must state:

(A) the changed condition or new information that affects the approved RWP;

(B) the specific sections and provisions of the approved RWP that are affected by the changed condition or new information;

(C) the efforts made by the political subdivision to work with the RWPG to obtain an amendment; and

(D) the proposed amendment to the approved RWP.

(2) If the EA determines that the changed condition or new information warrants a change in the approved RWP, the EA shall request the RWPG to consider making the appropriate change and provide the reason in writing. The political subdivision that submitted the petition will receive notice of any action requested of the RWPG by the EA. If the RWPG does not amend its plan consistent with the request within 90 days, the EA will present the issue to the Board for consideration at a public meeting. Before presenting the issue to the Board, the EA will provide the RWPG, the political subdivision submitting the petition, and any political subdivision determined by the EA to be affected by the issue 30 days notice.

(b) Major Amendments to RWPs and State Water Plan. A RWPG may amend an adopted RWP at any meeting, after giving notice for a major amendment and holding a hearing according to §357.21(d) of this title (relating to Notice and Public Participation). An amendment is major if it does not meet the criteria of subsection (c), (d) or (e) of this section. A RWPG may propose amendments to an approved RWP by submitting proposed amendments to the Board for its consideration and possible approval under the standards and procedures of this section.

(1) Initiation of a Major Amendment. An entity may request a RWPG amend its adopted RWP. A RWPG's consideration for action to initiate an amendment may occur at a regularly scheduled meeting.

(2) RWPG Public Hearing. The RWPG shall hold a public hearing on the amendment as defined in §357.21(d) of this title. The amendment shall be available for agency and

public comment at least 30 days prior to the public hearing and 30 days following the public hearing as defined in §357.21(d) of this title.

(3) The proposed major amendment:

(A) Shall not result in an over-allocation of an existing or planned source of water;

(B) Shall not produce unmet needs new to the adopted RWP; and

(C) Shall conform with rules applicable to RWP development as defined in Subchapters C and D of this chapter.

(4) RWPG Major Amendment Adoption. The RWPG may adopt the amendment at a regularly scheduled RWPG meeting held in accordance with §357.21(b) of this title following the 30-day public comment period held in accordance with §357.21(d) of this title. The amendment shall include response to comments received.

(5) Board Approval of Major Amendment. After adoption of the major amendment, the RWPG shall submit the amendment to the Board which shall consider approval of the amendment at its next regularly scheduled meeting following EA review of the amendment.

(c) Minor Amendments to RWPs and State Water Plan.

(1) Minor Amendment to RWP. A RWPG may amend its RWP by first providing a copy of the proposed amendment to the EA for a determination as to whether the amendment would be minor.

(2) EA Pre-Adoption Review. The EA shall evaluate the proposed minor amendment prior to the RWPG's vote to adopt the amendment. An amendment is minor if it meets the following criteria:

(A) does not result in over-allocation of an existing or planned source of water;

(B) does not relate to a new reservoir;

(C) does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;

(D) does not have a significant substantive impact on water planning or previously adopted management strategies; and

(E) does not delete or change any legal requirements of the plan.

(3) Determination by EA. If the EA determines that the proposed amendment is minor, EA shall notify, in writing, the RWPG as soon as practicable.

(4) RWPG Public Meeting. After receipt of the written determination from the EA, the RWPG shall conduct a public meeting in accordance with §357.21(c) of this title. The public shall have an opportunity to comment and the RWPG shall amend the proposed minor amendment based on public comments, as appropriate, and to comply with existing statutes and rules related to regional water planning responses.

(5) Board Approval of Minor Amendment. After adoption of the minor amendment, the RWPG shall submit the amendment to the Board which shall approve the amendment at its next regularly scheduled meeting unless the amendment contradicts or is in substantial conflict with statutes and rules relating to regional water planning.

(d) Amendment for Water Planning for a Clean Coal Project. An amendment to a RWP or the state water plan to facilitate planning for water supplies reasonably required for a clean coal project, as defined by Texas Water Code §5.001, relating to the Texas Commission on Environmental Quality, shall be adopted by the process described in this section. However, a RWPG may amend the RWP to accommodate planning for a clean coal project without a public meeting or hearing if the EA determines that:

(1) the amendment does not significantly change the RWP; or

(2) the amendment does not adversely affect other water management strategies in the RWP.

(e) Substitution of Alternative Water Management Strategies. After notice is provided in accordance with §357.21(c) of this title, RWPGs may substitute one or more evaluated alternative water management strategies for a recommended strategy if the strategy originally recommended is no longer recommended and the substitution of the alternative water management strategy is capable of meeting the same water need. Proposed substitutions must receive written approval from the EA prior to substitution by the RWPG.

(f) Amending the State Water Plan. Following amendments of RWPs, including substitutions of alternative water management strategies, the Board shall make any necessary amendments to the state water plan as outlined in §358.4 of this title (relating to Guidelines).

RULE §357.60 Consistency of Regional Water Plans

(a) RWPGs shall submit to the development Board a RWP that is consistent with the guidance principles and guidelines outlined in §357.20 of this title (relating to Guidance Principles for State and Regional Water Planning). Information provided shall be based on data provided or approved by the Board in a format consistent with the guidelines of Subchapters C and D of this chapter and guidance by the EA.

(b) For the purposes of the Texas Water Code §16.053(j) (relating to Board Financial Assistance) projects proposed to the Board for funding will be considered to meet any need identified in an approved RWP in a manner consistent with the RWP if the project:

(1) Is an enhancement of a current water supply identified in the analysis developed under §357.32 of this title (relating to Water Supply Analysis) as meeting a demand, even though the project is not specifically recommended in the RWP;

(2) Involves a minor modification to an existing surface water right that is not in conflict with the RWP; and

(3) Is meeting a need in a manner consistent with the plan developed under Subchapters C and D of this chapter.

(4) For the purposes of the Texas Water Code §16.053(j), projects proposed to the Board for funding to meet any need identified in an approved RWP for which there is not a recommended water management strategy in such plan will be considered by the Board not to be consistent with the approved RWP.

(5) For the purposes of the Texas Water Code §16.053(k) (relating to Board Waivers), the Board may consider, among other factors, changed conditions if a political subdivision requests a waiver of the Texas Water Code §16.053(j) for a project proposed to the Board for funding to meet a need in a manner that is not consistent with the manner the need is addressed in an approved RWP. The Board shall request the

members of any affected RWPG to provide input on the request for waiver of the Texas Water Code §16.053(j).

(c) Relation to state and local plans. RWPs shall be consistent with Chapter 358 of this title (relating to State Water Planning Guidelines) and this chapter. RWPGs shall consider and use as a guide the state water plan and local water plans provided for in the Texas Water Code §16.054 (relating to Local Water Planning).

RULE §357.61 Intraregional Conflicts in Development of Regional Water Plans

The EA shall provide technical assistance within available resources to the RWPGs requesting such assistance in performing regional water planning activities and if requested, may facilitate resolution of conflicts within RWPAs.

RULE §357.62 Interregional Conflicts

(a) In the event the Board finds that an interregional conflict exists between adopted RWPs, the EA may use the following process:

(1) notify the affected RWPGs of the nature of the interregional conflict;

(2) request affected RWPGs assistance in resolving the conflict; and

(3) negotiate resolutions of conflicts with RWPGs as determined by the EA.

(b) In the event the negotiation is unsuccessful, the EA may:

(1) determine a proposed recommendation for resolution of the conflict;

(2) provide notice of its intent to hold a public hearing on proposed recommendations for resolution of the conflict by publishing notice of the proposed change in the Texas Register and in a newspaper of general circulation in each county located in whole or in part in the RWPAs involved in the dispute 30 days before the public hearing and by mailing notice of the public hearing 30 days before public hearing to those persons or entities listed in §357.21(d) of this title (relating to Notice and Public Participation) in the RWPAs proposed to be impacted, and to each county judge of a county located in whole or in part in the RWPAs proposed to be impacted and to each affected RWPG;

(3) hold a public hearing on the proposed recommendation for resolution of the conflict at a time and place determined by the EA. At the hearing, the EA shall take comments from the RWPGs, political subdivisions, and members of the public on the issues identified by the Board as unresolved problems; and

(4) make a recommendation to the Board for resolution of the conflict.

(c) The Board shall consider the EA's recommendation and any written statements by a representative for each affected RWPG and determine the resolution of the conflict. The Board's decision is final and not appealable.

(d) The EA shall notify affected RWPGs of Board's decision and shall direct changes to the affected RWPs.

RULE §357.63 Failure of a Regional Water Plan to Meet Regional Water Planning Requirements

(a) In the event the Board finds that the RWP does not meet the requirements of the Texas Water Code §16.053, this chapter, and Chapter 358 of this title (relating to State Water Planning Guidelines), the Board shall direct the RWPG to make changes necessary for compliance with legal requirements.

(b) In the event the Board directs the RWPG to make changes to its RWP, the RWPG may request a reasonable amount of time, within any statutory deadlines, to complete the required changes.

RULE §357.64 Conflicts Between Regional Water Plans and Groundwater Management Plans

(a) A groundwater conservation district may file a written petition with the EA stating that a potential conflict exists between the district's approved management plan developed under Texas Water Code §36.1071 (relating to Management Plans) and the approved state water plan. A copy of the petition shall be provided to the affected RWPG. The petition must state:

(1) the specific nature of the conflict;

(2) the specific sections and provisions of the approved management plan and approved state water plan that are in conflict; and

(3) the proposed resolution to the conflict.

(b) If the EA determines a conflict exists, the EA will provide technical assistance to and coordinate with the groundwater conservation district and the affected RWPG to resolve the conflict. Coordination may include any of the following processes:

(1) requiring the RWPG to respond to the petition in writing;

(2) meeting with representatives from the groundwater conservation district and the RWPG to informally mediate the conflict; and/or

(3) coordinating a formal mediation session between representatives of the groundwater conservation district and the RWPG.

(c) If the parties do not reach resolution, the EA will recommend a resolution to the conflict to the Board within 60 days of the date the mediation is completed. Notice shall be provided at least 15 days prior to the date of the Board meeting to discuss the proposed resolution. The Board may:

(1) revise an approved RWP; and

(2) revise a district's approved management plan.

(d) If the Board requires a revision to the groundwater conservation district's approved management plan, the Board shall provide information to the groundwater conservation district on what revisions are required and why. The groundwater conservation district shall prepare any revisions to its plan based on the information provided by the Board and hold, after notice, at least one public hearing. The groundwater conservation district shall consider all public and Board comments, prepare, revise, and adopt its plan, and submit the revised plan to the Board pursuant to Chapter 356 of this title (relating to Groundwater Management). If the groundwater conservation district disagrees with the decision of the Board, the district may appeal the decision to a district court in Travis County, Texas.

(e) If the Board requires a revision to the approved RWP, the Board shall provide information to the RWPG on what revisions are required and why. The RWPG shall prepare the revisions as a major amendment to their approved RWP pursuant to §357.51(b) of this title.

(f) At the Board's discretion, the Board shall include in the state water plan a discussion of the conflict and its resolution.

Appendix F

Texas Administrative Code Title 31 Part 10 Chapter 358: State Water Planning Guidelines

TITLE 31 NATURAL RESOURCES AND CONSERVATION
PART 10 TEXAS WATER DEVELOPMENT BOARD
CHAPTER 358 STATE WATER PLANNING GUIDELINES
SUBCHAPTER A STATE WATER PLAN DEVELOPMENT
RULE §358.1 **Applicability**

This subchapter governs the Board's preparation, development, formulation, and adoption of the state water plan.

RULE §358.2 **Definitions**

The following words and acronyms, used in this chapter, have the following meanings.

(1) Board--The Texas Water Development Board.
(2) Commission--The Texas Commission on Environmental Quality.
(3) Regional water plan (RWP)--The plan adopted or amended by a regional water planning group pursuant to Texas Water Code §16.053 (relating to Regional Water Plans) and Chapter 357 of this title (relating to Regional Water Planning).
(4) Regional water planning area--Area designated pursuant to Texas Water Code §16.053 and Chapter 357 of this title.
(5) Regional water planning group (RWPG)--Group designated pursuant to Texas Water Code §16.053 and Chapter 357 of this title.
(6) River and stream segments of unique ecological value--Those river or stream segments that may be identified by the Board in coordination with the Texas Parks and Wildlife Department and the Commission or identified in an approved regional water plan based on the following criteria:
(A) Biological function--stream segments which display significant overall habitat value including both quantity and quality considering the degree of biodiversity, age, and uniqueness observed and including terrestrial, wetland, aquatic, or estuarine habitats;
(B) Hydrologic function--stream segments which are fringed by habitats that perform valuable hydrologic functions relating to water quality, flood attenuation, flow stabilization, or groundwater recharge and discharge;
(C) Riparian conservation areas--stream segments which are fringed by significant areas in public ownership including state and federal refuges, wildlife management areas, preserves, parks, mitigation areas, or other areas held by governmental organizations for conservation purposes, or stream segments which are fringed by other areas managed for conservation purposes under a governmentally approved conservation plan;
(D) High water quality/exceptional aquatic life/high aesthetic value--stream segments and spring resources that are significant due to unique or critical habitats and exceptional aquatic life uses dependent on or associated with high water quality; or
(E) Threatened or endangered species/unique communities--sites along stream where water development projects would have significant detrimental effects on state or federally listed

threatened and endangered species; and sites along streams significant due to the presence of unique, exemplary, or unusually extensive natural communities.

(7) Site of unique value for construction of reservoirs--Those sites identified by the Board in coordination with the Texas Parks and Wildlife Department and the Commission or identified in an approved regional water plan where:

(A) Site-specific reservoir development is recommended as a specific water management strategy or as a unique reservoir site in an adopted regional water plan; or

(B) The location, hydrologic, geologic, topographic, water availability, water quality, environmental, cultural, and current development characteristics, or other pertinent factors make the site uniquely suited for reservoir development to provide water supply for:

(i) The current planning period; or

(ii) Where it might reasonably be needed to meet needs beyond the 50-year planning period.

(8) State drought preparedness plan--A plan, separate from the state water plan, that is developed by the Drought Preparedness Council for the purpose of mitigating the effects of drought pursuant to Texas Water Code §16.0551 (relating to State Drought Preparedness Plan).

(9) State drought response plan--A plan prepared and directed by the chief of the Texas Division of Emergency Management for the purpose of managing and coordinating the drought response component of the state water plan and the state drought preparedness plan pursuant to Texas Water Code §16.055 (relating to Drought Response Plan).

(10) State water plan--The most recent comprehensive statewide water plan adopted by the Board under Texas Water Code §16.051 (relating to State Water Plan).

(11) Water management strategy--A plan or specific project to meet a need for additional water by a discrete user group, which can mean increasing the total water supply or maximizing an existing supply.

RULE §358.3 Guidance Principles

Development of the state water plan shall be guided by the following principles.

(1) The state water plan shall provide for the preparation for and response to drought conditions.

(2) The regional water plans and state water plan shall serve as water supply plans under drought of record conditions.

(3) Consideration shall be given to the construction and improvement of surface water resources and the application of principles that result in voluntary redistribution of water resources.

(4) Regional water plans shall provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions so that sufficient water will be available at a reasonable cost to satisfy a reasonable projected use of water to ensure public health, safety, and welfare; further economic development; and protect the agricultural and natural resources of the regional water planning area.

(5) Regional water plans shall include identification of those policies and action that may be needed to meet Texas' water supply needs and prepare for and respond to drought conditions.

(6) RWPG decision-making shall be open to and accountable to the public with decisions based on accurate, objective and reliable information with full dissemination of planning results except for those matters made confidential by law.

(7) The RWPG shall establish terms of participation in its water planning efforts that shall be equitable and shall not unduly hinder participation.

(8) Consideration of the effect of policies or water management strategies on the public interest of the state, water supply, and those entities involved in providing this supply throughout the entire state.

(9) Consideration of all water management strategies the regional water plan determines to be potentially feasible when developing plans to meet future water needs and to respond to drought so that cost effective water management strategies which are consistent with long-term protection of the state's water resources, agricultural resources, and natural resources are considered and approved.

(10) Consideration of opportunities that encourage and result in voluntary transfers of water resources, including but not limited to regional water banks, sales, leases, options, subordination agreements, and financing agreements.

(11) Consideration of a balance of economic, social, aesthetic, and ecological viability.

(12) For regional water planning areas without approved regional water plans or water providers for which revised plans are not developed through the regional water planning process, the use of information from the adopted state water plan and other completed studies that are sufficient for water planning shall represent the water supply plan for that area or water provider.

