

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 Region C water planning area;
- Each county judge of a county located in whole or in part in the Region C water planning area;
- Each special or general law district or river authority with responsibility to manage or supply water in the Region C water planning area based upon lists of such water districts and river authorities obtained from Texas Commission on Environmental Quality;
- Each retail public utility, defined as a community water system, that serves any part of the Region C water planning area or receives water from the Region C water planning area based upon lists of such entities obtained from Texas Commission on Environmental Quality; and
- Each holder of record of a water right for the use of surface water the diversion of which occurs in the Region C water planning area based upon lists of such water rights holders obtained from Texas Commission on Environmental Quality.

FROM: Region C Water Planning Group

RE: Public Notice of a Proposed Amendment of the 2001 *Region C Water Plan*

DATE: November 2, 2004

PUBLIC NOTICE

To All Interested Parties:

Notice is hereby given that the Region C Water Planning Group (RCWPG) is considering an amendment to the 2001 *Region C Water Plan*. The Region C Water Planning Group area includes all or part of the following counties: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise. A public hearing will be held prior to taking action on the amendments. A public comment period will be included during the public hearing. The RCWPG will accept written and oral comments on the proposed amendments at the public hearing. Written comments may also be provided to the RCWPG by sending the comments to the attention of:

RCWPG Administrator
Attention: Mr. Jim Parks
North Texas Municipal Water District
P.O. Box 2408
Wylie, TX 75098

All written public comments are due to the RCWPG by 5:00 p.m. on January 5, 2005.

The date, time, and location of the public hearing is:

Notice is given that a public hearing on the proposed amendment will be held on December 6, 2004, at 12:30 p.m. at the Trinity River Authority's Central Wastewater Treatment Plant located at 6500 W. Singleton Boulevard, Grand Prairie, Texas 75212.

A summary of the proposed action to be taken includes:

The proposed action is to amend the 2001 *Region C Water Plan* by changing language and recommendations in the plan for the North Texas Municipal Water District and its customers. The proposed amendment being considered includes:

- Adding a water management strategy to include the North Texas Municipal Water District's proposed East Fork Reuse Project.
- Adding water conservation strategies for North Texas Municipal Water District Members and Customers.

The name, telephone number, and address of the person to whom questions or requests for additional information may be submitted is:

Jim Parks, telephone number (972) 442-5405, North Texas Municipal Water District, P.O. Box 2408, Wylie, TX 75098. The North Texas Municipal Water District is the Administrator for the RCWPG.

The public may submit comments to the RCWPG as follows:

The RCWPG will accept written and oral comments at the public hearing. Written comments may be sent directly to the RCWPG in care of the North Texas Municipal Water District, P.O. Box 2408, Wylie, TX 75098. The deadline for submission of written public comments is January 5, 2005, at 5:00 p.m.

A copy of the proposed amendment is available at:

The Region C web site at <http://www.regioncwater.org>. Beginning November 6, 2004, a paper copy of the proposed amendment will be available for viewing at the County Clerk's Office in the following counties: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise. A paper copy of the proposed amendment will also be available for viewing at the following libraries:

Schimelpfenig Library Plano, Texas	Cooke County Library Gainesville, Texas	Dallas Public Central Library Dallas, Texas
Lewisville Public Library Lewisville, Texas	Nicholas P. Sims Library Waxahachie, Texas	Bonham Public Library Bonham, Texas
Fairfield Library Association Fairfield, Texas	Sherman Public Library Sherman, Texas	Denison Public Library Denison, Texas

Henderson County Library Athens, Texas	G. J. Ritchie Public Library Jacksboro, Texas	Kaufman County Library Kaufman, Texas
Corsicana Public Library Corsicana, Texas	Weatherford Public Library Weatherford, Texas	Rockwall County Library Rockwall, Texas
Fort Worth Central Library Fort Worth, Texas	Decatur Public Library Decatur, Texas	

Proposed Amendment to the 2001 *Region C Water Plan*

Executive Summary

On August 31, 2004, the North Texas Municipal Water District (NTMWD) requested that the Region C Water Planning Group (RCWPG) consider an amendment to the 2001 *Region C Water Plan* based on changed conditions. The original plan envisioned that the NTMWD would obtain a supply of 50,000 acre-feet per year (ac-ft/yr) from Oklahoma sources by 2010. To date, negotiations for this supply have not been successful. In addition, the NTMWD service area has experienced more rapid growth than projected in the 2001 *Region C Water Plan*, adding urgency to the need for water.

Due to the immediate need, the NTMWD proposes to obtain additional water supplies through the East Fork Reuse Project. Although the 2001 plan identifies reuse as a water management strategy to help meet the region's water supply needs, it does not specifically identify the East Fork Reuse Project as a water management strategy for the NTMWD. Based on the changed conditions, the NTMWD proposes that the RCWPG amend the 2001 *Region C Water Plan* to specifically recommend the following water management strategy for the NTMWD:

- East Fork Reuse Project: Under the East Fork Reuse Project, reclaimed water originating from NTMWD sources would be diverted from the East Fork of the Trinity River near Crandall in Kaufman County and pumped to a large constructed wetland for nutrient removal and water quality polishing. After passage through the constructed wetland, water would be pumped to Lake Lavon for storage, blending, and use. The East Fork Reuse Project would provide a supply of 81,400 acre-feet per year (ac-ft/yr) by 2010, 96,400 ac-ft/yr by 2020, and 102,000 ac-ft/yr by 2030. The NTMWD is applying for a water right for the East Fork Reuse Project.

