TCEQ Interoffice Memorandum

TO: Office of the Chief Clerk
Texas Commission on Environmental Quality

THRU: Chris Kozlowski, Team Leader
Water Rights Permitting Team

FROM: Sarah Henderson, Project Manager
Water Rights Permitting Team

DATE: July 31, 2020

SUBJECT: City of Dallas
WRPERM 13682
CN600331730, RN110986320
Application No. 13682 for a Water Use Permit
Texas Water Code §§ 11.121, 11.042, Requiring Limited Mailed Notice
Elm Fork Trinity River, Trinity River Basin
Dallas County

The application and fees were received on February 25, 2020. Additional information was received on July 9, 2020. The application was declared administratively complete and accepted for filing with the Office of the Chief Clerk on July 31, 2020. Limited mailed notice to the downstream water right holders of record within the Trinity River Basin is required pursuant to Title 30 Texas Administrative Code (TAC) § 295.161(a) and notice to Texas Parks and Wildlife and the Public Interest Council is required pursuant to § 295.161(c).

All fees have been paid and the application is sufficient for filing.

Sarah E Henderson

_____
Sarah Henderson, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

OCC Mailed Notice Required ☑**YES** ☐**NO**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 31, 2020

Mr. Denis Qualls **VIA E-MAIL**
Dallas Water Utilities Planning
1500 Marilla Street #4AS
Dallas, TX 75201-6318

RE: City of Dallas
WRPERM 13682
CN600331730, RN110986320
Application No. 13682 for a Water Use Permit
Texas Water Code §§ 11.121, 11.042, Requiring Limited Mailed Notice
Elm Fork Trinity River, Trinity River Basin
Dallas County

Dear Mr. Qualls:

This acknowledges receipt, on July 9, 2020, of additional information.

The application was declared administratively complete and filed with the Office of the Chief Clerk on July 31, 2020. Staff will continue processing the application for consideration by the Executive Director.

Please be advised that additional information may be requested during the technical review phase of the application process.

If you have any questions concerning this matter please contact me via email at sarah.henderson@tceq.texas.gov or by telephone at (512) 239-2535.

Sincerely,

Sarah E Henderson

Sarah Henderson, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

dallas water utilities
city of dallas

July 9, 2020

Sarah E. Henderson
Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section
P.O. Box 13087
Austin, Texas 78711-3087

Re: Response to Request for Information
WRPERM 13682, CN 600331730, RN 110986320

Dear Ms. Henderson:

Thank you for the acknowledgement of receipt and request for information letter dated June 10, 2020. Please accept the following in response to your request for information:

1. *Provide data or information that supports the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan, evaluates conservation as an alternative to the proposed appropriations, and evaluates any other feasible alternatives to the appropriations, and evaluates other feasible alternative to new water development, pursuant to Title 20 Texas Administrative Code (TAC) § 188.7.*

   The requested bed and banks authorization to convey Dallas' Elm Fork Water Treatment Plant (WTP) return flows to Dallas' Bachman WTP is a conservation measure. This project falls within Section 5.3 "Leak Detection, Repairs and Control of Unaccounted for Water" and section 5.6 "City Leadership and Commitment Measures" of the *City of Dallas 2019 Water Conservation Plan.*

   A recent water quality improvement project at Dallas' Elm Fork WTP included a new filter complex. Due to space considerations at the Elm Fork WTP site, the residuals lagoon operations were moved offsite, approximately one-half mile east. Prior to the water quality improvement project, the residual decant water from the lagoons was sent back to the headworks of the Elm Fork WTP to maximize the use of raw water diverted from the Elm Fork. The residual decant can no longer be returned to the headworks of the Elm Fork WTP as a result of the water quality improvement project. To continue maximizing the use of the originally diverted water, the Elm Fork WTP residual decant waters will be conveyed to the Bachman WTP headworks via the bed and banks of the Elm Fork of the Trinity River.

2. *Confirm the requested discharge point is located in the Preston Witt Original Survey Abstract 1156. Staff has identified the discharge point as being in the W. Perry Original Survey, Abstract No. 1154.*

   Worksheet 4.1 Discharge Point Information Sheet paragraph "f." reads "Location Point: In the Preston Witt Original Survey No. NA, Abstract No. 1156, Dallas County, Texas" is incorrect.

   The corrected Paragraph "f." reads "Location Point: In the Weston Perry Original Survey No. NA, Abstract No. 1152, Dallas County, Texas."

Please do not hesitate to contact me if you have any additional questions.

Sincerely,

Denis W. Qualls, P.E., D.WRE.
Senior Program Manager, Planning

cc: Randal B. Wilburn, Gilbert Wilburn, PPLC
Terry S. Lowery, Director, Dallas Water Utilities
Richard Wagner, P.E. Assistant Director Business Operations, Dallas Water Utilities

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 10, 2020

Mr. Denis Qualls **VIA E-MAIL**
Dallas Water Utilities Planning
1500 Marilla Street #4AS
Dallas, TX 75201-6318

RE: City of Dallas
WRPERM 13682; CN600331730, RN110986320
Application No. 13682 for a Water Use Permit
Texas Water Code §§ 11.121, 11.042, Requiring Limited Mailed Notice
Elm Fork Trinity River, Trinity River Basin
Dallas County

Dear Mr. Qualls:

This acknowledges receipt, on February 25, 2020, of the referenced water use permit application and fees in the amount of $5,712.50 (Receipt No. M015438, copy attached).

Additional information is required before the application can be declared administratively complete.

1. Provide data or information that supports the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan, evaluates conservation as an alternative to the proposed appropriation, and evaluates any other feasible alternative to new water development, pursuant to Title 30 Texas Administrative Code (TAC) § 288.7.

2. Confirm the requested discharge point is located in the Preston Witt Original Survey Abstract 1156. Staff has identified the discharge point as being in the W. Perry Original Survey, Abstract No. 1152.