(13) All surface waters are held in trust by the state, their use is subject to rights granted and administered by the Commission, and the use of surface water is governed by the prior appropriation doctrine, unless adjudicated otherwise.

(14) Existing water rights, water contracts, and option agreements shall be protected. However, potential amendments of water rights, contracts and agreements may be considered and evaluated. Any amendments will require the eventual consent of the owner.

(15) The production and use of groundwater in Texas is governed by the rule of capture doctrine unless and to the extent that such production and use is regulated by a groundwater conservation district, as codified by the legislature at Texas Water Code §36.002 (relating to Ownership of Groundwater).

(16) Consideration of recommendations of river and stream segments of unique ecological value to the legislature for potential protection.

(17) Consideration of recommendation of sites of unique value for the construction of reservoirs to the legislature for potential protection.

(18) Consideration of water planning and management activities of local, regional, state, and federal agencies, along with existing local, regional, and state water plans and information and existing state and federal programs and goals.

(19) Designated water quality and related water uses as shown in the state water quality management plan shall be improved or maintained.

(20) Coordination of water planning and management activities of RWPGs to identify common needs and issues and achieve efficient use of water supplies, including the Board and other relevant RWPGs, working together to identify common needs, issues, and challenges while working together to resolve conflicts in a fair, equitable, and efficient manner.

(21) The water management strategies identified in approved RWPs to meet needs shall be described in sufficient detail to allow a state agency making a financial or regulatory decision to determine if a proposed action before the state agency is consistent with an approved RWP.

(22) The evaluation of water management strategies shall use environmental information in accordance with the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water) where applicable or, in basins where standards are not available or have not been adopted, information from existing site-specific studies or state consensus environmental planning criteria.

(23) Consideration of environmental water needs including instream flows and bay and estuary inflows, including adjustments by the RWPGs to water management strategies to provide for environmental water needs including instream flows and bay and estuary needs. Consideration shall be consistent with the Commission's adopted environmental flow standards under 30 TAC Chapter 298 in basins where standards have been adopted.

(24) Planning shall be consistent with all laws applicable to water use for the state and regional water planning area.

(25) The inclusion of ongoing water development projects that have been permitted by the Commission or a predecessor agency.

(26) Specific recommendations of water management strategies shall be based upon identification, analysis, and comparison of all water management strategies the RWPG determines to be potentially feasible so that the cost effective water management strategies which are environmentally sensitive are considered and adopted unless the RWPG demonstrates that adoption of such strategies is not appropriate. To determine cost-effectiveness, the RWPGs will use the process described in §357.34(d)(3)(A) of this title (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies) and, to determine environmental sensitivity, the RWPGs shall use the process described in §357.34(d)(3)(B) of this title.

(27) RWPGs shall conduct their planning to achieve efficient use of existing water supplies, explore opportunities for and the benefits of developing regional water supply facilities or providing regional management of water facilities, coordinate the actions of local and regional water resource management agencies, provide substantial involvement by the public in the decision-making process, and provide full dissemination of planning results.

(28) RWPGs must consider existing regional water planning efforts when developing their plans.

RULE §358.4 Guidelines

(a) The executive administrator shall prepare, develop, and formulate the state water plan and the Board shall adopt a state water plan pursuant to the schedule in Texas Water Code §16.051. The executive administrator shall identify the beginning of the 50-year planning period for the state and regional water plans. The executive administrator shall incorporate into the state water plan presented to the Board those regional water plans approved by the Board pursuant to Texas Water Code §16.053 and Chapter 357 of this title (relating to Regional Water Planning). The Board shall, not less than 30 days before adoption or amendment of the state water plan, publish notice in the *Texas Register* of its intent to adopt a state water plan and shall mail notice to each regional water planning group. The Board shall hold a hearing, after which it may adopt a water plan or amendments thereto.

(b) The state water plan shall include summaries for the state and from approved regional water plans, when available, which shall address, at a minimum, the following topics:

(1) Basis for planning, including sections on planning history, Texas water statutes, rules, regulations, and Texas' water supply institutions;
(2) Description of methods used for projecting future water demands which shall include methods for projecting future population and water demands for municipal and associated commercial and institutional uses, manufacturing, irrigation, steam electric power generation, mining, and livestock watering;
(3) Description of methods to address water quality problems related to water supply, to ensure public health, safety and welfare, to further economic growth, to protect agricultural and natural resources, to determine water supply availability, and to address drought response planning;
(4) Description of future conditions which shall, at a minimum, include:
(A) Demands for water;
(B) Supplies currently available;
(C) Comparison of water demand and supply to identify surpluses or needs of water;
(D) Social and economic impact of not meeting needs;
(E) Recommended solutions to meet needs;
(F) Needs for which no feasible water management strategy exists; and
(G) descriptions in subparagraphs (A) - (F) of this paragraph shall be presented for each county and basin by the major providers of water for municipal uses and for the following water use categories: municipal and associated commercial and institutional uses; manufacturing; irrigation; steam electric power generation; mining; and livestock watering;
(5) Consideration of recommendations of river and stream segments of unique ecological value and sites of unique value for construction of reservoirs to the legislature for potential protection;
(6) Regulatory, administrative, and legislative recommendations that the Board believes are needed and desirable to facilitate the orderly development, management, and conservation of water resources, to facilitate more voluntary water transfers, and the preparation for and response to drought conditions in order that sufficient water will be available at a reasonable cost to ensure public health, safety and welfare, further economic development, and protect the agricultural and natural resources of the entire state;
(7) The progress in meeting future water needs, including an evaluation of implementation of all water management strategies that were recommended in the previous state water plan and projects funded by the Board; and
(8) Current and planned preparations for, and responses to, drought conditions in the state to be used in the development of the state's drought preparedness plan by the Drought Preparedness Council.

SUBCHAPTER B DATA COLLECTION

RULE §358.5 **Groundwater and Surface Water Use Surveys**

The executive administrator shall conduct surveys at least annually of persons and/or entities using groundwater and surface water for municipal, industrial, power generation, or mining purposes to gather data to be used for long-term water supply planning. The survey instrument will identify which responses are required and which are optional. The executive administrator will send the surveys to the appropriate recipients by first-class mail, electronic mail, or both. Recipients shall return the survey to the executive administrator within 60 days of the postmark date or electronic mail sent date. Surveys may be returned to the executive administrator electronically. The executive administrator shall determine if the survey is administratively complete. A survey is administratively complete if all required responses are provided. Incomplete surveys will be returned to the recipient, who will have 60 days from the new postmark date or electronic mail sent date to complete the items found deficient and return the survey to the executive administrator. A person or entity that fails to return their survey within 60 days or correct a survey that is not administratively complete within 60 days is ineligible for funding from board programs. Ineligibility will remain until the incomplete survey instruments are submitted to the executive administrator and determined to be administratively complete. Further, a person who fails to complete and return the survey commits an offense that is punishable as a Class C misdemeanor, pursuant to Texas Water Code §16.012(m).

RULE §358.6 Water Loss Audits

(a) In accordance with Texas Water Code §16.0121, a retail public utility, as defined by Texas Water Code §13.002, that provides potable water shall perform a water loss audit and file with the executive administrator a water loss audit computing the utility's system water loss during the preceding calendar year, unless a different 12-month period is allowed by the executive administrator. The water loss audit may be submitted electronically.

(1) Audit required annually. The utility must file the water loss audit with the executive administrator annually by May 1st if the utility:

(A) has greater than 3,300 connections; or

(B) is receiving financial assistance from the board, regardless of the number of connections. A retail public utility is receiving financial assistance from the board if it has an outstanding loan, loan forgiveness agreement, or grant agreement from the board.

(2) Audit required every five years. The utility must file the water loss audit with the executive administrator by May 1, 2016, and every five years thereafter by May 1st if the utility has 3,300 or fewer connections and is not receiving financial assistance from the board.

(3) The water loss audit shall be performed in accordance with methodologies developed by the executive administrator based on the population served by the utility and taking into consideration the financial feasibility of performing the water loss audit, population density in the service area, the retail public utility's source of water supply, the mean income of the service population, and any other factors determined by the executive administrator. The executive administrator will provide the necessary forms and methodologies to the retail public utility.

(4) The executive administrator shall compile the information included in the water loss audits according to category of retail public utility and according to regional water planning area.

(b) The executive administrator shall determine if the water loss audit is administratively complete. A water loss audit is administratively complete if all required responses are provided. In the event the executive administrator determines that a retail public utility's water loss audit is incomplete, the executive administrator shall notify the utility. A retail public utility that provides potable water that fails to submit a water loss audit or that fails to correct a water loss audit that is not administratively complete within the timeframe provided by the executive administrator is ineligible for financial assistance for water supply projects under Texas Water Code, Chapter 15, Subchapters C, D, E, F, J, O, Q, and R; Chapter 16, Subchapters E and F; and Chapter 17, Subchapters D, I, K, and L. The retail public utility will remain ineligible for financial assistance until a complete water loss audit has been filed with and accepted by the executive administrator.

Appendix G

Background and Methodology for Land Resource/Cover Type Assessment – Excerpt from Section 2 of Environmental Evaluation Interim Report – Sulphur River Basin Comparative Assessment

Land Resource / Cover Type Assessment

2.1 Background

The Texas Parks and Wildlife Department (TPWD) Ecological Systems Classification data set was utilized to develop the cover types within the footprints of the alternative reservoir sites, including Parkhouse I, Parkhouse II, Marvin Nichols 1A, Wright Patman (237.5 ft. msl and 259.5 ft. msl), Jim Chapman, and Talco. A number of key partners including the Texas Natural Resources Information System (TNRIS), Texas Forest Service, Natural Resources Conservation Service (NRCS), NatureServe, The Nature Conservancy (TNC), and the Missouri Resource Assessment Partnership (MoRAP) were involved in developing the Ecological Systems Classification project.

The creation of the Ecological Systems Classification took into consideration a wide variety of biotic and abiotic variables to establish detailed regional comparisons of vegetation and habitats. Data sources utilized in this classification system included the Farm Service Agency (FSA) National Agriculture Imagery Program (NAIP) aerial imagery, satellite imagery, 10-meter digital elevation models (DEM), U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) soil data types, TPWD vegetational areas, U.S. Geologic Survey (USGS) National Hydrography Dataset (NHD) layers, USGS Geologic Atlas of Texas, as well as field verified site data. The objective of this classification was to create a land cover type set with sufficient detail to be useful at the sub-county level, targeting the scale of 1:24,000, such as the USGS's 7.5 minute quadrangle scale.

Supervised classifications were performed on both color infra-red and multi-spectral satellite imagery to break down the images into objects that were more easily definable. Both leaf-on and leaf-off imagery conditions were used to establish a proper baseline. Detailed spatial analysis was performed at a 10-meter resolution, with the use of DEM's to identify areas of steep slopes (20% or greater), cliffs, and aspect. The "Ecological Site Type/Range Site" attributes from the NRCS soils data provided more detail to the species typically found in specific soils types, and field verification along public roads and public lands were used to sample present species. Seasonally flooded, versus temporarily flooded areas were estimated based on information from the SSUGRO soil data layer. Riparian data was determined to be either small or large stream riparian areas based on the NHD stream types.

All of the alternative reservoir sites evaluated in this report fell within the area surveyed in the Ecological Classification System project. As such, the data from the TPWD Ecological Classification System project was considered to be the most recent, readily available data collected for all alternative reservoir sites that would allow for a balanced comparison.

2.2 Methodology

The cover types used in the TPWD Ecological Systems Classification were derived from the NatureServe Ecological Classification System (Comer, 2003). This classification methodology resulted in a large number of cover types that were not readily observable or comparable at the scale spanning much of the Sulphur River Basin. To produce a cover type/vegetation classification within each alternative reservoir site that would be more readily observable and comparable, the Ecological Classification System cover types were re-assigned into broader and more general categories based on the EPA's Level I National Land Cover Data (NLCD). The definitions from the NLCD cover types were compared to the definitions contained in the Draft Descriptions of Systems, Mapping Subsystems, and Vegetation Types for Phase II (Elliott, 2009), and matched accordingly. Table 1 identifies the cover types resulting from this re-classification and the corresponding Ecological Classification System cover types that were included. Once this initial re-classification was complete, an additional re-classification was conducted utilizing the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) data within each alternative reservoir site. A GIS analysis was then conducted and the re-classified vegetation/cover types were clipped to the NWI data layer in an effort to try and distinguish the bottomland hardwood forest cover type from the forested wetland cover type, as these cover types often overlap when based solely on remotely sensed data. Table 2 summarizes the final types and amounts (acres) of each cover type that were identified within the footprint of each alternative reservoir site. Figures 2 through 8 display the cover types identified within the footprint of each alternative reservoir site.

Table 1: Results of the Re-Classification of the Ecological Classification System Cover Types into EPA-based Level I NLCD Cover Types

EPA-Based Level I Cover Types	TPWD Ecological Systems Classification Cover Types
Barren	o Barren
Bottomland Hardwood Forest	o Pineywoods: Bottomland Seasonally Flooded Hardwood Forest o Pineywoods: Bottomland Temporarily Flooded Hardwood Forest o Pineywoods: Bottomland Temporarily Flooded Mixed Pine / Hardwood Forest o Pineywoods: Small Stream and Riparian Seasonally Flooded Hardwood Forest o Pineywoods: Small Stream and Riparian Temporarily Flooded Hardwood Forest
Forested Wetland	o Pineywoods: Bottomland Baldcypress Swamp o Pineywoods: Small Stream and Riparian Baldcypress Swamp o Swamp
Grassland/Old Field	o Blackland Prairie: Disturbance or Tame Grassland o Pineywoods: Bottomland Wet Prairie o Pineywoods: Small Stream and Riparian Wet Prairie o Post Oak Savanna: Savanna Grassland o Pineywoods: Disturbance or Tame Grassland
Herbaceous Wetland	o Marsh o Pineywoods: Bottomland Herbaceous Wetland o Pineywoods: Herbaceous Seepage Bog o Pineywoods: Small Stream and Riparian Herbaceous Wetland o Pineywoods: Wet Hardwood Flatwoods
Open Water	o Open Water o Pineywoods: Herbaceous Flatwoods Pond
Row Crops	o Row Crops
Shrub Wetland	o Pineywoods: Bottomland Deciduous Successional Shrubland o Pineywoods: Small Stream and Riparian Deciduous Successional Shrubland
Shrubland	o Native Invasive: Deciduous Shrubland o Native Invasive: Juniper Shrubland o Native Invasive: Mesquite Shrubland o Pineywoods: Small Stream and Riparian Evergreen Successional Shrubland o Red River: Floodplain Evergreen Shrubland

(Table 1 continued)

EPA-Based Level I Cover Types	TPWD Ecological Systems Classification Cover Types
Upland Forest	o Native Invasive: Deciduous Woodland o Pine Plantation > 3 meters tall o Pine Plantation 1 to 3 meters tall o Pineywoods: Dry Pine / Hardwood Forest or Plantation o Pineywoods: Dry Pine Forest or Plantation o Pineywoods: Dry Upland Hardwood Forest o Pineywoods: Hardwood Flatwoods o Pineywoods: Longleaf or Loblolly Pine / Hardwood Flatwoods or Plantation o Pineywoods: Longleaf or Loblolly Pine Flatwoods or Plantation o Pineywoods: Northern Mesic Hardwood Forest o Pineywoods: Northern Mesic Pine / Hardwood Forest o Pineywoods: Pine / Hardwood Forest or Plantation o Pineywoods: Pine Forest or Plantation o Pineywoods: Sandhill Pine Woodland o Pineywoods: Small Stream and Riparian Temporarily Flooded Mixed Forest o Pineywoods: Upland Hardwood Forest o Post Oak Savanna: Oak / Hardwood Slope Forest o Post Oak Savanna: Post Oak / Redcedar Motte and Woodland o Post Oak Savanna: Post Oak Motte and Woodland
Urban*	o Urban High Intensity o Urban Low Intensity

* According to the descriptions contained within the TPWD Ecological Systems Classification, urban areas consist of built-up areas including wide transportation corridors that are dominated by impervious cover (Elliott, 2009). By definition, this cover type could include smaller roadways, parking lots, and other areas dominated by impervious cover.