In addition, current planning rules require that water conservation strategies be considered for each projected water need. The NTMWD has developed a model water conservation plan for its Members and Customers. Based on elements of this model water conservation plan, the NTMWD proposes that the RCWPG amend the 2001 *Region C Water Plan* to specifically recommend the following water management strategies for NTMWD Members and Customers:

- Water System Audit, Pressure Control, and Leak Detection and Repair: This conservation strategy involves monitoring and minimizing unaccounted-for water through pressure control and leak detection and repair. The target unaccounted-for water would be 12 percent of total water demand for urban and suburban water suppliers served by NTMWD and 18 percent for rural water suppliers served by NTMWD. Water saved by this strategy is projected to be the difference between the reported unaccounted-for water and the target unaccounted-for water. One-third of the savings is projected to occur by 2010, and the full savings is projected

to occur by 2020. No water savings were projected for water user groups (WUGs) that have not reported their unaccounted-for water.

- **Public and School Education:** This conservation strategy involves continuing and expanding on existing public and school education programs. Public and school education is already included in the water demand projections for the 2001 *Region C Water Plan*, so no additional water savings are projected from this strategy.
- **Water Conservation Pricing:** This conservation strategy involves implementing an increasing block pricing structure for potable water. Water savings from this strategy are projected to be 1.5 percent of total water demand for WUGs that have not already implemented this strategy. One-half of the savings is projected to occur by 2010, and the full savings is projected to occur by 2020. No water savings were projected for WUGs that have not reported their water rate structure.
- **Water Waste Prohibition:** This conservation strategy involves implementing an ordinance prohibiting water waste. The ordinance would mandate one or more of the following: limited hours for lawn irrigation, rain sensors, freeze sensors, irrigation system design requirements, prohibition of spray on impervious surfaces, and prohibition of use of poorly maintained irrigation systems. Water saved by this strategy is projected to be 3.3 percent of irrigation water demand for WUGs that have not already implemented this strategy. One-half of the savings is projected to occur by 2010, and the full savings is projected to occur by 2020. No water savings were projected for WUGs that have not reported whether they have implemented a water waste prohibition.

For each customer and each of the above water conservation strategies, water conservation savings were estimated for each decade in which the customer has a projected water need and for each decade in which the customer is projected to use more than 140 gallons per capita per day (gpcd). Customers that reduce their per capita usage to less than 140 gpcd should continue striving to conserve water, but it is difficult to quantify the additional savings that will be achieved below this level of usage.

Table A shows the additional projected savings for NTMWD Members and Customers.

Table A
Projected Savings from Additional NTMWD Member and Customer Water Conservation

Conservation Strategy	Water Savings (ac-ft/yr)					
	2000	2010	2020	2030	2040	2050
Water System Audit, Pressure Control, and Leak Detection and Repair	0	630	2,842	4,004	5,244	6,398
Water Conservation Pricing	0	914	2,627	2,786	3,338	3,813
Water Waste Prohibition	0	487	1,384	1,825	2,266	2,669
TOTAL	0	2,031	6,853	8,615	10,848	12,880

NOTE: Savings from public and school education are included in the water demand projections.

Proposed Text Amendments

North Texas Municipal Water District

The NTMWD bullet item about reuse projects in the planning and permitting stage on page 5.12 would be modified to read:

- “North Texas Municipal Water District is in the planning and permitting stage of increasing its existing reuse project to supplement the water supply in Lake Lavon with reclaimed water. The NTMWD is also in the planning and permitting stage of supplementing its water supply in Lake Lavon with reclaimed water diverted from the East Fork of the Trinity River.”

The following bullet item would be added to the list of recommended water management strategies for the development of additional water supplies for the North Texas Municipal Water District on page 5.42:

- “**East Fork Reuse Project.** North Texas Municipal Water District is in the planning and permitting stage of supplementing its water supply in Lake Lavon with reclaimed water diverted from the East Fork of the Trinity River.”

The East Fork Reuse Project and Additional Customer Conservation would be added to Tables 5.12 and 5.13 and Figure 5.6. The amended Tables 5.12 and 5.13 and Figure 5.6 are presented below.

Water Conservation

Collin County

The discussion of water management strategies for Collin County near the bottom of page 5.46 will be modified to read:

“Water user groups that currently get water from NTMWD will use NTMWD to meet future increases to their needs. In addition, NTMWD customers will conserve water using water conservation strategies contained in the Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers.”

Amended Table 5.12
North Texas Municipal Water District Recommended Water Management Strategies

Source	Supply by Source and Demand in Acre-Feet per Year					
	2000	2010	2020	2030	2040	2050
<i>Lake Lavon</i>	<i>103,900</i>	<i>102,200</i>	<i>100,600</i>	<i>98,800</i>	<i>97,000</i>	<i>95,200</i>
<i>Lake Texoma</i>	<i>77,300</i>	<i>77,300</i>	<i>77,300</i>	<i>77,300</i>	<i>77,300</i>	<i>77,300</i>
<i>Lake Chapman</i>	<i>53,600</i>	<i>53,200</i>	<i>52,800</i>	<i>52,400</i>	<i>52,000</i>	<i>51,600</i>
<i>Current Reuse</i>	<i>35,925</i>	<i>35,925</i>	<i>35,925</i>	<i>35,925</i>	<i>35,925</i>	<i>35,925</i>
Future Additional Reuse		17,936	26,904	35,872	35,872	35,872
Additional Lake Texoma		10,000	10,000	10,000	10,000	10,000
Additional Customer Conservation		2,031	6,853	8,615	10,848	12,880
East Fork Reuse Project		81,400	96,400	102,000	102,000	102,000
Oklahoma Water		50,000	50,000	50,000	50,000	50,000
Lower Bois d'Arc Creek Lake			98,000	98,000	98,000	98,000
Marvin Nichols I				81,650	81,650	163,300
Total Connected Supply	270,725	429,992	554,782	650,562	650,595	732,077
Estimated Demand	234,884	316,092	387,346	448,164	512,509	560,043
Surplus (Shortage)	35,841	113,900	167,436	202,398	138,086	172,034