Please provide the requested information by July 10, 2020 or the application may be returned pursuant to 30 TAC § 281.18.

If you have any questions concerning this matter, please contact me via email at sarah.henderson@tceq.texas.gov or by telephone at (512) 239-2535.

Sincerely,

Sarah E Henderson

Sarah Henderson, Project Manager
Water Rights Permitting Team
Water Rights Permitting and Availability Section

Attachment

Basis2 Receipt Report by Endorsement Number

JUN-04-20 08:17 AM

Acct. #: WUP **Account Name:** WATER USE PERMITS

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
NEW	M015438		DALLAS, CITY OF	CK	1316134		BS00079047	25-FEB-20	$5712.50

CITY OF DALLAS
INDIRECT WATER REUSE ACCOUNTING PLAN SUMMARY

CITY OF DALLAS ELM FORK WTP RETURN FLOW

The City of Dallas Elm Fork Water Treatment Plant (EFWTP) upgrade allows the discharge of return flows from the disposal lagoon cells of the plant to the Elm Fork of the Trinity River of the Trinity River Basin. The bed and banks authorization enables the diversion of the released water the same day at Dallas's Bachman Water Treatment Plant.

Column 1.1,1.2,1.3: These columns represent the year, month, and day when the data was logged.

Column 1.4: EFWTP return flows effluent Discharge (MGD) - EFWTP return flows measured and discharged daily into Elm Fork Trinity River, Segment 822 of the Trinity River Basin.

Column 1.5: EFWTP Return Flows Discharge Carriage losses (MG)
Estimated losses of EFWTP return flows daily discharge of treated effluent in million gallons, occurring while the treated effluent is flowing down the Elm Fork of the Trinity River channel to the Bachman diversion point. The return flow carriage loss is calculated by multiplying effluent discharge in column 1.4 by 0.89% carriage loss.

Column 1.6: Net EFWTP Return Flows Effluent Discharge Available for Bachman WTP Use (MG) - Amount of EFWTP daily return flows of treated effluent, in million gallons available for diversion at the Bachman WTP after carriage losses.

Column 1.7: Bachman WTP Daily Diversion (MG): This column represents Bachman WTP daily diversion and verifies the Bachman WTP operation.

Column 1.8: Net EFWTP Return Flows Backwash Effluent Discharge Diverted at Bachman Plant (MG): This column identifies the usage of EFWTP return flows discharge at Bachman WTP daily diversion.

INDIRECT WATER REUSE ACCOUNTING PLAN

CITY OF DALLAS ELM FROK WTP RETURN FLOW ACCOUNTING PLAN

1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Year	Month	Day	MG	MG	MG	MG	MG
			City of Dallas Elm Fork WTP Return Flow Discharge	Elm Fork WTP Return Flow Discharge Carriage Losses	Net Elm Fork WTP Return Flow Discharge Carriage Losses	Bachman WTP Diversion	Elm Fork WWTP Effluent Diverted at Bachman Plant
			Effluent Input	Col (1.4*0.0089)	Col(1.4-1.5)	Bachman WTP Daily Diversion (Input)	Bachman Effluent Reuse
2018	JAN	1	1.00	0.01	0.99	61.17	0.99
2018	JAN	2	2.00	0.02	1.98	87.2	1.98
2018	JAN	3	1.00	0.01	0.99	99.45	0.99
2018	JAN	4	4.00	0.04	3.96	90.14	3.96
2018	JAN	5	1.00	0.01	0.99	81.33	0.99
2018	JAN	6	1.00	0.01	0.99	85.24	0.99
2018	JAN	7	5.00	0.04	4.96	79.86	4.96
2018	JAN	8	1.00	0.01	0.99	112.67	0.99
2018	JAN	9	3.00	0.03	2.97	137.63	2.97
2018	JAN	10	1.00	0.01	0.99	122.49	0.99
2018	JAN	11	5.00	0.04	4.96	104.42	4.96
2018	JAN	12	1.00	0.01	0.99	87.47	0.99
2018	JAN	13	1.00	0.01	0.99	64.82	0.99
2018	JAN	14	1.00	0.01	0.99	64.29	0.99
2018	JAN	15	1.00	0.01	0.99	66.77	0.99
2018	JAN	16	1.00	0.01	0.99	0	0.00
2018	JAN	17	1.00	0.01	0.99	0	0.00
2018	JAN	18	1.00	0.01	0.99	0	0.00
2018	JAN	19	1.00	0.01	0.99	0	0.00
2018	JAN	20	1.00	0.01	0.99	0	0.00
2018	JAN	21	1.00	0.01	0.99	0	0.00