Table 2: Summary of Types and Approximate Amounts (acres) of Cover Types within the Footprint of each Alternative Reservoir Site

ALTERNATIVE RESERVOIR SITES	Wright Patman (237.5)	Wright Patman (259.5)	Marvin Nichols 1A	Talco	Parkhouse I	Parkhouse II	Jim Chapman (446.2)
COVER TYPES							
Barren	<1	<1	<1	<1	1	1	1
Bottomland Hardwood Forest	2,566	8,202	10,156	7,251	4,267	1,960	2,264
Forested Wetland	16,069	35,098	21,444	10,316	5,487	1,116	736
Grassland/Old Field	201	4,026	18,241	18,107	12,133	7,718	373
Herbaceous Wetland	438	1,151	1,244	276	432	91	94
Open Water	2,636	3,376	1,162	394	181	182	42
Row Crops	39	292	706	1,989	3,987	3,626	2
Shrub Wetland	55	204	1,405	468	278	28	109
Shrubland	34	187	444	288	65	19	241
Upland Forest	5,951	34,062	11,223	9,803	1,521	602	1,029
Urban	17	105	78	23	10	14	9
TOTAL	**28,006**	**86,703**	**66,103**	**48,915**	**28,362**	**15,357**	**4,900**

REFERENCES

Arnold, K. A. (2001a). Bachman's Sparrow. The Texas Breeding Bird Atlas. Texas A&M University System, College Station and Corpus Christi, TX. http://txtbba.tamu.edu (12 July 2001).

Arnold, K. A. (2001b). Peregrine Falcon. The Texas Breeding Bird Atlas. Texas A&M University System, College Station and Corpus Christi, TX. http://txtbba.tamu.edu (12 July 2001).

Bauer, Kendra K. 2010. Past, Present and Future Status of the Endangered American Burying Beetle (Nicrophorus americanus) in Texas. The University of Texas at Austin.

Bonn, E.W., and R.J. Kemp. 1952. Additional records of fresh-water fishes from Texas. Copeia 1952(3):204-205.

Bousman, C.B., Collins, M. B., and Perttula, T.K. (1988) *Quaternary geomorphology at Cooper Basin: A framework for archaeological inquiry, Delta and Hopkins Counties, TX,* Prewitt and Associates, Inc., Reports of Investigations 55

Chipman, D.E. (1987) *In Search of Cabeza de Vaca's Route Across Texas: An Historiographical Survey,* Southwestern Historical Quarterly *91*

Cross, F.B. 1967. Handbook of Fishes of Kansas. University of Kansas Museum of Natural History Misc. Publ. No. 45, Lawrence. 357 pp.

Darwin, R.L., Ferring, C.R., and Ellwood, B.B. (1990) *Geoelectric Stratigraphy and Subsurface Evaluation of Quaternary Stream Sediments at the Cooper Basin, NE Texas,* Geoarchaeology vol. 5, no. 1, p. 53-79

Davis, William B. and Schmidly, David J. 1997. The Mammals of Texas - Online Edition. http://www.nsrl.ttu.edu/tmot1/Default.htm.

Donaldson, W., A. H. Price, and J. Morse. 1994. The current status and future prospects of the Texas horned lizard (Phrynosoma cornutum) in Texas. Texas Journal of Science 46:97-113.

EPA, 2012. http://water.epa.gov/type/wetlands/bottomland.cfm

EPA. (http://water.epa.gov/type/rsl/monitoring/vms56.cfm).

Ferring, C.R. (1995) *Middle Holocene environments, geology, and archaeology in the Southern Plains,* in Bettis E.A. III, ed. *Archaeological Geology of the Archaic Period in North America: Boulder, Co,* Geological Society of America Special Paper 297

Fields, R.C, Blake, M.E. and Kibler, K.W. (1997) *Synthesis of the Prehistoric and Historic Archaeology of Cooper Lake, Delta and Hopkins Counties, Texas,* USACE Reports of Investigations, No 104

Hodges, J.D., 1997, Development and ecology of bottomland hardwood sites: Forest Ecology and Management, v. 90, p. 117–125.

http://www.texasturtles.org/index.html

Hubbs, C. L., R.J. Edwards and G.P. Garret. 1991. An annotated checklist of freshwater fishes of Texas, with key to identification of species. Texas Journal of Science, Supplement 43(4):1-56.

Hubbs, C., R.J. Edwards, and G.P. Garrett. 2008. An annotated checklist of the freshwater fishes of Texas, with keys to identification of species. Texas Journal of Science, Supplement, 2nd edition 43(4):1-87.

Hunt, S.M. and Cliff, M.B. (1998) *Cultural Resources Survey of 245 Acres at the White Oak Creek Wildlife Management Area, Cass, Morris, and Titus Counties, Texas,* USACE Reports of Investigations, No 153

Journey, D. H., Bohlin, J. Linder Linsley, S.E., Caran, S.C., and Pedler, D. R. (1989) *Archaeological Survey of Cooper Lake, Delivery Order Number 7, 1989*, USACE Contract No. DACW63-87-D-0017

Mehrer, M.W., and Wescott, K.L eds. (2006) *GIS and Archaeological Site Location Modeling*, CRC Press Boca Raton, FL

Page, L.M., and B.M. Burr. 1991. A field guide to freshwater fishes of North America north of Mexico. Houghton Mifflin Company, Boston, Massachusetts. 432 pp.

Perttula, T.K. (2004) *The Prehistory of Texas,* Texas A&M University Press, College Station, TX

Russell, T.R. 1986. Biology and life history of the paddlefish - a review, pp. 2-20. In: The paddlefish: status, management and propagation. J. G. Dillard, L. K. Graham, and T. R. Russell, eds. Spec. Publ., no. 7, North Central Division, American Fisheries Society, Columbia, Missouri.

Skinner, A., Bousman, B., Plumb, N., Wilson, A., Todd, J., and Jennings, T. (2005) *Archaeology and Quaternary Geology at Lake Ralph Hall, Fannin County, Texas*, AR Consulting Technical Report

TCEQ, 2011. Sulphur River basin Clean Rivers Program Highlights Report FY 2011

TNRCC (1999)

TPWDa. http://www.tpwd.state.tx.us/huntwild/wild/species/amperegrine/

TPWDb. http://www.tpwd.state.tx.us/huntwild/wild/species/leasttern/

TPWDc. http://www.tpwd.state.tx.us/huntwild/wild/species/piplover/

TPWDd. http://www.tpwd.state.tx.us/huntwild/wild/species/blackbear/

TPWDe. http://www.tpwd.state.tx.us/huntwild/wild/species/rafinesque/

TPWDf. http://www.tpwd.state.tx.us/huntwild/wild/species/whooper/

USDA. (http://www.usawaterquality.org/volunteer/ecoli/june2008manual/chpt2_ecoli.pdf).

Utah State University Cooperative Extension. (http://extension.usu.edu/waterquality/htm/whats-in-your-water/ph).

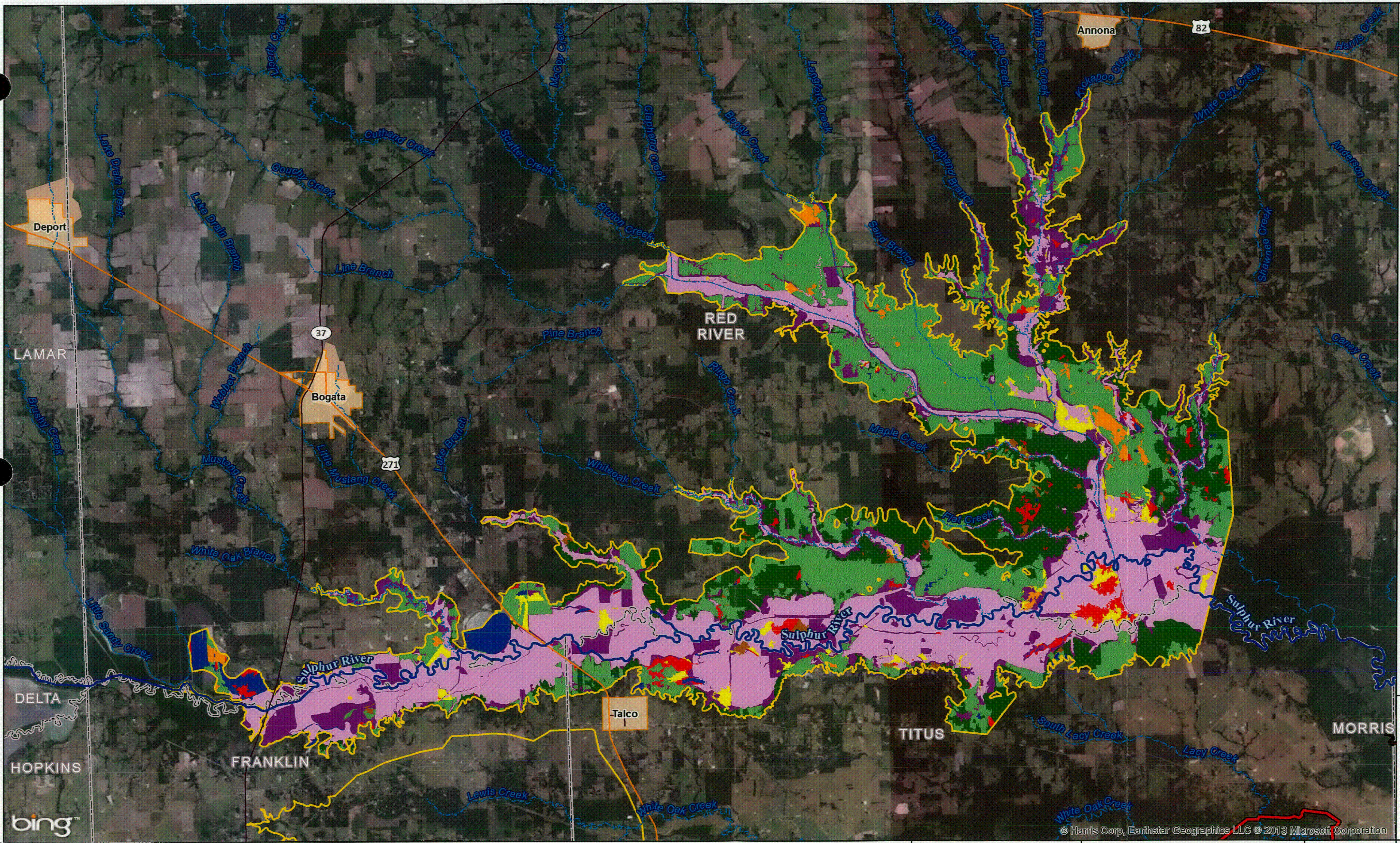
Wall, B.R. Jr. and C.R. Gilbert. 1980. Erimyzon oblongus (Mitchill), Creek Chubsucker.pp.397 in D.S. Lee et al. Atlas of North American Freshwater Fishes. N.C. State Mus. Nat. Hist., Raleigh, i-r+854 pp.

Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross, and W.C. Starnes. 2000. Diversity, Distribution, and Conservation status of the native freshwater fishes of the southern United States. Fisheries 25(10):7-29.

Winemiller, K. and Lujan, Nathan K. 2010. Status of Freshwater Mussels in Texas. Institute of Renewable Natural Resources, Texas A&M System.

Appendix H

Land Cover Type Figure 4 from the Environmental Evaluation Interim Report – Sulphur River Basin Comparative Assessment



County Boundary
City Boundaries
Streams
Sulphur River
Marvin Nichols 1A Alternative Reservoir Site (328 ft. msl)
White Oak Creek Mitigation Area
Barren
Bottomland Hardwood Forest
Forested Wetland
Grassland/Oldfield
Herbaceous Wetland
Open Water
Row Crops
Shrub Wetland
Shrubland
Upland Forest
Urban

Lamar, Red River, Fannin, Delta, Hopkins, Hunt, Franklin, Titus, Morris, Bowie, Cass

1:128,570

0 2 4 Miles

N E S W

U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT

Sulphur River Basin

Marvin Nichols1A Alternative Reservoir Site

Land Cover Types

FN PROJECT NO. MHP11453
DATE CREATED 6/12/2013
DATUM & COORDINATE SYSTEM NAD83 State Plane (feet) Texas North Central
FILE NAME 4_MN_Cover_Types
PREPARED BY SSJ

FREESE NICHOLS
4500 International Plaza Suite 200
Fort Worth, Texas 76109-4895
(817) 735-7300

FIGURE 4

Path: H:\ENVIRONMENTAL\FINAL_EXHIBITS\2-8_23-24_Land_Cover_Types\4_MN_Cover_Types.mxd

Appendix I

Background and Methodology for Threatened and Endangered Species Assessment from Section 3 of Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment

3.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES ASSESSMENT

3.1 Federally Listed Threatened and Endangered Species

The Endangered Species Act (ESA) was passed by Congress in 1973. The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. The U.S. Fish and Wildlife Service (USFWS) has primary responsibility for administering the ESA for terrestrial and freshwater organisms. Section 7 of the ESA requires Federal agencies to use their legal authorities to promote the conservation purposes of the ESA and to consult with the USFWS to ensure that effects of actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species (http://www.fws.gov/endangered/June2011).

Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. Section 9 of the ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and the interstate or international trade in listed plants and animals, including their parts and products, except under Federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct."

3.2 State Listed Threatened and Endangered Species

The Texas Endangered Species Act gives the Texas Parks and Wildlife Department (TPWD) the authority to establish a list of fish and wildlife that are endangered or threatened with statewide extinction. As defined by the statute, "fish and wildlife" excludes all invertebrates except mollusks and crustaceans. No person may capture, trap, take, or kill or attempt to capture, trap, take, or kill listed fish and wildlife species without a permit. Plants are not protected by these provisions. Endangered, threatened or protected plants may not be taken from public land for commercial sale or taken from private land for commercial purposes without a permit. Laws and regulations pertaining to state listed endangered or threatened animal species are contained in Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code and Sections 65.171 - 65.184 of Title 31 of the Texas Administrative Code (T.A.C.). Laws and regulations pertaining to state listed endangered or threatened plant species are contained in Chapter 88 of the TPW Code and Sections 69.01 - 69.14 of the T.A.C.

The Texas Endangered Species Act does not protect wildlife species from indirect or incidental take (e.g., destruction of habitat, unfavorable management practices, etc.). The TPWD has a Memorandum of Understanding with every state agency to conduct a thorough environmental review of state initiated and funded projects, such as highways, reservoirs, land acquisition, and building construction, to determine their potential impact on state endangered or threatened species.

3.3 Impact Assessment

For the purposes of evaluating each alternative reservoir sites potential to impact state or federally listed threatened or endangered species, county lists published by the USFWS and TPWD were referenced. When a reservoir's footprint extended across more than one county, all of the species listed for those counties were included in the assessment for that particular reservoir. Table 7 contains a summary of the approximate acreages associated with each alternative reservoir site as well as the counties used for their respective assessments. Due to there being a range of potential reallocation elevations at Wright Patman, this assessment utilized the lowest proposed alternative reallocation elevation of 237.5 ft. msl and the highest proposed reallocation elevation of 259.5 ft. msl to assess potential ranges of impacts. Figure 1 depicts the location of each of the alternative reservoir sites.

If a species was found to be listed by either agency, further analyses were conducted to determine the likelihood of occurrence for each species within the footprint of each alternative reservoir site. The likelihood of occurrence was evaluated using habitat and range descriptions provided by the USFWS, TPWD, or other relevant scientific literature sources. This information was then compared to the location of the reservoir sites and the habitats (cover types) that currently exist within these sites.

Table 1: Summary of Acreages and County Locations Associated with each Alternative Reservoir Site

ALTERNATIVE RESERVOIR SITE	Approximate Acreage	County Location
Wright Patman (259.5)	86,703	Bowie, Cass, Morris, Red River, Titus
Wright Patman (237.5)	28,007	Bowie, Cass, Morris, Red River,
Marvin Nichols 1A	66,103	Red River, Titus, Franklin, Delta, Lamar
Talco	48,916	Titus, Franklin, Hopkins
Parkhouse I	28,362	Delta, Hopkins
Parkhouse II	15,359	Lamar, Delta
Jim Chapman (446.2)	4,902	Delta, Hopkins

Cover type classifications within each potential reservoir site were conducted utilizing data from the TPWD Ecological Classification System that was completed in 2012 for this area of Texas supplemented with the USFWS NWI data. Other factors taken into consideration as part of this analysis included species dispersal potential (i.e., mobility), whether the species would be considered a permanent resident or stopover species (i.e., migratory), and the anticipated response a species might have following construction of a reservoir (i.e., positive or negative response). Table 8 contains the common and scientific names of the current federal and state listed species included in this assessment along with a brief description of their likely ranges, preferred habitats, and potential impacts. Results of the impact assessment are summarized in Table 9.