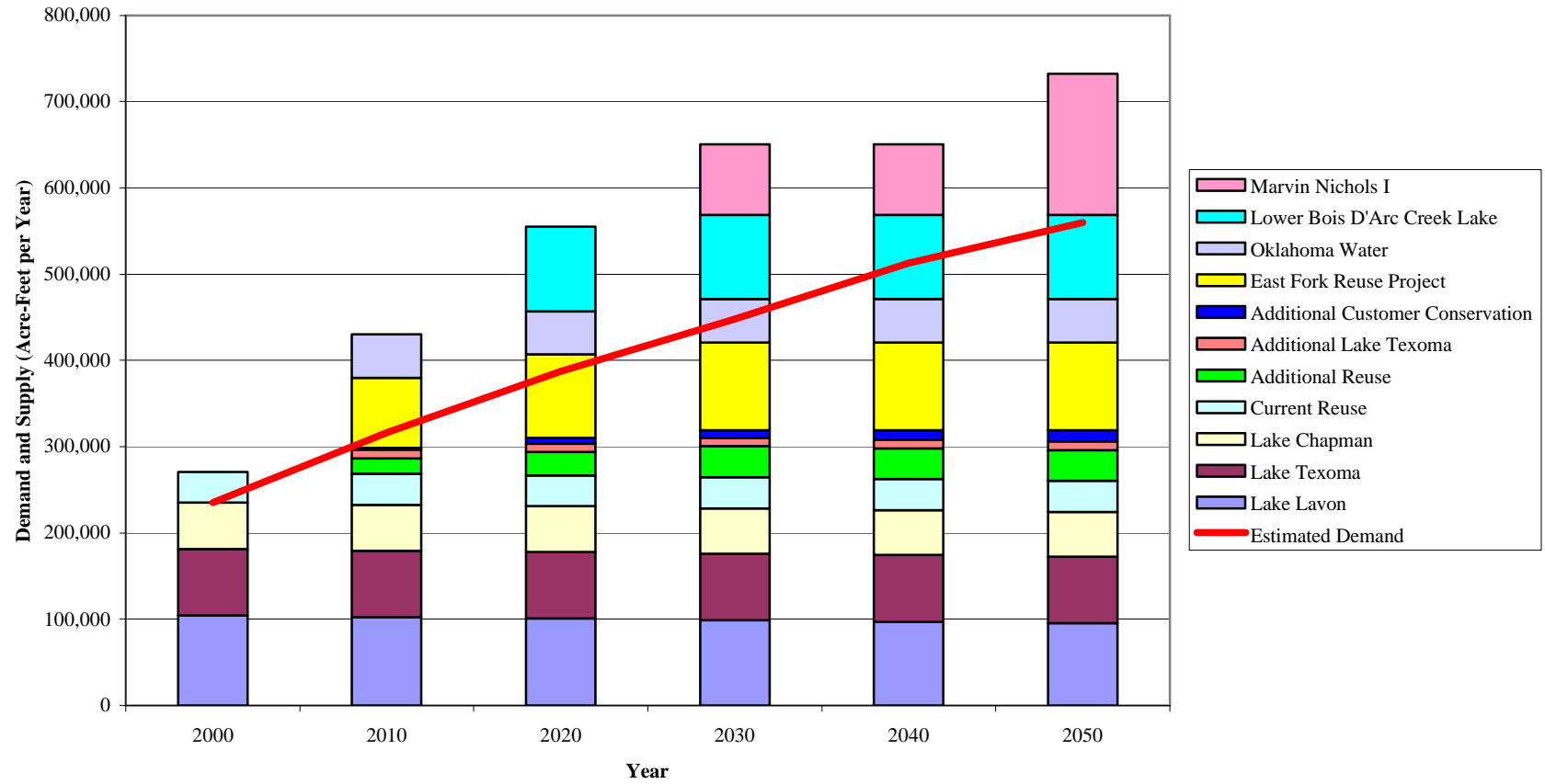
- Notes: (a) *Water supplies in italics are already available and connected.*
(b) Other options for NTMWD include the development of substantial additional Lake Texoma supplies and extending the Lake Texoma pipeline to Lake Lavon.

Amended Table 5.13
Capital Costs for North Texas Municipal Water District Water Management Strategies
- Based on 1999 Construction Costs -

Project	Approximate Year	Capital Cost	Additional 2050 Supply (Acre-Feet/Year)
Future Additional Reuse	2005	\$1,000,000 ^(a)	35,900
Water Treatment Plant Expansions and Treated Water Transmission System Improvements	Various	\$801,455,000	- ^(b)
Additional Lake Texoma	2006	\$5,286,000 ^(c)	10,000
Additional Customer Conservation	2007	\$334,000	12,880
East Fork Reuse Project	2007	\$246,010,000	102,000
Oklahoma Water	2007	\$68,777,000	50,000
Lower Bois d'Arc Creek Lake and Transmission system	2014	\$167,324,000 ^(d)	98,000
Marvin Nichols I	2030	\$391,605,000	163,300
Total		\$1,681,791,000	472,080

- Notes:
- (a) The cost for future additional reuse does not include construction costs for wastewater treatment plant expansions, which would have to be built anyway.
 - (b) Water treatment plant expansions and treated water transmission system improvements do not provide additional supply but are needed to make use of supplies provided by other projects.
 - (c) Facilities are already constructed.
 - (d) This represents cost to NTMWD. It is assumed that approximately 20% of the total reservoir cost will be assumed by local interests in Fannin County.

Figure 5.6
North Texas Municipal Water District Supply and Demand



Dallas County

The discussion of water management strategies for Dallas County near the bottom of page 5.51 will be modified to read:

“Most of Dallas County’s current demands are met by Dallas Water Utilities, with North Texas Municipal Water District also providing major supplies. They will continue to be the largest water providers in the county in the future. In addition, NTMWD customers will conserve water using water conservation strategies contained in the Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers.”

Denton County

The NTWMD bullet item under the discussion of water management strategies for Denton County near the top of page 5.56 will be modified to read:

- “North Texas Municipal Water District will provide treated water to certain water suppliers in eastern Denton County. In addition, NTMWD customers will conserve water using water conservation strategies contained in the Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers.”