2018	JAN	22	1.00	0.01	0.99	127.28	0.99
2018	JAN	23	1.00	0.01	0.99	127.5	0.99
2018	JAN	24	1.00	0.01	0.99	124.25	0.99
2018	JAN	25	1.00	0.01	0.99	85.83	0.99
2018	JAN	26	1.00	0.01	0.99	65.46	0.99
2018	JAN	27	1.00	0.01	0.99	64.95	0.99
2018	JAN	28	1.00	0.01	0.99	64.49	0.99
2018	JAN	29	1.00	0.01	0.99	95.69	0.99
2018	JAN	30	1.00	0.01	0.99	118.48	0.99
2018	JAN	31	1.00	0.01	0.99	136.12	0.99
2018	FEB	1	1.00	0.01	0.99	138.07	0.99
2018	FEB	2	1.00	0.01	0.99	89.64	0.99
2018	FEB	3	1.00	0.01	0.99	107.32	0.99
2018	FEB	4	1.00	0.01	0.99	112.95	0.99
2018	FEB	5	1.00	0.01	0.99	111.37	0.99
2018	FEB	6	1.00	0.01	0.99	102.53	0.99
2018	FEB	7	1.00	0.01	0.99	102.67	0.99
2018	FEB	8	1.00	0.01	0.99	111.8	0.99
2018	FEB	9	1.00	0.01	0.99	116.4	0.99
2018	FEB	10	1.00	0.01	0.99	102.47	0.99
2018	FEB	11	1.00	0.01	0.99	116.37	0.99
2018	FEB	12	1.00	0.01	0.99	121.83	0.99
2018	FEB	13	1.00	0.01	0.99	132.46	0.99
2018	FEB	14	1.00	0.01	0.99	132.4	0.99
2018	FEB	15	1.00	0.01	0.99	134.75	0.99
2018	FEB	16	1.00	0.01	0.99	134.53	0.99
2018	FEB	17	1.00	0.01	0.99	114.01	0.99
2018	FEB	18	1.00	0.01	0.99	115.63	0.99
2018	FEB	19	1.00	0.01	0.99	130.13	0.99
2018	FEB	20	1.00	0.01	0.99	124.7	0.99
2018	FEB	21	1.00	0.01	0.99	124.35	0.99
2018	FEB	22	1.00	0.01	0.99	129.87	0.99
2018	FEB	23	1.00	0.01	0.99	133.61	0.99
2018	FEB	24	1.00	0.01	0.99	133.71	0.99

2018	FEB	25	1.00	0.01	0.99	133.35	0.99
2018	FEB	26	1.00	0.01	0.99	131.06	0.99
2018	FEB	27	1.00	0.01	0.99	130.93	0.99
2018	FEB	28	1.00	0.01	0.99	130.77	0.99
2018	FEB	29					
2018	MAR	1	1.00	0.01	0.99	96.62	0.99
2018	MAR	2	1.00	0.01	0.99	96.44	0.99
2018	MAR	3	1.00	0.01	0.99	106.44	0.99
2018	MAR	4	1.00	0.01	0.99	127.04	0.99
2018	MAR	5	1.00	0.01	0.99	128.09	0.99
2018	MAR	6	1.00	0.01	0.99	99.48	0.99
2018	MAR	7	1.00	0.01	0.99	86.07	0.99
2018	MAR	8	1.00	0.01	0.99	65.05	0.99
2018	MAR	9	1.00	0.01	0.99	84.04	0.99
2018	MAR	10	1.00	0.01	0.99	96.74	0.99
2018	MAR	11	1.00	0.01	0.99	73.84	0.99
2018	MAR	12	1.00	0.01	0.99	62.24	0.99
2018	MAR	13	1.00	0.01	0.99	62.36	0.99
2018	MAR	14	1.00	0.01	0.99	62.41	0.99
2018	MAR	15	1.00	0.01	0.99	62.25	0.99
2018	MAR	16	1.00	0.01	0.99	62.06	0.99
2018	MAR	17	1.00	0.01	0.99	62.28	0.99
2018	MAR	18	1.00	0.01	0.99	57.32	0.99
2018	MAR	19	1.00	0.01	0.99	58.03	0.99
2018	MAR	20	1.00	0.01	0.99	77.79	0.99
2018	MAR	21	1.00	0.01	0.99	61.3	0.99
2018	MAR	22	1.00	0.01	0.99	61.51	0.99
2018	MAR	23	1.00	0.01	0.99	64.72	0.99
2018	MAR	24	1.00	0.01	0.99	81.65	0.99
2018	MAR	25	1.00	0.01	0.99	72.06	0.99
2018	MAR	26	1.00	0.01	0.99	81.35	0.99
2018	MAR	27	1.00	0.01	0.99	63.79	0.99
2018	MAR	28	1.00	0.01	0.99	60.68	0.99
2018	MAR	29	1.00	0.01	0.99	61.44	0.99

2018	MAR	30	1.00	0.01	0.99	61.51	0.99
2018	MAR	31	1.00	0.01	0.99	76.87	0.99
2018	Apr	1	1.00	0.01	0.99	66.3	0.99
2018	Apr	2	1.00	0.01	0.99	71.42	0.99
2018	Apr	3	1.00	0.01	0.99	61.09	0.99
2018	Apr	4	1.00	0.01	0.99	61.31	0.99
2018	Apr	5	1.00	0.01	0.99	61.18	0.99
2018	Apr	6	1.00	0.01	0.99	61.5	0.99
2018	Apr	7	1.00	0.01	0.99	61.6	0.99
2018	Apr	8	1.00	0.01	0.99	66.48	0.99
2018	Apr	9	1.00	0.01	0.99	61.22	0.99
2018	Apr	10	1.00	0.01	0.99	69.92	0.99
2018	Apr	11	1.00	0.01	0.99	75.33	0.99
2018	Apr	12	1.00	0.01	0.99	61.07	0.99
2018	Apr	13	1.00	0.01	0.99	60.85	0.99
2018	Apr	14	1.00	0.01	0.99	61.33	0.99
2018	Apr	15	1.00	0.01	0.99	61.17	0.99
2018	Apr	16	1.00	0.01	0.99	91.55	0.99
2018	Apr	17	1.00	0.01	0.99	100.09	0.99
2018	Apr	18	1.00	0.01	0.99	61.4	0.99
2018	Apr	19	1.00	0.01	0.99	61.14	0.99
2018	Apr	20	1.00	0.01	0.99	61.37	0.99
2018	Apr	21	1.00	0.01	0.99	51.62	0.99
2018	Apr	22	1.00	0.01	0.99	50.85	0.99
2018	Apr	23	1.00	0.01	0.99	50.53	0.99
2018	Apr	24	1.00	0.01	0.99	50.96	0.99
2018	Apr	25	1.00	0.01	0.99	51.31	0.99
2018	Apr	26	1.00	0.01	0.99	51.43	0.99
2018	Apr	27	1.00	0.01	0.99	60.17	0.99
2018	Apr	28	1.00	0.01	0.99	80.93	0.99
2018	Apr	29	1.00	0.01	0.99	80.51	0.99
2018	Apr	30	1.00	0.01	0.99	72.35	0.99
2018	May	1	1.00	0.01	0.99	70.06	0.99
2018	May	2	1.00	0.01	0.99	53.68	0.99