Table 2: State and Federally Listed Threatened / Endangered Species and Potential Impact

Common Name	Scientific Name	Discussion
FEDERAL SPECIES		
American Burying Beetle	*Nicrophorus americanus*	Low to no potential to negatively impact due to unlikely presence of the species. The historic Texas population consists of four Texas specimens from the 1880's. Since then, there were no confirmed specimens in Texas until 2003 when a single individual was found in Lamar County, Texas. Since 2008, no individuals have been captured in Texas. None have been collected from any other county outside of Lamar (Bauer, 2010).
Least Tern	*Sterna antillarum*	Low to no potential to negatively impact due to lack of preferred habitat within proposed project area. Species is primarily associated with the habitat along the Red River, which is not located within the assessment area. Nesting habitat of the Interior Least Tern includes bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs. In Texas, Interior Least Terns are found at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, on the Prairie Dog Town Fork of the Red River in the eastern Panhandle, and along the Red River (Texas/Oklahoma boundary) into Arkansas (TPWDb). Reservoirs could benefit this species by providing habitat along the shoreline.
Piping Plover	*Charadrius melodus*	Low to no potential to negatively impact due to lack of habitat and migratory nature of this species. Piping plovers are primarily a resident of the upper and central coastal area of Texas (Oberholser, 1974). These shorebirds live on sandy beaches and lakeshores (TPWDc). Reservoirs could benefit this species by providing habitat along the shoreline.
STATE SPECIES		
American Peregrine Falcon	*Falco peregrinus anatum*	Low potential to negatively impact due to unlikely presence of the species. Species is a resident of the Trans-Pecos region, including the Chisos, Davis, and Guadalupe mountain ranges, except during migration (TPWDa). Peregrine falcons prefer to nest on very tall sheer cliff faces with a commanding view, a nearby water source and a good prey base. The breeding population in Texas is located in the remote wild canyons of the Rio Grande up into pine-oak woodlands in the Big Bend and Guadalupe Mountains national parks (Arnold, 2001b).

(Table 8 continued)

Common Name	Scientific Name	Discussion
Bachman's Sparrow	*Aimophila aestivalis*	Low potential to negatively impact due to lack of suitable habitat and rarity of the species. In Texas, Bachman's Sparrow is most abundant in forests on the south side of the Angelina National Forest. These areas are managed for open longleaf pine (*Pinus palustris*) savannah that the red-cockaded woodpecker (*Picoides borealis*) frequents. Here, frequent prescribed burning maintains the preferred and historical grassy understory among the mature longleaf pines (Arnold, 2001a). East Texas appears to be the western most extent of this species range (Oberholser, 1974).
Bald Eagle	*Haliaeetus leucocephalus*	Bald Eagles breed in Texas from near sea level to about 1100 m (3600 ft); (Oberholser, 1974) in and around large aquatic environments (ocean coasts, reservoirs, large lakes and rivers, marshes and swamps). Reservoir construction has the potential to benefit this species by providing more habitat for hunting prey (i.e., lake/reservoir area).
Wood Stork	*Mycteria americana*	Low potential to negatively impact due to the migratory nature of this species. This species is primarily associated with coastal marshes, bays, prairies, and lakes. Current populations are composed of postbreeding transients, apparently from southern Mexico (Rappole and Blacklock, 1994). In Texas, there are only three known nesting records: 1930 in Chambers County, Elm Grove; 1960 in southwestern Jefferson County, Johnny Pipkin's Big Hill Ranch (about 50 breeding adults with nests, eggs, and chicks); and, year unknown in Harris County, San Jacinto River (Oberholser 1974). Reservoirs have potential to benefit this species by providing more habitat for hunting prey (i.e., lake/reservoir area).
Whooping Crane	*Grus americana*	Low to no potential to negatively impact due to the migratory nature of this species. Whooping cranes winter on the Aransas National Wildlife Refuge's 22,500 acres of salt flats and marshes. The area's coastal prairie rolls gently here and is dotted with swales and ponds. They summer and nest in poorly drained wetlands in Canada's Northwest Territories at Wood Buffalo National Park (TPWDf). Although unlikely, the reservoirs could provide stop-over/resting areas for migrating whooping cranes (i.e., Granger Lake).
Eskimo Curlew	*Numenius borealis*	Low to no potential to negatively impact due to rarity of the species and its migratory nature. This species has likely been extirpated. Last known specimen from Texas was from Cameron County in 1897 (Oberholser, 1974).

(Table 8 continued)

Common Name	Scientific Name	Discussion
Peregrine Falcon	*Falco peregrinus*	See description for *F. p. anatum.*
Piping Plover	*Charadrius melodus*	See previous description.
Least Tern	*Sterna antillarum*	See previous description.
Blackside Darter	*Percina maculate*	Low to no potential to negatively impact. This species occurs in small to medium rivers (Page and Burr 1991). In Texas, this species is restricted to the Red River basin in the northeast part of the state (Hubbs et al. 2008).
Creek Chubsucker	*Erimyzon oblongus*	Moderate potential to negatively impact due to the potential presence of this species and its non-migratory nature. Occurs in eastern Texas streams from the Red River southward to the San Jacinto Drainage; an early record exists from the Devils River (Hubbs et al. 1991). Please see further discussion at the end of this section.
Paddlefish	*Polyodon spathula*	Low to no potential to negatively impact this species as it is known to occur within reservoirs. Warren et al. (2000) listed the following drainage unit for distribution of paddlefish in Texas: Red River (from the mouth upstream to and including the Kiamichi River). Large reservoirs make good feeding areas, with paddlefish moving from reservoirs into flowing streams in the spring for spawning (Russell 1986). Reservoirs have the potential to benefit this species by providing more habitat.
Bluehead Shiner	*Pteronotropis hubbsi*	Low to no potential to negatively impact as this species is not likely to be present within the Sulphur River Basin. Apparently, this species has only been identified (in Texas) from Caddo Lake (Hubbs et al. 2008).
Blue Sucker	*Cycleptus elongates*	Low to no potential to negatively impact. This species inhabits large, deep rivers, and deeper zones of lakes (reservoirs; Cross 1967). Reservoirs have the potential to benefit this species by providing more habitat.
Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	No potential to negatively impact as this species is not present within the Sulphur River Basin. Found only in the Red River below Dennison Dam (Lake Texoma Reservoir; Hubbs et al. 2008); Red River system (Bonn and Kemp 1952).
Black Bear	*Ursus americanus*	Low to no potential to negatively impact due to lack of habitat and rarity of the species. This species is known to occur in the Chisos and Guadalupe Mountains of far west Texas. The Louisiana Black Bear (subspecies *U. a. luteolus*) is not known to be found in Texas, although potential habitat exists in the eastern part of the state (TPWDd).

(Table 8 continued)

Common Name	Scientific Name	Discussion
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	Low potential to negatively impact due to rarity of the species. Rafinesque's big-eared bat reaches the westernmost portion of its range in the pine forests of East Texas (TPWDe). No known county records of this species occur within the Sulphur River Basin watershed in Texas (Davis and Schmidly 1997).
Red Wolf	*Canis rufus*	No potential to impact. This species has been extirpated.
Louisiana Pigtoe	*Pleurobema riddellii*	Low to no potential to negatively impact as this species is not known to occur within the Sulphur River Basin. This species is known to occur in the Trinity, Neches, and Sabine River systems (Howells, et al. 1996). No museum collections or records of this species have been identified from the Sulphur River Basin (Winemiller and Lujan 2010.)
Southern Hickorynut	*Obovaria jacksoniana*	Low to no potential to negatively impact as this species is not likely to be present within the Sulphur River Basin. This species occurs in the Neches, Sabine, and Red River drainages of eastern Texas (Howells et al. 1996). No museum collections or records of this species have been identified from the Sulphur River Basin (Winemiller and Lujan 2010.)
Texas Pigtoe	*Macrochelys temminckii*	Low to no potential to negatively impact as this species is not likely to be present within the Sulphur River Basin. This species has been reported from the Brazos, Neches, Sabine, and San Jacinto rivers (Howells et al. 1996). No museum collections or records of this species have been identified from the Sulphur River Basin (Winemiller and Lujan 2010.)
Alligator Snapping Turtle	*Macrochelys temminckii*	No potential to negatively impact. Alligator snapping turtles are aquatic bottom dwellers. They have been found in a variety of environs including lakes, oxbows, bayous, deep rivers, canals, creeks, ponds and even brackish estuaries (http://www.texasturtles.org/index. html). Reservoirs have the potential to benefit this species by providing more habitat.
Northern Scarlet Snake	*Cemophora coccinea copei*	Moderate potential to negatively impact due to potential presence of this species and its non-migratory nature. Please see further discussion at the end of this section.

(Table 8 continued)

Common Name	Scientific Name	Discussion
Texas Horned Lizard	*Phrynosoma cornutum*	Low to no potential to negatively impact as this species is not likely to be present within the Sulphur River Basin. Apparently, they no longer occur in Texas east of an imaginary line from Fort Worth to Corpus Christi (Donaldson et al. 1994), except for small, isolated populations.
Timber/Canebrake Rattlesnake	*Crotalus horridus*	Moderate potential to negatively impact due to potential presence of this species and its non-migratory nature. Please see further discussion at the end of this section.

Table 3: Summary of Potential Impacts to State and Federally Listed Threatened/Endangered Species Associated with each Alternative Reservoir Site

ALTERNATIVE RESERVOIR SITES	Wright Patman (237.5)	Wright Patman (259.5)	Marvin Nichols 1A	Talco	Parkhouse I	Parkhouse II	Jim Chapman (446.2)
FEDERAL SPECIES							
American Burying Beetle	○	○	○	NL	NL	○	NL
Least Tern	○	○	○	○	○	○	○
Piping Plover	NL	NL	○	NL	○	○	○
STATE SPECIES							
American Peregrine Falcon	○	○	○	○	○	○	○
Bachman's Sparrow	○	○	○	○	○	○	○
Bald Eagle	○	○	○	○	○	○	○
Wood Stork	○	○	○	○	○	○	○
Whooping Crane	NL	NL	○	○	○	○	○
Eskimo Curlew	NL	NL	NL	NL	NL	○	NL
Peregrine Falcon	○	○	○	○	○	○	○
Piping Plover	○	○	○	○	○	○	○
Least Tern	○	○	○	○	○	○	○
Blackside Darter	○	○	○	○	○	○	○
Creek Chubsucker	◑	◑	◑	◑	◑	◑	◑
Paddlefish	○	○	○	○	○	○	○
Bluehead Shiner	○	○	NL	NL	NL	NL	NL
Blue Sucker	NL	NL	NL	NL	NL	○	NL

(Table 9 continued)

ALTERNATIVE RESERVOIR SITES	Wright Patman (237.5)	Wright Patman (259.5)	Marvin Nichols 1A	Talco	Parkhouse I	Parkhouse II	Jim Chapman (446.2)
Shovelnose Sturgeon	○	○	○	NL	NL	○	NL
Black Bear	○	○	○	○	○	○	○
Rafinesque's Big-eared Bat	○	○	○	NL	NL	NL	NL
Red Wolf	○	○	○	○	○	○	○
Louisiana Pigtoe	○	○	○	○	○	NL	○
Southern Hickorynut	○	○	○	○	NL	NL	NL
Texas Pigtoe	○	○	○	○	NL	NL	NL
Alligator Snapping Turtle	○	○	○	○	○	○	○
Northern Scarlet Snake	◑	◑	◑	◑	NL	NL	NL
Texas Horned Lizard	○	○	○	○	○	○	○
Timber Rattlesnake	◑	◑	◑	◑	◑	◑	◑

NL – Species is not listed within the counties of the alternative reservoir site. ○ - Alternative reservoir site has low or no potential to negatively impact. ◑ - Alternative reservoir site has moderate potential to negatively impact. ● - Alternative reservoir site has high potential to negatively impact.

REFERENCES

Arnold, K. A. (2001a). Bachman's Sparrow. The Texas Breeding Bird Atlas. Texas A&M University System, College Station and Corpus Christi, TX. http://txtbba.tamu.edu (12 July 2001).

Arnold, K. A. (2001b). Peregrine Falcon. The Texas Breeding Bird Atlas. Texas A&M University System, College Station and Corpus Christi, TX. http://txtbba.tamu.edu (12 July 2001).

Bauer, Kendra K. 2010. Past, Present and Future Status of the Endangered American Burying Beetle (Nicrophorus americanus) in Texas. The University of Texas at Austin.

Bonn, E.W., and R.J. Kemp. 1952. Additional records of fresh-water fishes from Texas. Copeia 1952(3):204-205.

Bousman, C.B., Collins, M. B., and Perttula, T.K. (1988) *Quaternary geomorphology at Cooper Basin: A framework for archaeological inquiry, Delta and Hopkins Counties, TX,* Prewitt and Associates, Inc., Reports of Investigations 55

Chipman, D.E. (1987) *In Search of Cabeza de Vaca's Route Across Texas: An Historiographical Survey,* Southwestern Historical Quarterly *91*

Cross, F.B. 1967. Handbook of Fishes of Kansas. University of Kansas Museum of Natural History Misc. Publ. No. 45, Lawrence. 357 pp.

Darwin, R.L., Ferring, C.R., and Ellwood, B.B. (1990) *Geoelectric Stratigraphy and Subsurface Evaluation of Quaternary Stream Sediments at the Cooper Basin, NE Texas,* Geoarchaeology vol. 5, no. 1, p. 53-79

Davis, William B. and Schmidly, David J. 1997. The Mammals of Texas - Online Edition. http://www.nsrl.ttu.edu/tmot1/Default.htm.

Donaldson, W., A. H. Price, and J. Morse. 1994. The current status and future prospects of the Texas horned lizard (Phrynosoma cornutum) in Texas. Texas Journal of Science 46:97-113.

EPA, 2012. http://water.epa.gov/type/wetlands/bottomland.cfm

EPA. (http://water.epa.gov/type/rsl/monitoring/vms56.cfm).

Ferring, C.R. (1995) *Middle Holocene environments, geology, and archaeology in the Southern Plains,* in Bettis E.A. III, ed. *Archaeological Geology of the Archaic Period in North America: Boulder, Co,* Geological Society of America Special Paper 297

Fields, R.C, Blake, M.E. and Kibler, K.W. (1997) *Synthesis of the Prehistoric and Historic Archaeology of Cooper Lake, Delta and Hopkins Counties, Texas,* USACE Reports of Investigations, No 104

Hodges, J.D., 1997, Development and ecology of bottomland hardwood sites: Forest Ecology and Management, v. 90, p. 117–125.

http://www.texasturtles.org/index.html

Hubbs, C. L., R.J. Edwards and G.P. Garret. 1991. An annotated checklist of freshwater fishes of Texas, with key to identification of species. Texas Journal of Science, Supplement 43(4):1-56.

Hubbs, C., R.J. Edwards, and G.P. Garrett. 2008. An annotated checklist of the freshwater fishes of Texas, with keys to identification of species. Texas Journal of Science, Supplement, 2nd edition 43(4):1-87.

Hunt, S.M. and Cliff, M.B. (1998) *Cultural Resources Survey of 245 Acres at the White Oak Creek Wildlife Management Area, Cass, Morris, and Titus Counties, Texas,* USACE Reports of Investigations, No 153

Journey, D. H., Bohlin, J. Linder Linsley, S.E., Caran, S.C., and Pedler, D. R. (1989) *Archaeological Survey of Cooper Lake, Delivery Order Number 7, 1989*, USACE Contract No. DACW63-87-D-0017

Mehrer, M.W., and Wescott, K.L eds. (2006) *GIS and Archaeological Site Location Modeling*, CRC Press Boca Raton, FL

Page, L.M., and B.M. Burr. 1991. A field guide to freshwater fishes of North America north of Mexico. Houghton Mifflin Company, Boston, Massachusetts. 432 pp.

Perttula, T.K. (2004) *The Prehistory of Texas,* Texas A&M University Press, College Station, TX

Russell, T.R. 1986. Biology and life history of the paddlefish - a review, pp. 2-20. In: The paddlefish: status, management and propagation. J. G. Dillard, L. K. Graham, and T. R. Russell, eds. Spec. Publ., no. 7, North Central Division, American Fisheries Society, Columbia, Missouri.

Skinner, A., Bousman, B., Plumb, N., Wilson, A., Todd, J., and Jennings, T. (2005) *Archaeology and Quaternary Geology at Lake Ralph Hall, Fannin County, Texas*, AR Consulting Technical Report

TCEQ, 2011. Sulphur River basin Clean Rivers Program Highlights Report FY 2011

TNRCC (1999)

TPWDa. http://www.tpwd.state.tx.us/huntwild/wild/species/amperegrine/

TPWDb. http://www.tpwd.state.tx.us/huntwild/wild/species/leasttern/

TPWDc. http://www.tpwd.state.tx.us/huntwild/wild/species/piplover/

TPWDd. http://www.tpwd.state.tx.us/huntwild/wild/species/blackbear/

TPWDe. http://www.tpwd.state.tx.us/huntwild/wild/species/rafinesque/

TPWDf. http://www.tpwd.state.tx.us/huntwild/wild/species/whooper/

USDA. (http://www.usawaterquality.org/volunteer/ecoli/june2008manual/chpt2_ecoli.pdf).