Kaufman County

The NTWMD bullet item under the discussion of water management strategies for Kaufman County near the top of page 5.74 will be modified to read:

- “Additional supplies from North Texas Municipal Water District for Crandall, Forney, Kaufman, Oak Grove, County-Other, and Manufacturing. In addition, NTMWD customers will conserve water using water conservation strategies contained in the Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers.”

Rockwall County

The discussion of water management strategies for Rockwall County near the bottom of page 5.81 will be modified to read:

“North Texas Municipal Water District currently supplies the majority of the demand in the county, and NTMWD will meet increases to demands for its customers. In addition, NTMWD customers will conserve water using water conservation strategies contained in the Model Water Conservation Plan for North Texas Municipal Water District Member Cities and Customers.”

Proposed Amendments to Plan Appendices

Related additions are proposed to the following appendices to the 2001 *Region C Water Plan*:

- Appendix Q Environmental Evaluation
- Appendix R Cost Estimates
- Appendix S Texas Water Development Board Table 11 – Potentially Feasible Water Management Strategies
- Appendix T Texas Water Development Board Table 12 – Recommended Management Strategies by City and Category
- Appendix U Texas Water Development Board Table 13 – Recommended Management Strategies by Major Water Provider.

The proposed additions to each of the above appendices are attached to this public notice.

Additions to Table Q-3
Environmental Issues for Region C Water Management Strategies
Major Water Providers and Other Regional Suppliers

Entity	Project	Level of Difficulty to Address Environmental Issues (1)							Summary	Issues to be Addressed and Resolved During Planning and Design
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		
NTMWD	Reuse from East Fork Trinity River. Diversion of Water Through Constructed Wetlands and into Lake Lavon.	M	L	L	L	L	M		M	See Reuse from Table 1. Wetlands will be enhanced as a result of the project. Increased dissolved oxygen level downstream of the diversion will improve Water Quality in the East Fork Trinity River.

(1) NOTE: L=Low, M=Moderate, H=High as pertains to the level of difficulty in avoidance or mitigation for any particular environmental issue

Environmental Impacts

North Texas Municipal Water District's East Fork reuse project will involve the construction of the following facilities:

- A diversion pump station on the East Fork of the Trinity River near U.S. Highway 175.
- A 1,840-acre constructed wetland to improve water quality.
- A conveyance pump station.
- A raw water transmission pipeline from the conveyance pump station to Lake Lavon.
- A discharge structure at Lake Lavon.
- A visitor and education center near the constructed wetland.

Analyses conducted by Alan Plummer Associates, Inc., and Freese and Nichols, Inc., have shown that the East Fork Reuse Project could potentially have the following positive and negative environmental impacts:

- Disturbance of a total of 2,487 acres for construction of the required facilities. Approximately 200 acres of the land disturbed would be existing wetlands, and approximately 6 acres would be "Waters of the United States."
- Creation of a 1,840-acre wetland that will provide significant wildlife habitat.
- Reduction of low streamflows in the East Fork of the Trinity River:
 - The bypass flow proposed for the permit will leave 25.8 cfs in the East Fork of the Trinity River at all times. This is greater than low flows in the stream that existed before the increasing wastewater flows of recent decades.
 - The permitted diversion would maintain flow variability in the East Fork of the Trinity River downstream from the diversion.
 - Based on water quality modeling, the proposed reuse project will improve water quality downstream from the diversion by raising dissolved oxygen levels, as shown in Figure A. For example, under low flow conditions, the dissolved oxygen 10 kilometers upstream from the mouth of the East Fork of the Trinity River would be 6.55 milligrams per liter with the reuse project, compared to 5.29 milligrams per liter without the project. This occurs because the diversion will decrease wastewater loading in the segment and cause the stream to be shallower, improving re-aeration conditions.
 - The proposed reuse project will also improve water quality in the Trinity River downstream from the East Fork by reducing nutrient loads from the East Fork.

- The U.S. Fish and Wildlife Service (USFWS) lists one endangered species (whooping crane) that may exist in Collin County. Collin County is located within the migratory pattern of the whooping cranes, and the cranes may stop in Collin County briefly during migration to and from nesting areas on the Texas coast and breeding grounds in Canada. In Collin County, the East Fork Reuse Project will consist of a pipeline and a discharge structure at Lake Lavon. Because of the temporary nature of the whooping cranes' potential presence in Collin County and the wide range of potential stopover locations, no adverse impacts to whooping cranes are anticipated as a result of the proposed project.
- The USFWS lists one threatened species (bald eagle) that may exist in Kaufman and Collin Counties. In general, bald eagles nest in Texas from October to July and then migrate north, although an occasional pair will remain within a territory year-round. Preferred nesting habitat is large, tall trees along river systems or within one to two miles of a lake or reservoir. Nearby wetland areas (within about one half mile) are necessary for feeding. The East Fork Reuse Project pipeline can be routed to avoid known bald eagle nesting areas. In conjunction with other environmental permitting requirements (e.g., a Section 404 permit), a survey of the wetland site must be conducted to identify potential nesting sites prior to the final project design. No adverse impacts to bald eagles are anticipated as a result of the proposed project.

Table B quantifies potential environmental impacts of the East Fork reuse project.