2018	May	3	1.00	0.01	0.99	49.03	0.99
2018	May	4	1.00	0.01	0.99	45.27	0.99
2018	May	5	1.00	0.01	0.99	62.32	0.99
2018	May	6	1.00	0.01	0.99	100.58	0.99
2018	May	7	1.00	0.01	0.99	100.73	0.99
2018	May	8	1.00	0.01	0.99	100.45	0.99
2018	May	9	1.00	0.01	0.99	100.23	0.99
2018	May	10	1.00	0.01	0.99	100.4	0.99
2018	May	11	1.00	0.01	0.99	100.95	0.99
2018	May	12	1.00	0.01	0.99	126.98	0.99
2018	May	13	1.00	0.01	0.99	127.35	0.99
2018	May	14	1.00	0.01	0.99	100.87	0.99
2018	May	15	1.00	0.01	0.99	119.62	0.99
2018	May	16	1.00	0.01	0.99	105.94	0.99
2018	May	17	1.00	0.01	0.99	82.68	0.99
2018	May	18	1.00	0.01	0.99	110.09	0.99
2018	May	19	1.00	0.01	0.99	99.56	0.99
2018	May	20	1.00	0.01	0.99	77.85	0.99
2018	May	21	1.00	0.01	0.99	124.56	0.99
2018	May	22	1.00	0.01	0.99	116.44	0.99
2018	May	23	1.00	0.01	0.99	100.79	0.99
2018	May	24	1.00	0.01	0.99	90.11	0.99
2018	May	25	1.00	0.01	0.99	81.46	0.99
2018	May	26	1.00	0.01	0.99	88.54	0.99
2018	May	27	1.00	0.01	0.99	89.99	0.99
2018	May	28	1.00	0.01	0.99	77.27	0.99
2018	May	29	1.00	0.01	0.99	79.3	0.99
2018	May	30	1.00	0.01	0.99	120.5	0.99
2018	May	31	1.00	0.01	0.99	101.38	0.99
2018	Jun	1	1.00	0.01	0.99	125.26	0.99
2018	Jun	2	1.00	0.01	0.99	110.57	0.99
2018	Jun	3	1.00	0.01	0.99	75.18	0.99
2018	Jun	4	1.00	0.01	0.99	67.17	0.99
2018	Jun	5	1.00	0.01	0.99	75.17	0.99

2018	Jun	6	1.00	0.01	0.99	75.26	0.99
2018	Jun	7	1.00	0.01	0.99	64.16	0.99
2018	Jun	8	1.00	0.01	0.99	88.69	0.99
2018	Jun	9	1.00	0.01	0.99	99.11	0.99
2018	Jun	10	1.00	0.01	0.99	74.91	0.99
2018	Jun	11	1.00	0.01	0.99	87.38	0.99
2018	Jun	12	1.00	0.01	0.99	101.44	0.99
2018	Jun	13	1.00	0.01	0.99	100.76	0.99
2018	Jun	14	1.00	0.01	0.99	104.67	0.99
2018	Jun	15	1.00	0.01	0.99	100.04	0.99
2018	Jun	16	1.00	0.01	0.99	100.11	0.99
2018	Jun	17	1.00	0.01	0.99	129.48	0.99
2018	Jun	18	1.00	0.01	0.99	112.28	0.99
2018	Jun	19	1.00	0.01	0.99	100.98	0.99
2018	Jun	20	1.00	0.01	0.99	101.25	0.99
2018	Jun	21	1.00	0.01	0.99	101.11	0.99
2018	Jun	22	1.00	0.01	0.99	100.53	0.99
2018	Jun	23	1.00	0.01	0.99	79.77	0.99
2018	Jun	24	1.00	0.01	0.99	90.77	0.99
2018	Jun	25	1.00	0.01	0.99	75.76	0.99
2018	Jun	26	1.00	0.01	0.99	134.28	0.99
2018	Jun	27	1.00	0.01	0.99	146.48	0.99
2018	Jun	28	1.00	0.01	0.99	135.82	0.99
2018	Jun	29	1.00	0.01	0.99	125.07	0.99
2018	Jun	30	1.00	0.01	0.99	137.53	0.99
2018	July	1	1.00	0.01	0.99	121.34	0.99
2018	July	2	1.00	0.01	0.99	127.51	0.99
2018	July	3	1.00	0.01	0.99	147.15	0.99
2018	July	4	1.00	0.01	0.99	120.85	0.99
2018	July	5	1.00	0.01	0.99	110.57	0.99
2018	July	6	1.00	0.01	0.99	120.01	0.99
2018	July	7	1.00	0.01	0.99	107.32	0.99
2018	July	8	1.00	0.01	0.99	81.02	0.99
2018	July	9	1.00	0.01	0.99	81.16	0.99