Utah State University Cooperative Extension. (http://extension.usu.edu/waterquality/htm/whats-in-your-water/ph).

Wall, B.R. Jr. and C.R. Gilbert. 1980. Erimyzon oblongus (Mitchill), Creek Chubsucker.pp.397 in D.S. Lee et al. Atlas of North American Freshwater Fishes. N.C. State Mus. Nat. Hist., Raleigh, i-r+854 pp.

Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross, and W.C. Starnes. 2000. Diversity, Distribution, and Conservation status of the native freshwater fishes of the southern United States. Fisheries 25(10):7-29.

Winemiller, K. and Lujan, Nathan K. 2010. Status of Freshwater Mussels in Texas. Institute of Renewable Natural Resources, Texas A&M System.

FREESE AND NICHOLS

Innovative approaches
Practical results
Outstanding service

Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on Agricultural and Natural Resources with the Top of Conservation Storage at 313.5 Feet above Mean Sea Level

Prepared for:

Region C Water Planning Group

For Submittal to:

Texas Water Development Board

Prepared by:

Freese and Nichols, Inc.
4055 International Plaza, Suite 200
Fort Worth, Texas 76109
817-735-7300

NTD11336

Table of Contents

List of Appendices

List of Figures

List of Tables

Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on Agricultural and Natural Resources with the Top of Conservation Storage at 313.5 Feet above Mean Sea Level

1. Introduction

The requirement for quantification of impacts on agricultural and natural resources is in Texas Water Development Board (the Board) rules, reflected in Texas Administrative Code §§357.34(d)(3)(B) and 357.34(d)(3)(C):

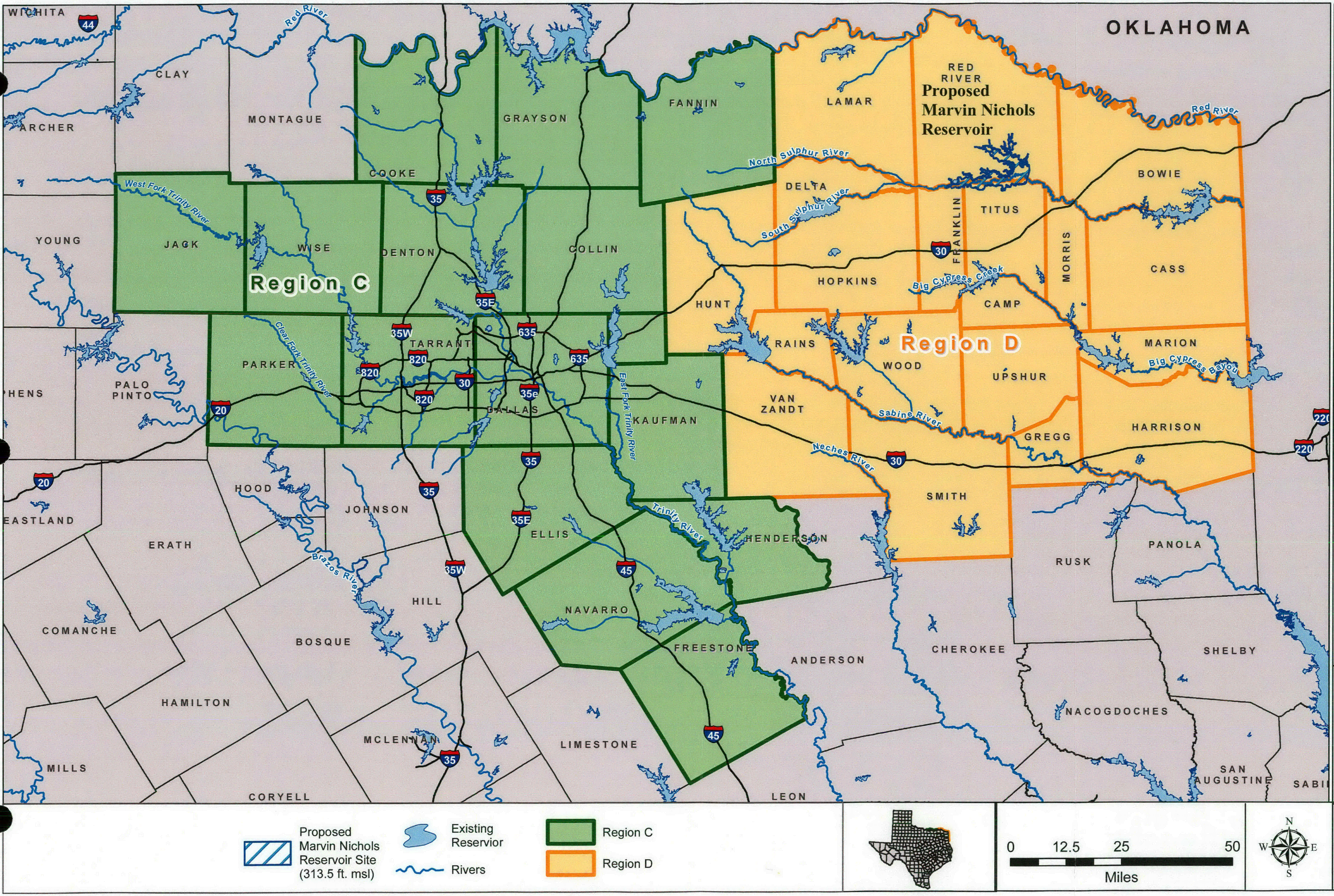
> "357.34(d) Evaluations of potentially feasible water management strategies shall include the following analyses:... (3) A quantitative reporting of:
> ...
> (B) Environmental factors including effects on environmental water needs, wildlife habitat, cultural resources, and effect of upstream development on bays, estuaries, and arms of the Gulf of Mexico. Evaluations of effects on environmental flows will include consideration of the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water). If environmental flow standards have not been established, then environmental information from existing site-specific studies, or in the absence of such information, state environmental planning criteria adopted by the Board for inclusion in the state water plan after coordinating with staff of the Commission and the Texas Parks and Wildlife Department to ensure that water management strategies are adjusted to provide for environmental water needs including instream flows and bays and estuaries inflows.
> (C) Impacts to agricultural resources."

The information in this report is intended to supplement the *2016 Region C Water Plan* [1] on the impact of the Marvin Nichols Reservoir with the top of conservation storage at 313.5 feet above mean sea level (313.5 feet-msl), with emphasis on the quantification of impacts on agricultural and natural resources. The recommended water management strategy in the *2016 Region C Water Plan* [1], referred to as the Sulphur Basin Supplies, includes the construction of Marvin Nichols reservoir at conservation pool elevation 313.5 feet-msl and the reallocation of Wright Patman to elevation 232.5 feet-msl. The Wright Patman portion of the Sulphur Basin Supplies

[1] Superscripted numbers refer to the list of references in Appendix A.

strategy is not analyzed in this report. That analysis is contained in the *2016 Region C Water Plan* [1]. The location of the proposed Marvin Nichols Reservoir is shown in Figure 1.

Section 2 of this report provides the analysis and quantification of the impacts of Marvin Nichols Reservoir on natural resources. Section 3 provides the analysis and quantification of the impacts of the project on agricultural resources. Section 4 discusses potential mitigation requirements for the project and how they might affect impacts on natural and agricultural resources. The Appendices include supporting material.



FN PROJECT NO. NTD11336

DATE CREATED 8/13/2015

DATUM & COORDINATE SYSTEM NAD83 State Plane (feet) Texas North Central

FILE NAME Figure2

PREPARED BY JLA

REGION C WATER PLANNING GROUP

MARVIN NICHOLS QUANTITATIVE ANALYSIS REPORT

LOCATION MAP FOR REGION C, REGION D, AND THE PROPOSED MARVIN NICHOLS RESERVOIR

FREESE NICHOLS

4500 International Plaza Suite 200
Fort Worth, Texas 76109-4895
(817) 735-7300

Figure 1

2. Analysis and Quantification of the Impacts on Natural Resources

2.1 Requirements of Texas Water Code and Texas Water Development Board Rules

The requirements for quantitative reporting on the impacts of water management strategies on natural resources are included in the Board rules in Texas Administrative Code §357. Specifically §357.34(d)(3)(B), requires that the quantitative reporting address impacts on certain specific aspects of natural resources including:

- Environmental water needs
- Wildlife habitat
- Cultural resources
- Effect on bays, estuaries, and arms of the Gulf of Mexico

A quantitative reporting of impacts on each of these areas is provided below, as is additional information on impacts on threatened and endangered species.

2.2 Available Data for Impacts on Natural Resources

Data on impacts of the proposed Marvin Nichols Reservoir on environmental flow needs is taken from the hydrologic analyses of the reservoir conducted for the *2016 Region C Water Plan.*[1] Data on impacts on other natural resources is taken from the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[2] The environmental evaluation is a recent report developed for the U.S. Army Corps of Engineers as part of an on-going basin-wide assessment of the Sulphur River Basin. It was completed in June 2013. The report includes environmental analyses of Marvin Nichols Reservoir and other potential water supply projects in the Sulphur Basin at numerous conservation storage elevations.

2.3 Impacts on Environmental Water Needs

Texas Administrative Code §357.34(d)(3)(B) includes specific requirements for the evaluation of environmental water needs:

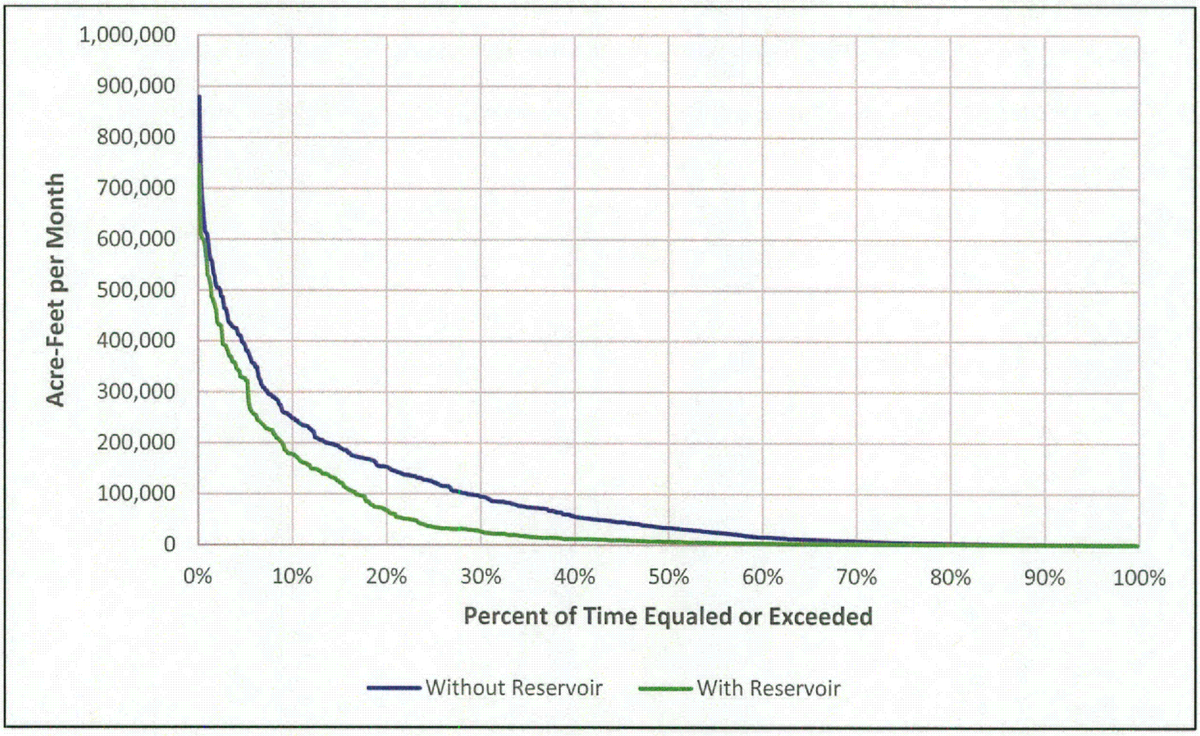
> "Evaluations of effects on environmental flows will include consideration of the Commission's adopted environmental flow standards under 30 TAC Chapter 298 (relating to Environmental Flow Standards for Surface Water). If environmental flow standards have not been established, then environmental information from existing site-specific studies, or in the absence of such information, state environmental planning criteria adopted by the Board for inclusion in the state water plan after coordinating with staff of the Commission and the Texas Parks and Wildlife Department to ensure that water management strategies are adjusted to provide for environmental water needs including instream flows and bays and estuaries inflows."

The Texas Commission on Environmental Quality (TCEQ) has not yet adopted environmental flow standards under 30 TAC Chapter 298 for the Sulphur Basin, and environmental instream flow information from existing site-specific studies is not available for the proposed Marvin Nichols Reservoir. As required by TWDB rules, the operation of the proposed reservoir was evaluated using state environmental planning criteria adopted by the Board for inclusion in the state water plan. Table 1 and Figure 2 summarize the flow-frequency relationship for the Sulphur River immediately below the proposed Marvin Nichols Reservoir with and without the reservoir. It is likely that the detailed studies required for reservoir permitting will result in different streamflow bypass requirements and different impacts on downstream flows. The results in Table 1 and Figure 2 reflect current TWDB requirements.

Table 1
Monthly Flow-Frequency Relationship with and without Marvin Nichols Reservoir

% of Months Flow is Exceeded	Flow in CFS	
	Without Marvin Nichols	With Marvin Nichols
5%	390,034	325,886
10%	249,152	178,350
20%	153,067	68,230
30%	94,801	26,716
40%	55,302	11,994
50%	33,526	6,387
60%	15,178	3,215
70%	7,489	1,562
80%	2,850	1,011
90%	900	327
95%	444	123

Figure 2
Flow-Frequency Relationship of Sulphur River at Marvin Nichols Dam Site with and without the Reservoir



2.4 Impacts on Wildlife Habitat

The primary impact of the proposed Marvin Nichols Reservoir on wildlife habitat would be the inundation of habitat by the reservoir. This impact was evaluated as part of the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment,*[2] prepared for the U.S. Army Corps of Engineers as part of an on-going basin-wide assessment of the Sulphur River Basin. The *Environmental Evaluation Interim Report* used the existing Texas Parks and Wildlife Ecological Systems Classification data set, which was developed by analysis of color infra-red and multi-spectral satellite imagery. The data set was considered to be the most recent, readily available data on land cover types in the Sulphur River Basin. The cover types determined from the Ecological Systems Data set were grouped into larger categories based on EPA's Level One National Land Cover Data classifications. U.S. Fish and Wildlife Service National Wetlands Inventory data were used to further refine the classifications. The approach used in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[2] is described in greater detail in Sections 2.1 and 2.2 of that report.

Table 2 shows the acreage of each cover type within the footprint of the proposed Marvin Nichols Reservoir. For comparison, the area of each cover type in all of Region D is also included. (Cover areas in Region D were developed for this study using the database developed in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment.*[2])

Table 2
Quantitative Reporting on Impacts on Wildlife Habitat

Cover Type	Area (Acres)		Marvin Nichols Reservoir Area as a Percent of Region D
	Marvin Nichols Reservoir	Region D	
Barren	<1	8,437	0.0%
Bottomland Hardwood Forest	6,894	417,265	1.7%
Forested Wetland	17,697	414,573	4.3%
Grassland/Oilfield	9,767	2,843,656	0.3%
Herbaceous Wetland	931	32,011	2.9%
Open Water	139	211,761	0.1%
Row Crops	408	314,184	0.1%
Shrub/Wetland	1,271	16,445	7.7%
Shrubland	232	47,485	0.5%
Upland Forest	4,342	2,869,079	0.2%
Urban	40	158,878	0.0%
Total	**41,722**	**7,333,774**	**0.6%**

Table 2 presents the impact of the proposed Marvin Nichols Reservoir on wildlife habitat in terms of the acreage of different types of habitat inundated by the reservoir. The reservoir will affect 4.3 percent of the forested wetlands, 1.7 percent of the bottomland hardwood forests, and 0.2 percent of the upland forests in Region D. Bottomland hardwood forests and forested wetlands are often lumped together and referred to as "bottomland hardwoods", and they are considered to be particularly important as wildlife habitat. The total of these two land types in the proposed Marvin Nichols Reservoir (24,591 acres) represents 3.0 percent of the total of those two land types in all of Region D (831,838 acres). The 24,591 acres of bottomland hardwoods that would be inundated by the proposed reservoir represents about 0.4 percent of the estimated 5,973,000 acres[3] of all bottomland hardwoods in Texas. As a part of permitting for the project, there will be more detailed assessments of the quality of the wildlife habitat that would be affected by the project, which will aid in the development of mitigation plans.