Figure A
Lower East Fork QUAL-TX Model Results
Dissolved Oxygen (DO) vs. Distance, Summer Conditions
Projected 2050 Flows

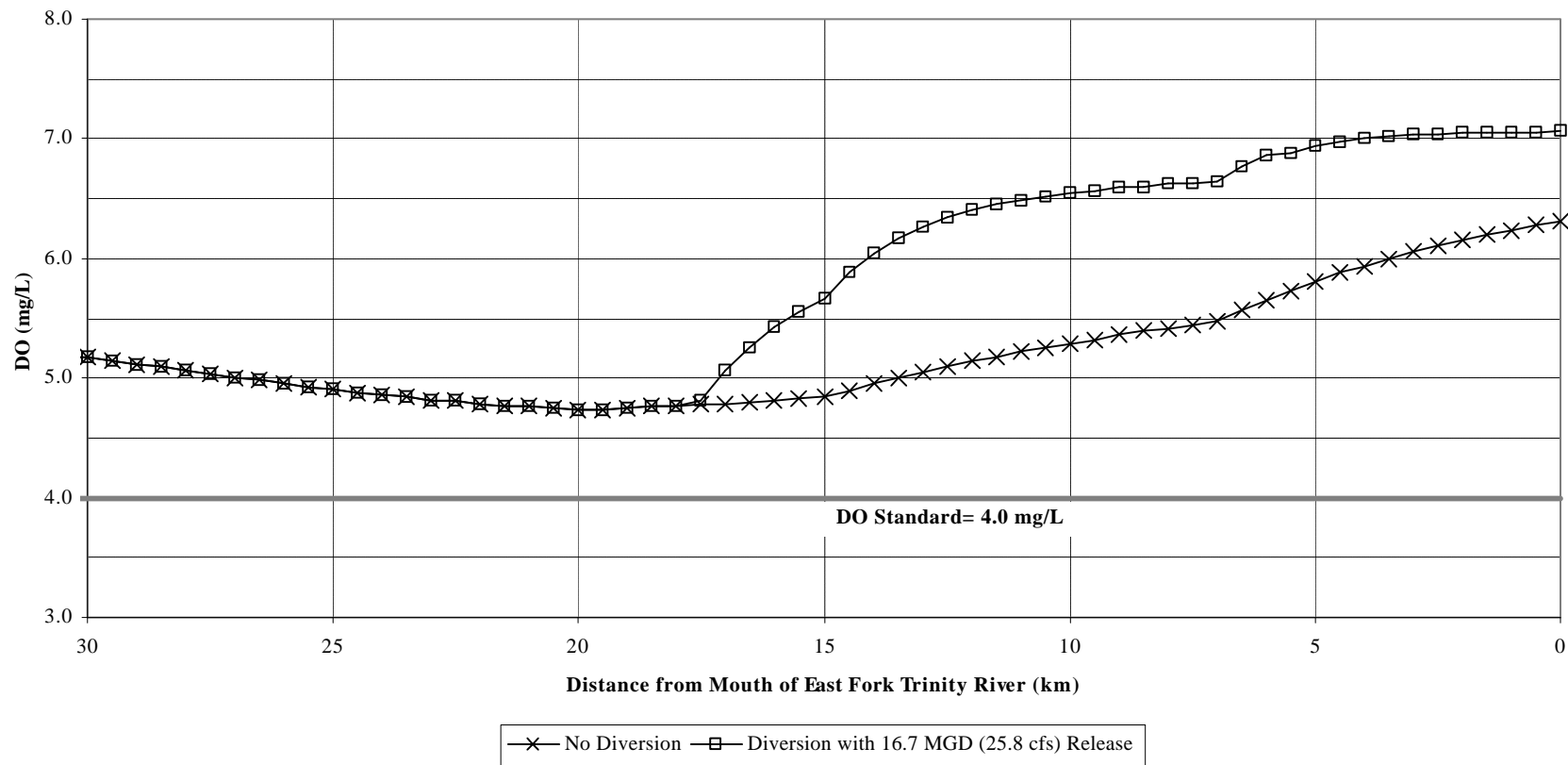


Table B
Quantified Potential Environmental Impacts of NTMWD East Fork Reuse Project

Description	Classification	Quantity	Units	Comment
Land impacted by pipeline and pump station construction	Waters of the United States	6	acres	
	Unclassified	641	acres	
Land impacted by wetland construction	Existing wetlands	200	acres	
	Unclassified	1,640	acres	
New constructed wetland		1,840	acres	Net gain of 1,640 wetland acres.
Endangered/threatened species		2	species	Bald eagle, whooping crane listed by U.S. Fish and Wildlife Service. See text for discussion.

Table R-218
North Texas Municipal Water District
East Fork Reuse Project

Owner North Texas Municipal Water District
Amount 102,000 Ac-Ft/Yr

CONSTRUCTION COSTS

WETLANDS FACILITIES

Wetlands \$35,743,000
Engineering & Contingencies \$12,510,000

Subtotal Wetlands \$48,253,000

TRANSMISSION FACILITIES

Pipeline	Size	Quantity	Unit	Unit Price	Cost
Pipeline	84	235,000	LF	\$ 441	103,635,000
Right of Way Easements	50	270	Acre	\$ 22,000	5,934,000
Engineering & Contingencies					32,871,000

Subtotal Pipeline \$142,440,000

Pump Stations

Pump Stations \$27,788,000
Engineering & Contingencies \$9,726,000

Subtotal Pump Stations \$37,514,000

OTHER FACILITIES

Electrical Power \$1,764,000
Visitors Center \$1,500,000
Engineering & Contingencies \$1,142,000

Subtotal Other \$4,406,000

CONSTRUCTION TOTAL \$232,613,000

Interest During Construction 18 Months \$13,397,000

TOTAL COST \$246,010,000

ANNUAL COSTS (1st 30 years)

Debt Service (6%, 30 years) \$17,872,000
Electricity (\$0.06/kWh) \$3,960,000
Operation and Maintenance \$3,037,000
Total Annual Costs \$24,869,000

UNIT COSTS (Average over 1st 30 years)

Per Acre-Foot \$267
Per 1,000 Gallons \$0.82

UNIT COSTS (after 30 years)