2018	July	10	1.00	0.01	0.99	80.5	0.99
2018	July	11	1.00	0.01	0.99	75.92	0.99
2018	July	12	1.00	0.01	0.99	66.21	0.99
2018	July	13	1.00	0.01	0.99	87.22	0.99
2018	July	14	1.00	0.01	0.99	100.13	0.99
2018	July	15	1.00	0.01	0.99	102.94	0.99
2018	July	16	1.00	0.01	0.99	120.89	0.99
2018	July	17	1.00	0.01	0.99	120.6	0.99
2018	July	18	1.00	0.01	0.99	109.72	0.99
2018	July	19	1.00	0.01	0.99	84.35	0.99
2018	July	20	1.00	0.01	0.99	97.7	0.99
2018	July	21	1.00	0.01	0.99	92.08	0.99
2018	July	22	1.00	0.01	0.99	81.19	0.99
2018	July	23	1.00	0.01	0.99	88.99	0.99
2018	July	24	1.00	0.01	0.99	114.07	0.99
2018	July	25	1.00	0.01	0.99	113.64	0.99
2018	July	26	1.00	0.01	0.99	101.61	0.99
2018	July	27	1.00	0.01	0.99	103.38	0.99
2018	July	28	1.00	0.01	0.99	120.53	0.99
2018	July	29	1.00	0.01	0.99	101.52	0.99
2018	July	30	1.00	0.01	0.99	100.88	0.99
2018	July	31	1.00	0.01	0.99	110.86	0.99
2018	Aug	1	1.00	0.01	0.99	100.75	0.99
2018	Aug	2	1.00	0.01	0.99	100.62	0.99
2018	Aug	3	1.00	0.01	0.99	90.89	0.99
2018	Aug	4	1.00	0.01	0.99	101.25	0.99
2084	Aug	5	1.00	0.01	0.99	101.46	0.99
2085	Aug	6	1.00	0.01	0.99	100.65	0.99
2086	Aug	7	1.00	0.01	0.99	100.75	0.99
2087	Aug	8	1.00	0.01	0.99	100.32	0.99
2088	Aug	9	1.00	0.01	0.99	101.09	0.99
2089	Aug	10	1.00	0.01	0.99	101.76	0.99
2090	Aug	11	1.00	0.01	0.99	80.75	0.99
2091	Aug	12	1.00	0.01	0.99	93.11	0.99

2092	Aug	13	1.00	0.01	0.99	104.33	0.99
2093	Aug	14	1.00	0.01	0.99	120.15	0.99
2094	Aug	15	1.00	0.01	0.99	87.62	0.99
2095	Aug	16	1.00	0.01	0.99	97.71	0.99
2096	Aug	17	1.00	0.01	0.99	95.27	0.99
2097	Aug	18	1.00	0.01	0.99	77.63	0.99
2098	Aug	19	1.00	0.01	0.99	60.33	0.99
2018	Aug	20	1.00	0.01	0.99	90.59	0.99
2018	Aug	21	1.00	0.01	0.99	119.7	0.99
2018	Aug	22	1.00	0.01	0.99	101.96	0.99
2018	Aug	23	1.00	0.01	0.99	91.14	0.99
2018	Aug	24	1.00	0.01	0.99	79.86	0.99
2018	Aug	25	1.00	0.01	0.99	102.77	0.99
2018	Aug	26	1.00	0.01	0.99	101.59	0.99
2018	Aug	27	1.00	0.01	0.99	94.38	0.99
2018	Aug	28	1.00	0.01	0.99	111.49	0.99
2018	Aug	29	1.00	0.01	0.99	113.34	0.99
2018	Aug	30	1.00	0.01	0.99	86.75	0.99
2018	Aug	31	1.00	0.01	0.99	89.81	0.99
2018	Sept	1	1.00	0.01	0.99	106.68	0.99
2018	Sept	2	1.00	0.01	0.99	81.47	0.99
2018	Sept	3	1.00	0.01	0.99	101.98	0.99
2018	Sept	4	1.00	0.01	0.99	120.49	0.99
2018	Sept	5	1.00	0.01	0.99	102.93	0.99
2018	Sept	6	1.00	0.01	0.99	79.87	0.99
2018	Sept	7	1.00	0.01	0.99	59.83	0.99
2018	Sept	8	1.00	0.01	0.99	60.21	0.99
2018	Sept	9	1.00	0.01	0.99	60.09	0.99
2018	Sept	10	1.00	0.01	0.99	60.96	0.99
2018	Sept	11	1.00	0.01	0.99	60.34	0.99
2018	Sept	12	1.00	0.01	0.99	63.71	0.99
2018	Sept	13	1.00	0.01	0.99	84.8	0.99
2018	Sept	14	1.00	0.01	0.99	79.65	0.99
2018	Sept	15	1.00	0.01	0.99	79.84	0.99

2018	Sept	16	1.00	0.01	0.99	81.52	0.99
2018	Sept	17	1.00	0.01	0.99	114.09	0.99
2018	Sept	18	1.00	0.01	0.99	90.96	0.99
2018	Sept	19	1.00	0.01	0.99	99.89	0.99
2018	Sept	20	1.00	0.01	0.99	75.04	0.99
2018	Sept	21	1.00	0.01	0.99	53.34	0.99
2018	Sept	22	1.00	0.01	0.99	55.02	0.99
2018	Sept	23	1.00	0.01	0.99	78.58	0.99
2018	Sept	24	1.00	0.01	0.99	80.92	0.99
2018	Sept	25	1.00	0.01	0.99	83.29	0.99
2018	Sept	26	1.00	0.01	0.99	67.7	0.99
2018	Sept	27	1.00	0.01	0.99	80.05	0.99
2018	Sept	28	1.00	0.01	0.99	79.84	0.99
2018	Sept	29	1.00	0.01	0.99	80.31	0.99
2018	Sept	30	1.00	0.01	0.99	81.04	0.99
2018	Oct	1	1.00	0.01	0.99	80.85	0.99
2018	Oct	2	1.00	0.01	0.99	83.93	0.99
2018	Oct	3	1.00	0.01	0.99	79.78	0.99
2018	Oct	4	1.00	0.01	0.99	80.21	0.99
2018	Oct	5	1.00	0.01	0.99	79.97	0.99
2018	Oct	6	1.00	0.01	0.99	80.3	0.99
2018	Oct	7	1.00	0.01	0.99	74.63	0.99
2018	Oct	8	1.00	0.01	0.99	74.2	0.99
2018	Oct	9	1.00	0.01	0.99	70.05	0.99
2018	Oct	10	1.00	0.01	0.99	75.33	0.99
2018	Oct	11	1.00	0.01	0.99	68.83	0.99
2018	Oct	12	1.00	0.01	0.99	54.09	0.99
2018	Oct	13	1.00	0.01	0.99	49.88	0.99
2018	Oct	14	1.00	0.01	0.99	49.57	0.99
2018	Oct	15	1.00	0.01	0.99	49.82	0.99
2018	Oct	16	1.00	0.01	0.99	49.55	0.99
2018	Oct	17	1.00	0.01	0.99	49.5	0.99
2018	Oct	18	1.00	0.01	0.99	49.52	0.99
2018	Oct	19	1.00	0.01	0.99	24.74	0.99