2.5 Impacts on Cultural Resources

The impacts of Marvin Nichols Reservoir on cultural resources would result from the inundation of cultural resource sites. The *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[2] collected the following data on potential cultural resource impacts from Marvin Nichols Reservoir site and other proposed reservoir sites in the Sulphur River Basin:

- Number of known cultural resources
- Presence of known human remains/burials
- Acres of zones of archaeological potential
- Percentage of reservoir footprint with previous cultural resource surveys
- Surveyed site density

Table 3 is a quantitative reporting of known cultural resources in the Marvin Nichols Reservoir footprint. Table 4 is a quantitative reporting of other measures of potential impacts on cultural resources. The data in both tables is taken from *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[2].

Table 3
Quantitative Reporting of Impacts on Cultural Resources – Known Cultural Resources

Likely Eligibility of Sites for the National Register of Historic Properties (NRHP)	Historic	Pre-historic	Caddo	Multi-Component	Prehistoric Multi-Component	Total
Likely Eligible	0	10	5	0	1	16
Possibly Eligible - Fair Chance	0	1	2	0	0	3
Possibly Eligible - Poor Chance	0	3	1	0	0	4
Not Likely Eligible	0	12	1	2	0	15

Table 4
Quantitative Reporting of Impacts on Cultural Resources – Other Factors

Measurement of Impact on Cultural Resources	Value for Measurement
Ratio of High Value Sites to Low Value Sites	1
Number of Known Cemeteries	1 (57 graves)
Acres with High Potential for Archaeological Sites	32,345
Percentage of Project Area Previously Surveyed for Cultural Resources	2.0%
Number of Acres Surveyed per Site Found in Survey	90.1

In general, impacts on cultural resources are mitigated through coordination with the Corps of Engineers and the Texas State Historical Commission during permitting. Coordination with Indian tribes on archeological issues would also be a part of the permitting process. Mitigation is accomplished by investigating and recording archaeological sites and proper relocation of cemeteries. This process of archaeological mitigation adds to project costs, and it has been considered in costs developed for the proposed Marvin Nichols Reservoir.

2.6 Impacts on Bays, Estuaries and Arms of the Gulf of Mexico

The proposed Marvin Nichols Reservoir would generally reduce flows discharging to bays, estuaries and arms of the Gulf of Mexico. The Sulphur River, on which the Marvin Nichols Reservoir would be located, is a tributary of the Red River, which does not flow to any bay, estuary or arm of the Gulf of Mexico in Texas. According to the U.S. Geological Survey, the Red River discharges to the Atchafalaya River, which flows to the Gulf of Mexico in Lousiana[4,5]. Natural discharges from the Atchafalaya to the Gulf of Mexico average 58,000 cubic feet per second, or 42 million acre-feet per year[4,5]. In addition, human diversions of flood flows from the Mississippi River to the Atchafalaya River add about 167,000 cfs, or 121 million acre-feet per year, to the discharge of the Atchafalaya[4,5], making a total discharge of 163 million acre-feet per year.

Assuming full use of Marvin Nichols Reservoir and no return flows, the project would reduce flows by about 425,000 acre-feet per year. This would reduce the discharge from the

Atchafalaya River to the Gulf of Mexico in Louisiana by about 0.3%. It should be noted that reducing the discharge from the Atchafalaya is moving toward natural conditions, offsetting a very small part of the flows added to the Atchafalaya by human diversion from the Mississippi River. The impact of Marvin Nichols Reservoir on bays, estuaries and arms of the Gulf of Mexico would be negligible.

2.7 Impacts on Threatened and Endangered Species

The Texas Water Development Board rules do not require reporting on potential impacts to threatened and endangered species. However, data on potential impacts to endangered and threatened species are available in the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[2] and are presented here. The U.S. Fish and Wildlife Service maintains lists of federally endangered and threatened species by county. The Texas Parks and Wildlife Department maintains a separate Texas, or State, list of endangered and threatened species by county. Table 5 summarizes State and Federally listed threatened and endangered species in the counties in which Marvin Nichols Reservoir would be located. Chapter 3 of the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*[2] presents additional information on the development of the data in Table 5.

Of the Federally listed species, there are three potential species that are listed in the counties where Marvin Nichols would be located, but none of these species are expected to be impacted by the reservoir. There are a total of 20 threatened or endangered State-listed species within these counties, but only three threatened species have moderate potential to be impacted by the reservoir, and none have high potential. Because there are three State-listed threatened species potentially present in the counties in which Marvin Nichols Reservoir would be located, additional studies may be required to assess the impact on these species, if any, as reservoir development continues.

Table 5
Quantitative Reporting of Potential Impacts on Endangered and Threatened Species

Classification of Endangered and Threatened Species	Potential for Impact Due to Marvin Nichols Reservoir	Number Present in Counties Where Marvin Nichols Reservoir Would be Located
Federal Endangered Species	No Potential to Low Potential	2
	Moderate Potential	0
	High Potential	0
Federal Threatened Species	No Potential to Low Potential	1
	Moderate Potential	0
	High Potential	0
Texas Endangered Species	No Potential to Low Potential	2
	Moderate Potential	0
	High Potential	0
Texas Threatened Species	No Potential to Low Potential	15
	Moderate Potential	3
	High Potential	0

According to the *Environmental Evaluation Interim Report – Sulphur River Basin – Comparative Assessment*, "The Texas Endangered Species Act does not protect wildlife species from indirect or incidental take (e.g., destruction of habitat, unfavorable management practices, etc.). The TPWD has a Memorandum of Understanding with every state agency to conduct a thorough environmental review of state initiated and funded projects, such as highways, reservoirs, land acquisition, and building construction, to determine their potential impact on state endangered or threatened species." [2]

3. Analysis and Quantification of the Impacts on Agricultural Resources

3.1 Requirements of Texas Water Code and Texas Water Development Board Rules

The requirements for quantitative reporting on the impacts of water management strategies on agricultural resources are included in the Board rules in Texas Administrative Code §357. Specifically, §357.34(d)(3)(C) requires that the quantitative reporting address impacts on agricultural resources. The rules do not include any more detailed description of what quantitative reporting is required. To respond to this requirement, this report provides the following quantitative reporting on the impacts of the proposed Marvin Nichols Reservoir on agricultural resources:

- Inundation of land potentially useful as agricultural resources
- Impacts on timberland and timber harvests
- Inundation of prime farmlands

3.2 Available Data for Impacts on Agricultural Resources

Data on impacts to land cover types potentially useful as agricultural resources is based on a land classification schema developed for the as yet unpublished draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7]. Details on the methodologies used to estimate the impacts can be found in that report. The land classification schema was based on county appraisal district information and is comprised of the following categories:

- Hardwood,
- Mined pine and hardwood,
- Pine,
- Rangeland,
- Tilled cropland (irrigated cropland),
- Wildlife reserve, and
- Waste ("unusable" land)

Several of the categories were further divided based on merchantable value, but those subcategories were not used to summarize the data and are not described here.

3.3 Impacts Due to Inundation of Land Potentially Useful as Agricultural Resources

The development of land cover type information for the proposed Marvin Nichols Reservoir is discussed in Section 2.4. However, the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7] develops different land classifications than those discussed in Section 2.4. Because that study specifically assesses impacts on timberland and agricultural land, the impacts as determined using the land classifications in that study are reported here. Table 6 includes information on the area of these land cover types that would be inundated by the Marvin Nichols Reservoir as reported in the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7].

Table 6
Quantitative Reporting on Impacts on Agricultural Resources - Land Potentially Useful for Agriculture (in Acres)

County	Impacted Area	Forest	Range/Crop	WPA – Range	WPA – Forest	Waste
Red River	**29,675.50**	18,369.28	11,306.22	0.00	0.00	0.00
Titus	**10,004.36**	5,134.62	1,321.54	445.23	3,019.39	83.57
Franklin	**1,628.22**	1,565.62	62.60	0.00	0.00	0.00
Total	**41,308.07**	25,069.51	12,690.37	445.23	3,019.39	83.57

Notes:
The total Impacted Area in this table differs from the total project area in Table 2 by 0.75 percent because of slight differences in the sources of the geospatial data used to calculate acreages of land type.
WPA = Wetland Preservation Area

The most significant impacts to agricultural resources in the project area are on resources that could potentially be useful to the silviculture industry. These impacts are discussed further (in terms of impacts on timberland and timber sales) in Section 3.4 below.

Table 7 is a summary of the estimated total value of timber and agricultural resources impacted by Marvin Nichols. The values are from the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7]. Per the aforementioned report, the timber values are based on "stumpage" ($ per ton) and estimated volume (density) in tons per acre. The estimated values are based on the assumption that the timber is prudently managed for sale using conventional management practices as exercised by knowledgeable timberland owners. The broad assumption was that all timber is considered "in the market" and that it could be harvested under normal conditions using usual and customary practices. No adjustments were made for minimum merchantable harvest acreage, accessibility, timber market fluctuations, and the amount of affected timber considered "in the market".

Per the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7], the valuation of agricultural land impacts are based on the "lease value" approach typically used by all county appraisal districts. The lease values used for estimating values for areas of impacted agricultural lands was based on selections from the publication "Texas Rural Land Value Trends 2013" (referenced in the Timberland and Agricultural Assessment [7]) as published by the Texas Chapter of the American Society of Farm Managers and Rural Appraisers, Inc. There being no readily available guidance or methodology for this type of valuation, the method used was to estimate economic impact based on three times the selected rental /lease value (equivalent to three years of rental/lease).

Table 7
Total Estimated Market Impact of Marvin Nichols Reservoir on Agricultural Resources

County	Total	Timberland	Range/Crop	WPA – Range	WPA – Timber
Red River	**$12,122,136**	$11,594,247	$527,888	$0	$0
Titus	**$4,272,083**	$2,751,878	$128,089	$33,392	$1,358,724
Franklin	**$1,522,086**	$1,512,564	$9,522	$0	$0
Total	**$17,916,305**	**$15,858,689**	**$665,499**	**$33,392**	**$1,358,724**

Notes: WPA = Wetland Preservation Area

3.4 Impacts on Timberland and Timber Harvests

Agricultural use of the land that would be inundated by the proposed Marvin Nichols Reservoir includes the production of timber. Information on land classified as timberland (hardwood, pine, and mixed pine/hardwood) that would be inundated by the proposed reservoir was based on data presented in the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7] prepared for the Sulphur River Basin Authority. The footprint of the proposed Marvin Nichols Reservoir is located in Red River, Titus and Franklin Counties. The proposed Marvin Nichols Reservoir will inundate about 25,000 acres of timberland (Table 8). Table 8 provides data on timberland in Marvin Nichols Reservoir as determined in the draft *Timberland and Agricultural Land Impact Assessment for Selected Water Resource Options in the Sulphur River Basin* [7]. It is important to recognize that this study [7] made no assessment of how much of this timberland was already in production or could feasibly be put into production. Many factors affect the feasibility of timberland for production, including but not limited to accessibility, quality of timber, drought conditions, distance from milling facilities, and overall profitability.

Table 8
Timberland in Marvin Nichols Reservoir (in Acres)

Class	Red River	Titus	Franklin	Total
Hardwood	16,399.74	4,282.50	1,565.62	22,247.85
Mixed (Pine and Hardwood)	1,965.06	693.24	0.00	2,658.30
Pine	4.48	158.88	0.00	163.36
Total	**18,369.28**	**5,134.62**	**1,565.62**	**25,069.51**

It should also be noted that the approximately 22,200 acres of hardwood and approximately 2,700 acres of mixed timberland (which includes hardwood) presented in Table 8 above represent much of the 24,591 acres of land called out as "bottomland hardwoods" discussed in Section 2.4 - Impacts on Wildlife Habitat. The inundation of this bottomland hardwoods area with the construction of Marvin Nichols will impact the wildlife habitat, but if the land is not inundated and instead harvested as timberland, there would also be impacts to the wildlife habitat. In other words, the impacts to the wildlife habitat exist if Marvin Nichols is constructed, but also exist, to some degree, if Marvin Nichols is not constructed and the timberland is harvested.

3.5 Impacts Due to Inundation of Prime Farmland

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) maintains data on prime farmland, which is defined as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses.[6]" Prime farmland is not necessarily currently in agricultural use, but it must be available for agricultural use. For example, prime farmland soils underlying an urban area would not be counted as prime farmland because they are not available for agricultural use. Table 9 shows the acreage of prime farmland that would be inundated by the proposed Marvin Nichols Reservoir compared to prime farmland area in Region D and Texas. Marvin Nichols Reservoir would inundate 0.18 percent of the prime farmland in Region D and 0.01 percent of the prime farmland in Texas.

Table 9
Quantitative Reporting on Impacts on Agricultural Resources – Prime Farmland

Cover Type	Area (Acres)			Marvin Nichols Reservoir Area as a Percent of Area in:	
	Marvin Nichols Reservoir	Region D	Texas	Region D	Texas
Prime Farmland	3,445	1,949,929	35,087,200	0.18%	0.01%

4. Mitigation and the Effect of Mitigation on Impacts to Natural and Agricultural Resources

Developers of a new reservoir project are often required to provide mitigation for the impacts on natural resources in the form of land set aside, protected from development, and managed to enhance ecological value. Mitigation is generally only required for specific types of resources that would be impacted such as waters of the U.S. and the state, including wetlands. The developer of a project gets mitigation credit for improving the environmental functions of the land used for mitigation. The usual approach is to purchase degraded areas with limited environmental value and improve them through restoration, enhancement and careful management to achieve desired compensatory results at minimum cost.

Table 10 gives information on historical mitigation requirements for Texas reservoirs. Two additional reservoirs, Lower Bois d'Arc Creek Reservoir and Lake Ralph Hall, are currently in the permitting process, and mitigation requirements have not yet been finalized. Significant land has been acquired for mitigation for Lower Bois d'Arc Creek Reservoir, and the transaction was on a willing buyer-willing seller basis, with no condemnation of land.

Mitigation offsets the impacts of a project on natural resources by improving the ecological functions of other land. Mitigation would be expected to offset the impacts of the proposed Marvin Nichols Reservoir on natural resources. On the other hand, mitigation to protect natural resources may increase the impact on agricultural resources if the land acquired for mitigation is currently in agricultural use. (Because of the management of mitigation land to enhance ecological values, farming is unlikely to be allowed. Other agricultural uses, like timbering, would probably also be impossible or face significant controls and restrictions.)

Mitigation requirements for new reservoirs are generally determined during the permitting process, and the requirements for the proposed Marvin Nichols Reservoir are not yet known. Estimates of mitigation requirements have been developed as part of cost estimates for the project.[8] The mitigation acreage required is estimated as twice the acreage of waters of the United States, other than non-stream open waters, that are impacted by the project. For the proposed Marvin Nichols Reservoir, the acreage of potential waters of the U.S., other than non-stream open waters, was estimated to be approximately 20,000 acres. The mitigation requirement is estimated to be twice that amount, or approximately 40,000 acres. This is consistent with historical mitigation requirements for reservoirs in Texas. In the case of Marvin Nichols Reservoir, the land acquired for mitigation would probably include a large percentage of forested wetlands, which makes up most of the acreage of waters of the U.S. that would be affected by the reservoir. It should be emphasized that this is only an estimate. Actual mitigation requirements and location will be developed as permitting for the proposed reservoir proceeds. As discussed above, mitigation is intended to offset impacts on natural resources but may increase impacts to agricultural resources.