Per Acre-Foot \$69
Per 1,000 Gallons \$0.21

Additions to TWDB Table 11: Potentially Feasible Water Management Strategies

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB						
Major Water Provider Name (If Applicable)	Water User Group Name	Major Water Provider (TWDB Alpha Number)	Water User Group Identifier	Regional Water Planning Group Letter	Sequence Number for Water User Group	City Number for Water User Group	County Number for Water User Group	Basin Number for Water User Group	Type of Water Supply	Regional Water Planning Group of Source	County Number of Source	Basin Number of Source	Specific Source Identifier	Name of Specific Source	Total Capital Cost	Cost for 2000 (Total Annual Cost per Acre-Foot)	Cost for 2010 (Total Annual Cost per Acre-Foot)	Cost for 2020 (Total Annual Cost per Acre-Foot)	Cost for 2030 (Total Annual Cost per Acre-Foot)	Cost for 2040 (Total Annual Cost per Acre-Foot)	Cost for 2050 (Total Annual Cost per Acre-Foot)	Year 2000 Value of Total Supply from Strategy	Year 2010 Value of Total Supply from Strategy	Year 2020 Value of Total Supply from Strategy	Year 2030 Value of Total Supply from Strategy	Year 2040 Value of Total Supply from Strategy	Year 2050 Value of Total Supply from Strategy	Notes	P	County Name	Basin Name		
North Texas Municipal Water District		160		C					4e3	C	129	8	08XX	East Fork Trinity River	\$246,010,000	\$0	\$306	\$258	\$244	\$69	\$69	0	81,400	96,400	102,000	102,000	102,000						
North Texas Municipal Water District	Allen		30012000	C	12	8	43	8	4a	C	43	8		Water Waste Prohibition	\$8,800	\$0	\$264	\$135	\$131	\$134	\$137	0	79	203	223	226	229			Collin	Trinity		
North Texas Municipal Water District	Fairview		30291000	C	291	772	43	8	4a	C	43	8		Water Waste Prohibition	\$5,000	\$0	\$271	\$134	\$98	\$98	\$99	0	5	12	13	14	17			Collin	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	43	8	4a	C	43	8		Water System Audit, Pressure Control, and Leak Detection and Repair	\$0	\$0	\$468	\$148	\$141	\$137	\$133	0	299	1,434	2,164	2,985	3,741		P	Collin	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	43	8	4a	C	43	8		Water Conservation Pricing	\$31,281	\$0	\$18	\$6	\$0	\$0	\$0	0	153	489	738	1,018	1,275		P	Collin	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	43	8	4a	C	43	8		Water Waste Prohibition	\$6,500	\$0	\$112	\$56	\$55	\$56	\$57	0	143	458	692	954	1,195		P	Collin	Trinity		
North Texas Municipal Water District	McKinney		30577000	C	577	379	43	8	4a	C	43	8		Water System Audit, Pressure Control, and Leak Detection and Repair	\$0	\$0	\$730	\$233	\$228	\$224	\$221	0	292	1,252	1,619	1,966	2,296			Collin	Trinity		
North Texas Municipal Water District	McKinney		30577000	C	577	379	43	8	4a	C	43	8		Water Conservation Pricing	\$42,000	\$0	\$15	\$5	\$0	\$0	\$0	0	248	709	916	1,113	1,299			Collin	Trinity		
North Texas Municipal Water District	McKinney		30577000	C	577	379	43	8	4a	C	43	8		Water Waste Prohibition	\$10,000	\$0	\$164	\$79	\$76	\$76	\$77	0	158	472	624	768	904			Collin	Trinity		
North Texas Municipal Water District	Richardson		30747000	C	747	498	43	8	4a	C	43	8		Water Waste Prohibition	\$1,335	\$0	\$689	\$304	\$277	\$266	\$254	0	5	12	14	16	18		P	Collin	Trinity		
North Texas Municipal Water District	Sachse		30784000	C	784	742	43	8	4a	C	43	8		Water Conservation Pricing	\$599	\$0	\$67	\$30	\$0	\$0	\$0	0	1	2	2	2	2		P	Collin	Trinity		
North Texas Municipal Water District	Wylie		30991000	C	991	669	43	8	4a	C	43	8		Water System Audit, Pressure Control, and Leak Detection and Repair	\$0	\$0	\$1,640	\$534	\$505	\$483	\$469	0	32	133	193	264	330		P	Collin	Trinity		
North Texas Municipal Water District	Wylie		30991000	C	991	669	43	8	4a	C	43	8		Water Waste Prohibition	\$4,976	\$0	\$746	\$282	\$229	\$212	\$205	0	7	25	44	65	84		P	Collin	Trinity		
North Texas Municipal Water District	County-Other		30996043	C	996	757	43	5	4a	C	43	5		Water Conservation Pricing	\$927	\$0	\$120	\$3	\$0	\$0	\$0	0	1	23	0	0	0	b		Collin	Sabine		
North Texas Municipal Water District	County-Other		30996043	C	996	757	43	8	4a	C	43	8		Water Conservation Pricing	\$13,170	\$0	\$120	\$3	\$0	\$0	\$0	0	10	340	0	0	0	0	b		Collin	Trinity	
North Texas Municipal Water District	Garland		30334000	C	334	230	57	8	4a	C	57	8		Water Conservation Pricing	\$70,358	\$0	\$22	\$11	\$0	\$0	\$0	0	278	557	557	557	557		P	Dallas	Trinity		
North Texas Municipal Water District	Garland		30334000	C	334	230	57	8	4a	C	57	8		Water Waste Prohibition	\$9,999	\$0	\$1,054	\$521	\$513	\$513	\$513	0	54	114	114	114	114		P	Dallas	Trinity		
North Texas Municipal Water District	Mesquite		30592000	C	592	401	57	8	4a	C	57	8		Water Conservation Pricing	\$61,774	\$0	\$28	\$12	\$0	\$0	\$0	0	191	443	501	557	547			Dallas	Trinity		
North Texas Municipal Water District	Richardson		30747000	C	747	498	57	8	4a	C	57	8		Water Waste Prohibition	\$8,665	\$0	\$689	\$304	\$277	\$266	\$254	0	32	77	85	91	98		P	Dallas	Trinity		
North Texas Municipal Water District	Sachse		30784000	C	784	742	57	8	4a	C	57	8		Water Conservation Pricing	\$18,959	\$0	\$67	\$30	\$0	\$0	\$0	0	25	56	63	70	74		P	Dallas	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	61	8	4a	C	61	8		Water System Audit, Pressure Control, and Leak Detection and Repair	\$0	\$0	\$468	\$148	\$141	\$137	\$133	0	7	23	28	29	31		P	Denton	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	61	8	4a	C	61	8		Water Conservation Pricing	\$580	\$0	\$18	\$6	\$0	\$0	\$0	0	3	8	9	10	11		P	Denton	Trinity		
North Texas Municipal Water District	Frisco		30319000	C	319	221	61	8	4a	C	61	8		Water Waste Prohibition	\$121	\$0	\$112	\$56	\$55	\$56	\$57	0	3	7	9	9	10		P	Denton	Trinity		
North Texas Municipal Water District	Little Elm		30527000	C	527	790	61	8	4a	C	61	8		Water Waste Prohibition	\$5,000	\$0	\$1,327	\$444	\$328	\$317	\$0	0	1	4	7	9	0	b		Denton	Trinity		