2018	Oct	20	1.00	0.01	0.99	24.5	0.99
2018	Oct	21	1.00	0.01	0.99	6.88	0.99
2018	Oct	22	1.00	0.01	0.99	0	0.00
2018	Oct	23	1.00	0.01	0.99	0	0.00
2018	Oct	24	1.00	0.01	0.99	0	0.00
2018	Oct	25	1.00	0.01	0.99	0	0.00
2018	Oct	26	1.00	0.01	0.99	0	0.00
2018	Oct	27	1.00	0.01	0.99	0	0.00
2018	Oct	28	1.00	0.01	0.99	0	0.00
2018	Oct	29	1.00	0.01	0.99	0	0.00
2018	Oct	30	1.00	0.01	0.99	0	0.00
2018	Oct	31	1.00	0.01	0.99	0	0.00
2018	Nov	1	1.00	0.01	0.99	0	0.00
2018	NOv	2	1.00	0.01	0.99	0	0.00
2018	Nov	3	1.00	0.01	0.99	0	0.00
2018	Nov	4	1.00	0.01	0.99	0	0.00
2018	Nov	5	1.00	0.01	0.99	0	0.00
2018	Nov	6	1.00	0.01	0.99	0	0.00
2018	Nov	7	1.00	0.01	0.99	0	0.00
2018	Nov	8	1.00	0.01	0.99	0	0.00
2018	Nov	9	1.00	0.01	0.99	0	0.00
2018	Nov	10	1.00	0.01	0.99	0	0.00
2018	Nov	11	1.00	0.01	0.99	0	0.00
2018	Nov	12	1.00	0.01	0.99	0	0.00
2018	Nov	13	1.00	0.01	0.99	0	0.00
2018	Nov	14	1.00	0.01	0.99	0	0.00
2018	Nov	15	1.00	0.01	0.99	0	0.00
2018	Nov	16	1.00	0.01	0.99	0	0.00
2018	Nov	17	1.00	0.01	0.99	0	0.00
2018	Nov	18	1.00	0.01	0.99	31.35	0.99
2018	Nov	19	1.00	0.01	0.99	50.03	0.99
2018	Nov	20	1.00	0.01	0.99	59.94	0.99
2018	Nov	21	1.00	0.01	0.99	49	0.99
2018	Nov	22	1.00	0.01	0.99	46.9	0.99

2018	Nov	23	1.00	0.01	0.99	81.66	0.99
2018	Nov	24	1.00	0.01	0.99	68.82	0.99
2018	Nov	25	1.00	0.01	0.99	61.06	0.99
2018	Nov	26	1.00	0.01	0.99	52.13	0.99
2018	Nov	27	1.00	0.01	0.99	60.68	0.99
2018	Nov	28	1.00	0.01	0.99	60.73	0.99
2018	Nov	29	1.00	0.01	0.99	62.48	0.99
2018	Nov	30	1.00	0.01	0.99	64.05	0.99
2018	Dec	1	1.00	0.01	0.99	61.03	0.99
2018	Dec	2	1.00	0.01	0.99	60.86	0.99
2018	Dec	3	1.00	0.01	0.99	53.06	0.99
2018	Dec	4	1.00	0.01	0.99	59.63	0.99
2018	Dec	5	1.00	0.01	0.99	74.54	0.99
2018	Dec	6	1.00	0.01	0.99	50.29	0.99
2018	Dec	7	1.00	0.01	0.99	75.57	0.99
2018	Dec	8	1.00	0.01	0.99	80.23	0.99
2018	Dec	9	1.00	0.01	0.99	72.93	0.99
2018	Dec	10	1.00	0.01	0.99	58.05	0.99
2018	Dec	11	1.00	0.01	0.99	51.4	0.99
2018	Dec	12	1.00	0.01	0.99	51.41	0.99
2018	Dec	13	1.00	0.01	0.99	51.36	0.99
2018	Dec	14	1.00	0.01	0.99	51.39	0.99
2018	Dec	15	1.00	0.01	0.99	51.34	0.99
2018	Dec	16	1.00	0.01	0.99	51.21	0.99
2018	Dec	17	1.00	0.01	0.99	63.19	0.99
2018	Dec	18	1.00	0.01	0.99	107.91	0.99
2018	Dec	19	1.00	0.01	0.99	73.8	0.99
2018	Dec	20	1.00	0.01	0.99	51	0.99
2018	Dec	21	1.00	0.01	0.99	53.47	0.99
2018	Dec	22	1.00	0.01	0.99	72.39	0.99
2018	Dec	23	1.00	0.01	0.99	60.24	0.99
2018	Dec	24	1.00	0.01	0.99	50.91	0.99
2018	Dec	25	1.00	0.01	0.99	59.95	0.99
2018	Dec	26	1.00	0.01	0.99	51.05	0.99