Table 10
Mitigation Requirements for Texas Reservoirs

Project	Date Impounded	Conservation Pool Area (Acres)	Required Mitigation Area (Acres)	Mitigation Ratio	Comments
Alan Henry	1993	2,884	3,000	1.04 to 1	Mitigation Downstream
Applewhite	Not completed (permitted in 1989)	2,500	2,500	1.0 to 1	Planned mitigation downstream
Chapman	1991	19,200	35,500	1.85 to 1	Mitigation next to reservoir and downstream
Gilmer	1997	1,010	1,557	1.54 to 1	
Joe Pool	1986	7,470	0	None	
Mitchell County	1993	1,463	0	None	
O.H. Ivie	1990	19,149	5,990	0.31 to 1	Mitgation next to reservoir
Palo Duro	1989	2,413	0	None	
Ray Roberts	1986	29,350	0	None	
Richland-Chambers	1987	44,752	13,700	0.31 to 1	Mitigation Downstream

Appendix A

List of References

List of References

1. Freese and Nichols, Inc., Alan Plummer Associates, Inc., CP&Y, Inc., and Cooksey Communications, Inc. *2016 Region C Water Plan*. November 2015.
2. Freese and Nichols, Inc. *Environmental Evaluation Interim Report - Sulphur River Basin - Comparative Assessment.* 2013.
3. Texas Parks and Wildlife Department: *Texas Wetlands Conservation Plan*, Austin, 1997.
4. U.S. Geological Survey: Open-File Report 87-242, *Water Fact Sheet – Largest Rivers in the United States*, Washington D.C., May 1990.
5. U.S. Census Bureau: *Statistical Abstract of the United States: 2012*, Table 365, Washington, D.C.
6. U.S. Department of Agriculture Natural Resources Conservation Service and Iowa State University Center for Survey Statistics and Methodology: Summary Report: 2010 National Resources Inventory, September 2013. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1167354.pdf
7. Sulphur Basin Group, PLLC. *Draft Timberland and Agricultural Land Impact Assessment For Selected Water Resource Options in the Sulphur River Basin.* 2015 (unpublished).
8. Freese and Nichols, Inc., and MTG Engineers and Surveyors. *Sulphur River Basin Feasibility Study - Cost Rollup Report*. Rep. N.p.: Sulphur Basin Group, n.d. Print.

Appendix Z

Appendix Z

Documents Related to the 2016 Interregional Conflict Resolution

Appendix Z

Documents Related to the 2016 Interregional Conflict Resolution

This appendix contains documents related to the 2016 Interregional Conflict Resolution. The documents contained in this appendix are listed below. A more detailed discussion of the 2016 Interregional Conflict Resolution is contained in Chapter 10 (Section 10.6) of this report.

- July 21, 2015 Letter from Region D Water Planning Group to TWDB Regarding Objection by Region D Water Planning Group to the inclusion of Marvin Nichols Reservoir in Round 4
- August 6, 2015 Memo from TWDB Regarding Potential Interregional Conflict between Regional Water Plans for Regions C & D
- August 24, 2015 Letter/Brief from Region C Water Planning Group to TWDB Regarding Potential Interregional Conflict between Regional Water Plans for Regions C & D
- September 1, 2015 Letter from Sulphur River Basin Authority to TWDB Regarding Sulphur River Basin Authority/Potential Interregional Conflict between Regional Water Plans for Region C & D
- September 9, 2015 Minutes from TWDB Meeting. Item 2 details the TWDB Findings that an interregional conflict exists.
- October 5, 2015 Mediation Agreement between Region C and D.
- November 9, 2015 Resolutions 15-3 and 15-4 by Region C Water Planning Group reflecting the terms of the Mediation Agreement.

Linda Price, Chairman
Region D Water Planning Group
PO Box 360
Linden, Texas 75563
Cell: 903.720.8729 Email: l.p.linda14@gmail.com

2015 JUL 23 PM 2:40

July 21, 2015

Kevin Patteson, Executive Administrator
Texas Water Development Board
PO Box 13231
Austin, TX 78711-3231

Re: Objection by Region D Water Planning Group to the inclusion of Marvin Nichols Reservoir in Round 4

Dear Mr. Patteson:

On July 14, 2015, the Region D Water Planning Group authorized me to notify the Texas Water Development Board (TWDB) that Region D has concluded that the proposed Marvin Nichols Reservoir as described in the Region C IPP for Round 4 will have an unacceptable degree of impact on Region D's water planning area and appears to conflict with the Region D Round 4 IPP. Region D's objection is primarily based on information that indicates its inclusion is not protective of the natural and agricultural resources of Region D.

Region D continues to assert that the available information demonstrates that Region C can meet all of its projected needs for the next 50 years without resorting to constructing a new impoundment in the Sulphur River Basin.

Region D encourages the TWDB to aggressively pursue steps that will provide a more thorough vetting of this topic between Region C and D. Region D is prepared to meet and discuss this topic whenever afforded the opportunity by the TWDB.

Please feel free to contact me with any questions you may have. I look forward to working with you.

Sincerely,

Linda Price

Linda Price, Chair of Region D

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

Date: August 6, 2015

To: Persons on the Attached Mailing List (by mail and email as indicated)

Re: Potential Interregional Conflict between Regional Water Plans for Regions C & D

On July 21st, 2015, Region D Water Planning Group submitted a letter to the Texas Water Development Board ("TWDB") indicating its position that "the proposed Marvin Nichols Reservoir as described in the Region C IPP for Round 4 will have an unacceptable degree of impact on Region D's water planning area and appears to conflict with the Region D Round 4 IPP." (See Attachment A.)

Through this correspondence, the persons on the attached mailing list are hereby notified that the Board will consider whether an interregional conflict exists during its Board Meeting on **Wednesday, September 9th, 2015, beginning at 9:30 AM** in Room 170, Stephen F. Austin Building, 1700 North Congress Avenue, Austin, Texas. The Board will take oral argument on this matter. The order and time allotments for oral presentation are established as follows: 15 minutes for the Region D Representative(s); 15 minutes for the Region C Representative(s); and 15 minutes for the Executive Administrator. The parties may apportion their respective allotments as they see fit. If a party plans on apportioning time among multiple individuals, a representative of that party should contact Joyce Bourenane, Office of General Counsel at (512) 463-7686 by **5:00 p.m. on Monday, September 7th, 2015** to let her know how the time will be apportioned.

Furthermore, Regions C and D are invited to submit briefs on the issue of whether an interregional conflict exists. In the event that a brief is submitted, it must be received by the Office of General Counsel on or before **5:00 p.m.** on **Tuesday, August 25th, 2015.** Please send the submittals to the Office of General Counsel by U.S. Mail and Electronic Mail. The mailing address of the Office of General Counsel is: Office of General Counsel, ATTN: Les Trobman, Texas Water Development Board, P.O. Box 13231, Austin, Texas 78711-3231 [les.trobman@twdb.texas.gov]. On the same day a submittal is transmitted to the Office of General Counsel, a copy must also be sent by U.S. Mail and Electronic Mail to all other persons at their address/email address listed on the attached Mailing List. The Executive Administrator will submit a recommendation to the Board, with a copy to the Mailing List on or before **Tuesday, September 1st, 2015.**

If you have any questions regarding this matter, please contact me at 512-463-9105.

Very truly yours,

General Counsel

Attachments

Mailing List

Linda Price, Chairman
Region D Water Planning Group
P.O. Box 360
Linden, TX 75563
linda.price@wardtimber.com

Walt Sears, General Manager
Northeast Texas MWD
P.O. Box 955
Hughes Springs, TX 75656
netmwd@aol.com

Jody Puckett
City of Dallas Water Utilities
1500 Marilla St., Rm 4AN
Dallas, TX 75201
jo.puckett@dallascityhall.com

J. Kevin Ward
Trinity River Authority
P.O. Box 60
Arlington, TX 76004
wardk@trinityra.org

Joe Reynolds
Texas Water Development Board
P. O. Box 13231
Austin, Texas 78711-3231
joe.reynolds@twdb.texas.gov

REGION C WATER PLANNING GROUP

Senate Bill One Fourth Round of Regional Water Planning - Texas Water Development Board

August 24, 2015

VIA E-MAIL
les.trobman@twdb.texas.gov

Mr. Les Trobman
General Counsel
Texas Water Development Board
1700 North Congress Avenue
Austin, Texas 78701

Re: Potential Interregional Conflict between Regional Water Plans for Regions C & D

Dear Mr. Trobman,

The Region C Water Planning Group (RCWPG) submits this letter brief in response to your solicitation of briefing dated August 6, 2015. The Region D Water Planning Group has alleged by a letter of July 21 that Region C's "proposed Marvin Nichols Reservoir . . . will have an unacceptable degree of impact on Region D's water planning area and appears to conflict with the Region D Round 4 IPP." It further contends that the proposed reservoir "is not protective of the natural and agricultural resources of Region D." Those claims are without merit and do not rise to the level of an interregional conflict between the Region C and D fourth-round IPPs.

<u>Marvin Nichols in the 2015 RCWPG IPP</u>

Region C has elected to include multiple strategies for the development of Marvin Nichols in its 201 IPP. The Sulphur Basin Supplies strategy (5C.1 Recommended Strategies for Regional Wholesal Water Providers, pp. 5C.1-4 of the RCWPG IPP) is a recommended strategy for the Tarrant Regional Water District (TRWD), the North Texas Municipal Water District (NTMWD) and the Upper Trinity Regional Water District (UTRWD), and an alternate strategy for the Cities of Dallas and Irving. The strategy consists of a combination of water from Marvin Nichols and the reallocation of conservation storage in Wright Patman Lake. The 2015 RCWPG IPP retains the 2011 configuration of Marvin Nichols as an alternate water management strategy for NTMWD, UTRWD, TRWD, and the City of Irving.

NTMWD, TRWD, Dallas, UTRWD, and Irving, along with the Sulphur River Basin Authority, formed a Joint Committee on Program Development (JCPD) in 2001. Since that time, the JCPD Region C entities have provided more than $5 million to the SRBA to further investigate the development of surface water supplies in the Sulphur River basin. Sulphur basin feasibility studies are underway, conducted by the U.S. Army Corps of Engineers, SRBA and the JCPD. Those studies include multiple potential configurations for Marvin Nichols.

<u>RCWPG has furnished extensive studies on impacts of the recommended and alternate Marvin Nichols strategies</u>

Region D's allegation of an interregional conflict is an attempt by it to use the water planning process to thwart, rather than encourage, the development of adequate water supplies for the State of Texas. The RCWPG and JCPD have studied the impacts of both the 2011 and 2015 Marvin Nichols configurations, and also concurrent reliance by Region C on other supplies available in Region D. In doing so, the RCWPG was mindful of the direction it received from the Board during the resolution of the last claimed conflict in "An Order Concerning the Interregional Conflict between the 2011 North Central Texas Regional Planning Area Regional Water Plan and the 2011 East Texas Regional Planning Area Regional Water Plan in Accordance with Texas Water Code §16.053" issued January 2015 (Order).

c/o TRA
5300 South Collins Street
Arlington, Texas 76018
P. O. Box 60
Arlington, Texas 76004
817/467-4343
817/465-0970/Fax
RegionCWPG@trinityra.org
www.regioncwater.org

The Board is familiar with the long history of the resolved interregional conflict in connection with the RCWPG's 2011 Regional Water Plan. As a part of the resolution process, the Board ordered the RCWPG to conduct an analysis of the impacts of Marvin Nichols (as then proposed) on the resources of Region D and the State. Region C furnished that report to the Board on October 29, 2014. In support of what is now an alternate strategy, the RCWPG furnished the data it developed as an appendix to its 2015 IPP. *See*, 2015 RCWPG IPP, Appendix Y, *Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on the Agricultural and Natural Resources of Region D and the State.*

The RCWPG has built upon and continued to study the impacts of Region D-based water supply strategies in the Region C plan. With its 2015 IPP, the RCWPG has furnished the Board with its *Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on Agricultural and Natural Resources with the Top of Conservation Storage at 313.5 Feet above Mean Sea Level.* That report includes an in-depth analysis entitled *Timberland and Agricultural Land Impact Assessment For Selected Water Resource Options in the Sulphur River Basin.* Copies of those documents are attached hereto. Those studies demonstrate that the development of the revised Marvin Nichols project is consistent with the long-term protection of the state's water resources, agricultural resources and natural resources.

Based on the RCWPG's extensive studies and the Board's resolution of the prior conflict, no interregional conflict exists with respect to either the recommended or alternate Marvin Nichols strategies, as described below.

<u>No substantial adverse effect on Region D</u>

The RCWPG has furnished extensive data regarding the impacts of both the recommended and alternate strategy implementations of Marvin Nichols, and no conflict exists with respect to either strategy. With respect to the alternate strategy, the Board resolved the conflict by directing that Marvin Nichols be included in the 2011 RCWPG Regional Water Plan and the State Water Plan, and stated that upon that inclusion, "no outstanding interregional conflicts [existed] related to the 2011 Region C RWP." Order page 8, Conclusion of Law 6. The effects of the alternate strategy Marvin Nichols have been studied extensively, and have not changed since January of this year. Likewise, no conflict exists with respect to the draft 2016 IPP's recommended Marvin Nichols strategy. As described, Region C has furnished with its IPP its *Analysis and Quantification of the Impacts of the Marvin Nichols Reservoir Water Management Strategy on Agricultural and Natural Resources with the Top of Conservation Storage at 313.5 Feet above Mean Sea Level*, including its *Timberland and Agricultural Land Impact Assessment For Selected Water Resource Options in the Sulphur River Basin.* Those documents confirm no greater impacts to Region D under the recommended strategy than those associated with the now alternate strategy for Marvin Nichols.

In general, in determining whether the recommended or alternate Marvin Nichols strategies are in conflict with Region D's IPP, the Board should differentiate between short and long-term effects on Region D. It should also consider long-term benefits to that region based on proposed Region C water management strategies. Long-term benefits may, in fact, totally offset temporary effects on economic, agricultural, and natural resources. Disrupted agricultural activities may potentially be relocated and pursued at prior or greater levels of intensity. Short-term economic effects in one sector may be offset entirely by long-term development of other businesses and industries. The Board should determine the presence or absence of an interregional conflict based upon the reasonably foreseeable, long-term and net effects on a host region's economic, agricultural and natural resources.

<u>*Ward Timber* does not mandate a finding of interregional conflict</u>

A finding of an interregional conflict on the facts presented is not required by *Texas Water Development Board v. Ward Timber, LTD, et al.*, 411 S.W.3rd 554 (Tex. App.—Eastland 2013, no pet.) (*Ward Timber*). The analyses furnished by the RCWPG of Marvin Nichol's impacts on Region D distinguish the current conflict claim from the one previously alleged by Region D. In *Ward Timber*, the Court observed that "Region D [] examined the impacts [of Marvin Nichols]" in its Regional Water Plan, and "Region C [] decided to evaluate the impacts of the Marvin Nichols Reservoir in the future as part of its planning process." *Id.* at 573. Region C has now done so and has submitted extensive analyses on that subject as a part of its fourth-round IPP.

Unlike last planning cycle, the Board has significant data before it, presented by both Regions C and D, upon which it may determine the presence or absence of an interregional conflict. In addition, the Board may look back to its findings and conclusions reached in resolving the prior conflict for guidance as to whether Region D has alleged a valid conflict in this instance. In its order, the Board correctly observed that the development of Marvin Nichols "could act as a catalyst for economic development and growth" in Region D, and that new reservoirs [] stimulate the economy through new recreational business and local improvements." Order page 5, Finding of Fact 31. Likewise, the Board found that the RCWPG's 2011 Regional Water Plan, which included the now alternate Marvin Nichols strategy, was "consistent with the long-term protection of the state's agricultural and natural resources." Order page 8, Conclusion of Law 11. Those findings apply with even greater force to the RCWPG's fourth-round IPP recommended Marvin Nichols strategy.

Conclusion

The Board has previously reviewed and resolved a conflict outlined in the Order in favor of the 2011 Region C Water Plan Marvin Nichols strategy. As recommended in the 2015 Region C IPP, the proposed Marvin Nichols strategy does not have a substantial adverse effect on the natural and agricultural resources in Region D. The Board has sufficient information before it to find that the currently proposed Region C water management strategies in Region D do not have a substantial adverse effect, and accordingly should find no conflict between the plans.

Respectfully submitted,

Jody Puckett, Chair
Region C Water Planning Group

Attachments

cc: Linda Price, Chairman
Region D Water Planning Group
linda.price@wardtimber.com

Walt Sears, General Manager
Northeast Texas MWD
netmwd@aol.com

J. Kevin Ward, RCWPG Administrator
Trinity River Authority
wardk@trinityra.org

Joe Reynolds
Texas Water Development Board
joe.reynolds@twdb.texas.gov

Sulphur River Basin Authority

September 01, 2015

Office of General Counsel
Attn: Les Trobman
Texas Water Development Board
P. O. Box 13231
Austin, Texas 78711-3231

RE: **SULPHUR RIVER BASIN AUTHORITY**
Potential Interregional Conflict between Regional Water Plans for Region C & D

Dear Mr. Trobman:

The Sulphur River Basin neighbors in Region C have established purpose and need for additional water supply by 2070. These agencies and cities are seeking approximately 50% of the unappropriated water in the Sulphur River Watershed. This will require an interbasin transfer. The out of basin cities and agencies providing purpose and need could pursue the unappropriated water without the Sulphur River Basin Authority (SRBA). In view of the fact that SRBA was authorized by the state of Texas to provide for the conservation and development of the state's natural resources within the basin, these cities and agencies partnered with SRBA to facilitate prudent planning, selection, and development. The North Texas Municipal Water District, Upper Trinity Regional Water District, Tarrant Regional Water District, City of Dallas, and City of Irving entered into an "Advanced Funding Agreement for Water Resources Planning in the Sulphur River" to allow SRBA to facilitate water planning and the studies needed to determine the water supply strategy that is best for the basin and its inhabitants. SRBA and the Corps of Engineers entered into a Feasibility Cost Share Agreement to have the Corps participate in the Feasibility Study.