Additions to TWDB Table 11: Potentially Feasible Water Management Strategies

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB					
Major Water Provider Name (If Applicable)	Water User Group Name	Major Water Provider (TWDB Alpha Number)	Water User Group Identifier	Regional Water Planning Group Letter	Sequence Number for Water User Group	City Number for Water User Group	County Number for Water User Group	Basin Number for Water User Group	Type of Water Supply	Regional Water Planning Group of Source	County Number of Source	Basin Number of Source	Specific Source Identifier	Name of Specific Source	Total Capital Cost	Cost for 2000 (Total Annual Cost per Acre-Foot)	Cost for 2010 (Total Annual Cost per Acre-Foot)	Cost for 2020 (Total Annual Cost per Acre-Foot)	Cost for 2030 (Total Annual Cost per Acre-Foot)	Cost for 2040 (Total Annual Cost per Acre-Foot)	Cost for 2050 (Total Annual Cost per Acre-Foot)	Year 2000 Value of Total Supply from Strategy	Year 2010 Value of Total Supply from Strategy	Year 2020 Value of Total Supply from Strategy	Year 2030 Value of Total Supply from Strategy	Year 2040 Value of Total Supply from Strategy	Year 2050 Value of Total Supply from Strategy	Notes	P	County Name	Basin Name	
North Texas Municipal Water District	Crandall		30210000	C	210	767	129	8	4a	C	129	8		Water Conservation Pricing	\$14,743	\$0	\$492	\$0	\$0	\$0	\$0	0	4	0	0	0	0	0	b		Kaufman	Trinity
North Texas Municipal Water District	County-Other		30996199	C	996	757	199	5	4a	C	199	5		Water Conservation Pricing	\$3,691	\$0	\$0	\$0	\$0	\$146	\$35	0	0	0	0	2	9	c		Rockwall	Sabine	
North Texas Municipal Water District	County-Other		30996199	C	996	757	199	8	4a	C	199	8		Water Conservation Pricing	\$15,576	\$0	\$0	\$0	\$0	\$146	\$35	0	0	0	0	9	39	c		Rockwall	Trinity	

Notes:

- a) Titles in BOLD are the columns required by TWDB
- b) Various entities are projected to use less than 140 gpcd in later decades (Collin County-Other in 2030, Little Elm in 2050, and Crandall in 2020). No water savings calculated for these decades and later.
- c) Rockwall County-Other does not have a projected water need until 2050. No water savings calculated until 2040.

Additions to TWDB Table 12: Recommended Management Strategies by City and Category