2018	Dec	27	1.00	0.01	0.99	43.44	0.99
2018	Dec	28	1.00	0.01	0.99	41.45	0.99
2018	Dec	29	1.00	0.01	0.99	49.68	0.99
2018	Dec	30	1.00	0.01	0.99	60.12	0.99
2018	Dec	31	1.00	0.01	0.99	61.12	0.99
Filter Backwash Use - January							38.65
Filter Backwash Use -February							27.75
Filter Backwash Use -March							30.72
Filter Backwash Use -April							29.73
Filter Backwash Use - May							30.72
Filter backwash Use -June							29.73
Filter Backwash Use - July							30.72
Filter Backwash Use -August							30.72
Filter Backwash Use - September							29.73
Filter Backwash Use -October							20.81
Filter Backwash Use - November							12.88
Filter Backwash Use - December							30.72
TOTAL FILTER BACKWASH USE							342.92

dallas water utilities
city of dallas

Date February 19, 2020

To Texas Commission on Environmental Quality
Water Availability Division, MC-160
12100 Park 35 Circle
Austin, Texas 78753

Subject City of Dallas Permit Application for Bed and Banks authorization to convey Dallas' Elm Fork Water Treatment Plant return flows to Dallas' Bachman Water Treatment Plant.

The City of Dallas is pleased to submit the following application package to use Bed and Banks authorization to convey Elm Fork Water Treatment Plant return flow for use at Bachman Water Treatment Plant. The application includes one (1) original and six (6) copies of the entire application of both forms, worksheets, and accounting plan, and a copy of check for $5,712.50 in payment of the water rights application fees send to cashier's office under separate envelope.

Please let me know if we can provide additional information or assistance.

Sincerely

Denis Qualls, P.E., D.WRE
Senior Program Manager
Dallas Water Utilities

RECEIVED
FEB 25 2020
Water Availability Division

CC: Randal Wilburn, Gilbert Wilburn, PLLC
Terry Lowery, Director, Dallas Water Utilities
Richard Wagner, PE, Assistant Director, Dallas Water Utilities

1500 Marilla • Room 4AS • Dallas, Texas 75201
Telephone: (214) 670-3861 • Fax: (214) 670-5244

City of Dallas Permit Application for Bed and Banks authorization to convey Dallas' Elm Fork Water Treatment Plant return flows to Dallas' Bachman Water Treatment Plant

Prepared for Texas Commission on Environmental Quality - Water Availability Division on February 19, 2020

dallas water utilities
city of dallas

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ WATER RIGHTS PERMITTING APPLICATION

ADMINISTRATIVE INFORMATION CHECKLIST

Complete and submit this checklist for each application. See Instructions Page. 5.

APPLICANT(S): CITY OF DALLAS

Indicate whether the following items are included in your application by writing either Y (for yes) or N (for no) next to each item (all items are not required for every application).

Y/N	
Y	**Administrative Information Report**
N	Additional Co-Applicant Information
N	Additional Co-Applicant Signature Pages
Y	Written Evidence of Signature Authority
Y	**Technical Information Report**
Y	USGS Map (or equivalent)
Y	Map Showing Project Details
Y	Original Photographs
N	Water Availability Analysis
Y	**Worksheet 1.0**
N	Recorded Deeds for Irrigated Land
N	Consent For Irrigation Land
Y	**Worksheet 1.1**
N	Addendum to Worksheet 1.1
N	**Worksheet 1.2**
N	Addendum to Worksheet 1.2
N	**Worksheet 2.0**
N	Additional W.S 2.0 for Each Reservoir
N	Dam Safety Documents
N	Notice(s) to Governing Bodies
N	Recorded Deeds for Inundated Land
N	Consent For Inundation Land

Y/N	
Y	**Worksheet 3.0**
N	Additional W.S 3.0 for each Point
Y	Recorded Deeds for Diversion Points
N	Consent For Diversion Access
Y	**Worksheet 4.0**
Y	TPDES Permit(s)
N	WWTP Discharge Data
N	24-hour Pump Test
N	Groundwater Well Permit
N	Signed Water Supply Contract
Y	**Worksheet 4.1**
Y	**Worksheet 5.0**
N	Addendum to Worksheet 5.0
Y	**Worksheet 6.0**
Y	Water Conservation Plan(s)
Y	Drought Contingency Plan(s)
N	Documentation of Adoption
Y	**Worksheet 7.0**
Y	Accounting Plan
Y	**Worksheet 8.0**
Y	Fees

For Commission Use Only:
Proposed/Current Water Right Number: _____
Basin: _____ Watermaster area Y/N: _____

RECEIVED
FEB 25 2020
Water Availability Division

ADMINISTRATIVE INFORMATION REPORT

The following information **is required** for **all** new applications and amendments.

****Applicants are strongly encouraged to schedule a pre-application meeting with TCEQ Staff to discuss Applicant's needs prior to submitting an application. Call the Water Rights Permitting Team to schedule a meeting at** (512) 239-4691.

1. TYPE OF APPLICATION (Instructions, Page. 6)

Indicate, by marking X, next to the following authorizations you are seeking.

_____New Appropriation of State Water

_____Amendment to a Water Right *

__X__Bed and Banks

**If you are seeking an amendment to an existing water rights authorization, you must be the owner of record of the authorization. If the name of the Applicant in Section 2, does not match the name of the current owner(s) of record for the permit or certificate or if any of the co-owners is not included as an applicant in this amendment request, your application could be returned. If you or a co-applicant are a new owner, but ownership is not reflected in the records of the TCEQ, submit a change of ownership request (Form TCEQ-10204) prior to submitting the application for an amendment. See Instructions page. 6. Please note that an amendment application may be returned, and the Applicant may resubmit once the change of ownership is complete.*

Please summarize the authorizations or amendments you are seeking in the space below or attach a narrative description entitled "Summary of Request

The City of Dallas is requesting the authorization to use the bed and banks of the Elm Fork of the Trinity River to transport 5,600 acre-feet of return flows per year from the Elm Fork Water Treatment Plant for subsequent diversion at the Bachman Water Treatment Plant.