911 N. Bishop St., Suite C 104
Wake Village, TX 75501
Web Pages: www.sulphurr.org
www.sulphurriverbasinauthority.org
(903) 223-7887
Fax: (903) 223-7988
Email: nrsrba@cableone.net

SRBA administers a prudent planning process. SRBA's objectives are to protect the basin, provide a water supply that will meet purpose and need with the least environmental impact, and ensure a benefit to the basin equal to the diversion of its natural resource. These objectives are in accordance with the Sulphur River Basin Authority's enabling legislative law to provide for the conservation and development of the state's natural resources within the basin of Sulphur River.

To select a water strategy with the least environmental, social, and economic impacts, the Sulphur River Basin Authority continues to develop a vast data base of information involving the entire Sulphur River Watershed. Studies continue to be developed (e.g. hydrological, geological, environmental, social, and economic). This process is essential to protect and develop a river basin and to comply with regulatory requirements needed to permit projects.

Planning, executing, and completing tasks during 2011 and 2013 were recognized by the Corps of Engineers (COE) administration. In August of 2013, the study was re-scoped to be 3x3x3 compliant, taking into consideration a water supply approach for the SMART Planning feasibility study. In 2014, 2015 and 2016 the US President's budget included money for the Sulphur River Basin Feasibility Study totaling $1,500,000.

Water supply strategies within the Sulphur River Basin Feasibility Study include reallocation of Lake Wright Patman, reallocation of Lake Jim Chapman, Marvin Nichols Reservoir, Talco Reservoir, George Parkhouse I Reservoir, George Parkhouse II Reservoir, and combinations of each to total 60 possible water supply strategies.

In 2014 the compiled data was synthesized to narrow the focus. A combination of reallocation at Lake Wright Patman and Marvin Nichols Reservoir is now being studied in-depth. Augmenting hydrologic, environmental and socioeconomic categories are of priority. These in-depth studies combined with previous data will provide the tools to determine a project that meets the objectives of SRBA and provide the data required for NEPA documents. SRBA will only recommend a project with data compliant with regulatory guidelines.

It is crucial that all the water supply strategies in the Sulphur River Basin Feasibility Study that are listed in the Texas State Water Plan remain in the plan. Not one single water supply strategy has been studied to the extent needed to be permitted. The planning activities for needs analysis and strategy recommendations that The Texas Water Development Board supports are analogous to regulatory requirements needed for permitting. It is in SRBA's view that TWDB's intent is to help provide and encourage extensive studies needed to permit water supply strategies. The permitting process is the judge and jury of a water supply strategy. Due to RWPGs limited funds, it is up to the Water User Groups (WUGs) and Wholesale Water Providers (WWPs) to spend the time and money to develop the data needed.

SRBA's current contracts and functions clearly indicate that SRBA expects to be a Wholesale Water Provider (WWP) as defined in the (*Texas Administrative Code, Title 31 Part 10, Chapter 357 Subchapter A, Rule 357.10)*

(30) Wholesale Water Provider (WWP)--Any person or entity, including river authorities and irrigation districts, that has contracts to sell more than 1,000 acre-feet of water wholesale in any one year during the five years immediately preceding the adoption of the last regional water plan. The regional water planning groups shall include as wholesale water providers other persons and entities that enter or that the regional water planning group expects or recommends to enter contracts to sell more than 1,000 acre-feet of water wholesale during the period covered by the plan.

SRBA should be designated as a WWP in the State Water Plan.

Regional Water Planning Groups are required to follow *(Texas Administrative Code, Title 31 Part 10, Chapter 357 Subchapter C, Rule 357.34)* for all WUGs and WWPs.

SRBA continues to support TWDB and looks forward to the next round of planning.

Sincerely,

SULPHUR RIVER BASIN AUTHORITY

Michael Russell, President

MINUTES OF THE
TEXAS WATER DEVELOPMENT BOARD
BOARD MEETING
September 9, 2015 – 9:30 A.M.

Chairman Bech K. Bruun called to order the meeting of the Texas Water Development Board at 9:31 a.m. in Room 170 of the Stephen F. Austin Building, 1700 N. Congress Avenue, Austin, Texas. In addition to Chairman Bruun, Director Kathleen Jackson was also in attendance, and a quorum was present.

The Chairman stated that the Board would move Item #2 on today's agenda to the end of the agenda and would begin the meeting with Item #3.

The General Counsel announced the first item for consideration:

3. CONSIDER APPROVING BY RESOLUTION A REQUEST FROM THE LOWER COLORADO RIVER AUTHORITY (TRAVIS COUNTY) TO AMEND TEXAS WATER DEVELOPMENT BOARD RESOLUTION NO. 14-72 TO EXTEND THE COMMITMENT PERIOD FOR A LOAN FROM THE TEXAS WATER DEVELOPMENT FUND BY SIX (6) MONTHS, TO FINANCE PLANNING, ACQUISITION, DESIGN, AND CONSTRUCTION OF AN OFF-CHANNEL RESERVOIR. Clay Schultz, Water Supply and Infrastructure, presented this item.

   Chairman Bruun moved to adopt the proposed Resolution amending Texas Water Development Board Resolution No. 14-72, to extend the commitment period for a loan from the Texas Water Development Fund until March 31st, 2016, to finance the planning, acquisition, design, and construction of an off-channel reservoir, as recommended by the Executive Administrator.

   The motion was seconded by Director Jackson; it passed unanimously.

4. CONSIDER AFFIRMING BY RESOLUTION THE COMMITMENT TO PROVIDE FINANCIAL ASSISTANCE FROM THE CLEAN WATER STATE REVOLVING FUND TO THE GREATER TEXOMA UTILITY AUTHORITY – CITY OF WHITEWRIGHT (GRAYSON COUNTY) MADE IN TWDB RESOLUTION NO. 15-070, AND CONCURRING IN THE EXECUTIVE ADMINISTRATOR'S ENVIRONMENTAL FINDING. Kathy Calnan, Water Supply and Infrastructure, presented this item.

   Director Jackson moved to affirm the commitment to provide financial assistance from the Clean Water State Revolving Fund to the Greater Texoma Utility Authority, on behalf of the City of Whitewright, made in Texas Water Development Board Resolution No. 15-070, and concurring in the Executive Administrator's environmental findings.

   The motion was seconded by Chairman Bruun; it passed unanimously.

5. CONSIDER AUTHORIZING THE EXECUTIVE ADMINISTRATOR TO PUBLISH A REQUEST FOR QUALIFICATIONS (RFQ) IN ORDER TO SELECT A QUALIFIED

ENGINEERING FIRM TO CONDUCT ADDITIONAL DRAINAGE ANALYSES AND RELATED STUDY ACTIVITIES ASSOCIATED WITH THE LOWER RIO GRANDE VALLEY COLONIA STORMWATER DRAINAGE PLANNING STUDY. Gilbert Ward, Contracting and Purchasing, presented this item.

Chairman Bruun moved to authorize the Executive Administrator to publish a Request for Qualifications in order to select a qualified engineering firm to conduct additional drainage analyses and related study activities associated with the Lower Rio Grande Valley Colonia Stormwater Drainage Planning Study.

The motion was seconded by Director Jackson; it passed unanimously.

6. BRIEFING AND DISCUSSION REGARDING THE TIMELINE FOR SOLICITATION OF THE SECOND ROUND OF FUNDING REQUESTS (2016) FOR THE STATE WATER IMPLEMENTATION FUND FOR TEXAS FINANCIAL ASSISTANCE PROGRAM. Tom Entsminger, Water Supply & Infrastructure, presented this item.

No action was taken on this item.

The Chairman recognized the following legislative staff members attending the meeting today:

Michael Bullock, Office of Representative David Simpson;
Ryan Weisemen, Office of Senator Eltife;
Buffy Barrett, Clerk, House Natural Resources;
Lauren Murray, Senate Committee on Agriculture, Water & Rural Affairs;
Shannon Harmon, Senate Committee on Agriculture, Water & Rural Affairs;
Kathi Seay, Office of Representative David Simpson; and
Adam Leggett, Office of Senator Hancock

The General Counsel announced the next item and introduced the first speaker.

2. CONSIDERATION OF A POTENTIAL INTERREGIONAL CONFLICT BETWEEN INITIALLY PREPARED REGIONAL WATER PLANS FOR REGIONS C AND D FOR THE FOURTH CYCLE OF REGIONAL WATER PLANNING.

Mr. Trobman introduced Linda Price, representing Region D, who addressed the Board. Also addressing the Board on behalf of Region D were Jim Thompson and Walt Sears.

Mr. Trobman introduced Jody Puckett, representing Region C, who addressed the Board.

Mr. Trobman introduced Joe Reynolds, Assistant General Counsel, who presented the Executive Administrator's final recommendation.

Director Jackson moved that the Board:

Find that an interregional conflict exists between the 2016 Region C and Region D

Initially Prepared Plans, as set forth in Section 16.053 of the Texas Water Code, Title 31 Texas Administrative Code Chapter 357, and the precedent set by the 11th Court of Appeals in *Texas Water Development Board vs. Ward Timber, Ltd.*;

Direct the Executive Administrator to negotiate and execute a contract with the Center for Public Policy Dispute Resolution for a mediation to begin on or before Monday, October 5, 2015, in Austin, Texas, in order to attempt to resolve the interregional conflict between the 2016 Region C and Region D Initially Prepared Plans;

Encourage the Region C and Region D regional water planning groups to actively and meaningfully engage in the mediation;

Direct the Region C and Region D regional water planning groups to designate and authorize representatives to participate in the mediation and provide the Executive Administrator with the names of their representatives by September 30, 2015;

Direct the Executive Administrator to designate staff to attend and participate in the mediation as a resource; and

Direct the mediator to provide the Board a written report on the results of the mediation upon conclusion.

If Region C and Region D reach a negotiated resolution, **Direct** the Regional Water Planning Groups to follow all required processes for adopting their respective Regional Water Plans, consistent with the agreed terms.

Otherwise, **Direct** the Executive Administrator to move forward with conducting the required public hearing and comment process, and provide a final recommendation on resolution of the conflict to the Board as expeditiously as possible.

The motion was seconded by Chairman Bruun; it passed unanimously.

7. No public comments were received.

8. The Board did not meet in Executive Session.

Chairman Bruun adjourned the meeting at 10:30 a.m.

APPROVED and ordered of record this, the 9th day of September, 2015.

TEXAS WATER DEVELOPMENT BOARD

____

Bech K. Bruun, Chairman

DATE SIGNED: ____________________

ATTEST:

____

Kevin Patteson,
Executive Administrator

Agreement Resolving the Declared Conflict
Between the Region C and Region D Initially Prepared Water Plans

On September 9, 2015, the Texas Water Development Board found that an interregional conflict existed between the 2016 Region C and Region D Initially Prepared Plans, and encouraged the regional water planning groups to engage in mediation to attempt to resolve the conflict.

On October 5, 2015, the undersigned representatives of the regions met in mediation and discussed the issues related to the current conflict in their regional water plans relating to the Marvin Nichols Reservoir.

The undersigned representatives of Region C and Region D agree to resolve the conflict that the Texas Water Development Board found between their initially prepared regional water plans as follows:

1. Region C will move the Marvin Nichols Reservoir as a designated strategy to the year 2070 in its 2016 regional water plan;
2. Region C will support Region D's efforts to obtain Texas Water Development Board funding to study alternative water supplies to Marvin Nichols Reservoir for the process of the 5th cycle of regional water planning for Regions C and D, resulting in the development of the 2021 regional water plans;
3. Region C will adopt a resolution to recommend that water suppliers in Region C not submit any water rights applications for new reservoirs that would be located in Region D through the end of the 5th cycle of regional water planning; and
4. Region D agrees that it will not challenge Marvin Nichols Reservoir as a unique reservoir site through the end of the 5th cycle of regional water planning.

The undersigned representatives further agree (1) to seek ratification of this agreement by their respective regional water planning groups, and (2) to seek inclusion of the language relating to the terms of the agreement in their region's adopted 2016 regional water plans. The representatives further agree that they will seek to have their regions work more cooperatively in the next regional water planning process.

For Region C	**For Region D**
Jody Puckett Date: 10/9/15	Linda Price Date: 10-8-15
Wayne Owen Date: 10-8-2015	Elizabeth Fazio Date: 10/09/2015
Mike Rickman Date: 10-9-15	Bret McCoy Date: 10-8-2015
Kevin Ward Date: 10-8-2015	Jim Thompson Date: 10/8/15

REGION C
Water Planning
for North Texas

A RESOLUTION RATIFYING THE MEDIATED SETTLEMENT AGREEMENT BETWEEN THE REGIONS C AND D REGIONAL WATER PLANNING GROUPS EFFECTIVE NOVEMBER 9, 2015

RESOLUTION NO. 15-3

WHEREAS, the Region C Water Planning Group timely presented its 2016 Initially Prepared Plan to the Texas Water Development Board; and

WHEREAS, in response thereto, the Region D Water Planning Group alleged that an interregional conflict existed between that plan and the 2016 Region D Initially Prepared Plan, concerning the development of certain surface water resources in Region D; and

WHEREAS, on September 9, 2015, the Texas Water Development Board found that an interregional conflict existed between the Regions C and D 2016 Initially Prepared Plans, and referred the matter to mediation; and

WHEREAS, duly-appointed representatives of the Regions C and D Water Planning Groups mediated the issue of the alleged interregional conflict on October 5, 2016; and

WHEREAS, the representatives of the Regions C and D Water Planning Groups reached a proposed mediated settlement agreement with respect to the alleged interregional conflict.

NOW, THEREFORE, BE IT RESOLVED BY THE REGION C WATER PLANNING GROUP:

The Region C Water Planning Group ratifies, approves and adopts the Agreement Resolving the Declared Conflict Between the Region C and Region D Initially Prepared Water Plans, a copy of which is attached to this resolution as Exhibit A, and which is incorporated by reference herein and made a part hereof as fully as if set forth herein.

THIS RESOLUTION ADOPTED BY THE REGION C WATER PLANNING GROUP IN A REGULAR MEETING ON THE 9th DAY OF NOVEMBER 2015.

KEVIN WARD, Secretary	**JODY PUCKETT**, Chair

REGION C
Water Planning
for North Texas

A RESOLUTION CONCERNINNG WATER RIGHTS APPLICATIONS FOR SURFACE WATER IMPOUNDMENTS IN REGION D EFFECTIVE NOVEMBER 9, 2015

RESOLUTION NO. 15-4

WHEREAS, the Region C Water Planning Group timely presented its 2016 Initially Prepared Plan to the Texas Water Development Board; and

WHEREAS, in response thereto, the Region D Water Planning Group alleged that an interregional conflict existed between that plan and the 2016 Region D Initially Prepared Plan, concerning the development of certain surface water resources in Region D; and

WHEREAS, on September 9, 2015, the Texas Water Development Board found that an interregional conflict existed between the Regions C and D 2016 Initially Prepared Plans, and referred the matter to mediation; and

WHEREAS, duly-appointed representatives of the Regions C and D Water Planning Groups mediated the issue of the alleged interregional conflict on October 5, 2016; and

WHEREAS, the representatives of the Regions C and D Water Planning Groups reached a proposed mediated settlement agreement with respect to the alleged interregional conflict, which the Region C Water Planning Group ratified and approved by its adoption of Resolution No. 15-3; and

WHEREAS, pursuant to that agreement, the Region C Water Planning Group agreed to adopt a resolution regarding water rights permitting activities in Region D.

NOW, THEREFORE, BE IT RESOLVED BY THE REGION C WATER PLANNING GROUP:

The Region C Water Planning Group recommends that water suppliers in Region C not submit any water rights applications for new reservoirs in Region D through the end of the fifth cycle of regional water planning activities.

THIS RESOLUTION ADOPTED BY THE REGION C WATER PLANNING GROUP IN A REGULAR MEETING ON THE 9th DAY OF NOVEMBER 2015.

J. K. Ward | Jo M. Puckett

KEVIN WARD, Secretary | **JODY PUCKETT**, Chair