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	Notes	W	X	Partial	County Name	Basin Name
Water User Group Name	Water User Group Identifier	Regional Water Planning Group Letter	Sequence Number for Water User Group	City Number for Water User Group	County Number for Water User Group	Basin Number for Water User Group	Name of Water Management Strategy	Type of Water Supply	Major Water Provider Number (TWDB Alpha Number)	Regional Water Planning Group of Source	County Number of Source	Basin Number of Source	Specific Source Identifier	Name of Specific Source	Total Capital Cost	Year 2000 Value of Total Supply from Strategy	Year 2010 Value of Total Supply from Strategy	Year 2020 Value of Total Supply from Strategy	Year 2030 Value of Total Supply from Strategy	Year 2040 Value of Total Supply from Strategy	Year 2050 Value of Total Supply from Strategy		Exception from Meeting Needs Due To	Scenario Number for Meeting Long-Term Needs (Blank if only one listed)			
Allen	30012000	C	12	8	43	8	Water Waste Prohibition	4a		C	43	8			\$8,800	0	79	203	223	226	229					Collin	Trinity
Fairview	30291000	C	291	772	43	8	Water Waste Prohibition	4a		C	43	8			\$5,000	0	5	12	13	14	17					Collin	Trinity
Frisco	30319000	C	319	221	43	8	Water System Audit, Pressure Control, and Leak Detection and Repair	4a		C	43	8			\$0	0	299	1,434	2,164	2,985	3,741				P	Collin	Trinity
Frisco	30319000	C	319	221	43	8	Water Conservation Pricing	4a		C	43	8			\$31,281	0	153	489	738	1,018	1,275				P	Collin	Trinity
Frisco	30319000	C	319	221	43	8	Water Waste Prohibition	4a		C	43	8			\$6,500	0	143	458	692	954	1,195				P	Collin	Trinity
McKinney	30577000	C	577	379	43	8	Water System Audit, Pressure Control, and Leak Detection and Repair	4a		C	43	8			\$0	0	292	1,252	1,619	1,966	2,296					Collin	Trinity
McKinney	30577000	C	577	379	43	8	Water Conservation Pricing	4a		C	43	8			\$42,000	0	248	709	916	1,113	1,299					Collin	Trinity
McKinney	30577000	C	577	379	43	8	Water Waste Prohibition	4a		C	43	8			\$10,000	0	158	472	624	768	904					Collin	Trinity
Richardson	30747000	C	747	498	43	8	Water Waste Prohibition	4a		C	43	8			\$1,335	0	5	12	14	16	18				P	Collin	Trinity
Sachse	30784000	C	784	742	43	8	Water Conservation Pricing	4a		C	43	8			\$599	0	1	2	2	2	2				P	Collin	Trinity
Wylie	30991000	C	991	669	43	8	Water System Audit, Pressure Control, and Leak Detection and Repair	4a		C	43	8			\$0	0	32	133	193	264	330				P	Collin	Trinity
Wylie	30991000	C	991	669	43	8	Water Waste Prohibition	4a		C	43	8			\$4,976	0	7	25	44	65	84				P	Collin	Trinity
County-Other	30996043	C	996	757	43	5	Water Conservation Pricing	4a		C	43	5			\$927	0	1	23	0	0	0	b				Collin	Sabine
County-Other	30996043	C	996	757	43	8	Water Conservation Pricing	4a		C	43	8			\$13,170	0	10	340	0	0	0	b				Collin	Trinity
Garland	30334000	C	334	230	57	8	Water Conservation Pricing	4a		C	57	8			\$70,358	0	278	557	557	557	557				P	Dallas	Trinity
Garland	30334000	C	334	230	57	8	Water Waste Prohibition	4a		C	57	8			\$9,999	0	54	114	114	114	114				P	Dallas	Trinity
Mesquite	30592000	C	592	401	57	8	Water Conservation Pricing	4a		C	57	8			\$61,774	0	191	443	501	557	547					Dallas	Trinity
Richardson	30747000	C	747	498	57	8	Water Waste Prohibition	4a		C	57	8			\$8,665	0	32	77	85	91	98				P	Dallas	Trinity
Sachse	30784000	C	784	742	57	8	Water Conservation Pricing	4a		C	57	8			\$18,959	0	25	56	63	70	74				P	Dallas	Trinity
Frisco	30319000	C	319	221	61	8	Water System Audit, Pressure Control, and Leak Detection and Repair	4a		C	61	8			\$0	0	7	23	28	29	31				P	Denton	Trinity

Additions to TWDB Table 12: Recommended Management Strategies by City and Category

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	Notes	W	X	Partial	County Name	Basin Name
Water User Group Name	Water User Group Identifier	Regional Water Planning Group Letter	Sequence Number for Water User Group	City Number for Water User Group	County Number for Water User Group	Basin Number for Water User Group	Name of Water Management Strategy	Type of Water Supply	Major Water Provider Number (TWDB Alpha Number)	Regional Water Planning Group of Source	County Number of Source	Basin Number of Source	Specific Source Identifier	Name of Specific Source	Total Capital Cost	Year 2000 Value of Total Supply from Strategy	Year 2010 Value of Total Supply from Strategy	Year 2020 Value of Total Supply from Strategy	Year 2030 Value of Total Supply from Strategy	Year 2040 Value of Total Supply from Strategy	Year 2050 Value of Total Supply from Strategy		Exception from Meeting Needs Due To	Scenario Number for Meeting Long-Term Needs (Blank if only one listed)			
Frisco	30319000	C	319	221	61	8	Water Conservation Pricing	4a		C	61	8			\$580	0	3	8	9	10	11				P	Denton	Trinity
Frisco	30319000	C	319	221	61	8	Water Waste Prohibition	4a		C	61	8			\$121	0	3	7	9	9	10				P	Denton	Trinity
Little Elm	30527000	C	527	790	61	8	Water Waste Prohibition	4a		C	61	8			\$5,000	0	1	4	7	9	0	b				Denton	Trinity
Crandall	30210000	C	210	767	129	8	Water Conservation Pricing	4a		C	129	8			\$14,743	0	4	0	0	0	0	b				Kaufman	Trinity
County-Other	30996199	C	996	757	199	5	Water Conservation Pricing	4a		C	199	5			\$3,691	0	0	0	0	2	9	c				Rockwall	Sabine
County-Other	30996199	C	996	757	199	8	Water Conservation Pricing	4a		C	199	8			\$15,576	0	0	0	0	9	39	c				Rockwall	Trinity

Notes:

- a) Titles in BOLD are the columns required by TWDB
- b) Various entities are projected to use less than 140 gpcd in later decades (Collin County-Other in 2030, Little Elm in 2050, and Crandall in 2020). No water savings calculated for these decades and later.
- c) Rockwall County-Other does not have a projected water need until 2050. No water savings calculated until 2040.

Additions to TWDB Table 13: Recommended Management Strategies by Major Provider of Municipal and Manufacturing Water

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
Major Water Provider Name	Major Water Provider Number (TWDB Alpha Number)	Basin Number for Basin of Use	Type of Water Supply	Regional Water Planning Group of Source	County Number of Source (Groundwater Supplies only)	Basin Number of Source	Name of Water Management Strategy	Specific Source Identifier	Name of Specific Source	Total Capital Cost	Year 2000 Value of Total Supply from Strategy	Year 2010 Value of Total Supply from Strategy	Year 2020 Value of Total Supply from Strategy	Year 2030 Value of Total Supply from Strategy	Year 2040 Value of Total Supply from Strategy	Year 2050 Value of Total Supply from Strategy	Exception from Meeting Needs Due To	Scenario Number for Meeting Long-Term Needs (Blank if only one listed)	County Name of Source	Basin Name of Source
North Texas Municipal Water District	160	8	4e3	C		8	East Fork Reuse Project	08XX	East Fork Trinity River	\$246,010,000	0	81,400	96,400	102,000	102,000	102,000			Kaufman	Trinity

Note:
Titles in BOLD are the columns required by TWDB