2. APPLICANT INFORMATION (Instructions, Page. 6)

a. Applicant

Indicate the number of Applicants/Co-Applicants 1

(Include a copy of this section for each Co-Applicant, if any)

What is the Full Legal Name of the individual or entity (applicant) applying for this permit?

CITY OF DALLAS

(If the Applicant is an entity, the legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN : 600331730 (leave blank if you do not yet have a CN).

What is the name and title of the person or persons signing the application? Unless an application is signed by an individual applicant, the person or persons must submit written evidence that they meet the signatory requirements in *30 TAC § 295.14.*

First/Last Name: Terry S. Lowery

Title: Director, Dallas Water Utilities

Have you provided written evidence meeting the signatory requirements in 30 TAC § 295.14, as an attachment to this application? Yes (See attachment B)

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Name: Terry S. Lowery

Mailing Address: 1500 Marilla Street - 4AN

City: Dallas State: Texas ZIP Code: 75201

Indicate an X next to the type of Applicant:

___Individual	___Sole Proprietorship-D.B.A.
___Partnership	___Corporation
___Trust	___Estate
___Federal Government	___State Government
___County Government	_X_City Government
___Other Government	___Other

For Corporations or Limited Partnerships, provide:
State Franchise Tax ID Number: _N/A_____SOS Charter (filing) Number: _____

3. APPLICATION CONTACT INFORMATION (Instructions, Page. 9)

If the TCEQ needs additional information during the review of the application, who should be contacted? Applicant may submit their own contact information if Applicant wishes to be the point of contact.

First and Last Name: Denis Qualls

Title: Sr. Program Manager

Organization Name: Dallas Water Utilities, Planning

Mailing Address: 1500 Marilla Street - 4AS

City: Dallas State: Texas ZIP Code: 75201

Phone No.: 214-670- 3843 Extension:

Fax No.: 214-670-1240 E-mail Address: [redacted]

4. WATER RIGHT CONSOLIDATED CONTACT INFORMATION (Instructions, Page. 9) N/A

This section applies only if there are multiple Owners of the same authorization. Unless otherwise requested, Co-Owners will each receive future correspondence from the Commission regarding this water right (after a permit has been issued), such as notices and water use reports. Multiple copies will be sent to the same address if Co-Owners share the same address. Complete this section if there will be multiple owners and **all** owners agree to let one owner receive correspondence from the Commission. Leave this section blank if you would like all future notices to be sent to the address of each of the applicants listed in section 2 above.

I/We authorize all future notices be received on my/our behalf at the following:

First and Last Name:

Title:

Organization Name:

Mailing Address:

City: State

Phone No.: Extension

Fax No. Email Address

5. MISCELLANEOUS INFORMATION (Instructions, Page. 9)

a. The application will not be processed unless all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol by all applicants/co-applicants. If you need assistance determining whether you owe delinquent penalties or fees, please call the Water Rights Permitting Team at (512) 239-4691, prior to submitting your application.

1. Does Applicant or Co-Applicant owe any fees to the TCEQ? **Yes** / (**No**)

2. If **yes**, provide the following information:
   Account number: Amount past due:

3. Does Applicant or Co-Applicant owe any penalties to the TCEQ? **Yes** / (**No**)

   If **yes**, please provide the following information:
   Enforcement order number: Amount past due:

b. If the Applicant is a taxable entity (corporation or limited partnership), the Applicant must be in good standing with the Comptroller or the right of the entity to transact business in the State may be forfeited. See Texas Tax Code, Subchapter F. Applicant's may check their status with the Comptroller at https://mycpa.cpa.state.tx.us/coa/

Is the Applicant or Co-Applicant in good standing with the Comptroller? (**Yes**) / **No**

c. The commission will not grant an application for a water right unless the applicant has submitted all Texas Water Development Board (TWDB) surveys of groundwater and surface water use - if required. See TWC §16.012(m) and 30 TAC § 297.41(a)(5).

Applicant has submitted all required TWDB surveys of groundwater and surface water? (**Yes**) / **No**

6. SIGNATURE PAGE (Instructions, Page. 11)

Applicant:

I, Terry S. Lowery, Director of Dallas Water Utilities, City of Dallas
(Typed or printed name) (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under Title 30 Texas Administrative Code §295.14 to sign and submit this document and I have submitted written evidence of my signature authority.

Signature: (Use blue ink) Date: 1/13/2020

Subscribed and Sworn to before me by the said

on this 13th day of January, 2020.

My commission expires on the 29th day of September, 2021.

Notary Public

PHYLLIS ANNE JONES
Notary Public
STATE OF TEXAS
ID#12688843-0
My Comm. Exp. Sep. 26, 2021

County, Texas Dallas

If the Application includes Co-Applicants, each Applicant and Co-Applicant must submit an original, separate signature page

TECHNICAL INFORMATION REPORT
WATER RIGHTS PERMITTING

This Report is required for applications for new or amended water rights. Based on the Applicant's responses below, Applicants are directed to submit additional Worksheets (provided herein). A completed Administrative Information Report is also required for each application.

Applicants are strongly encouraged to schedule a pre-application meeting with TCEQ Permitting Staff to discuss Applicant's needs and to confirm information necessary for an application prior to submitting such application. Please call Water Availability Division at (512) 239-4691 to schedule a meeting. Applicant attended a pre-application meeting with TCEQ Staff for this Application? **Y / N** (If yes, date : August 22, 2019).

1. New or Additional Appropriations of State Water. Texas Water Code (TWC) § 11.121 (Instructions, Page. 12) N/A

State Water is: *The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state. TWC § 11.021.*

a. Applicant requests a new appropriation (diversion or impoundment) of State Water? **Y / N**

b. Applicant requests an amendment to an existing water right requesting an increase in the appropriation of State Water or an increase of the overall or maximum combined diversion rate? **Y / N** (If yes, indicate the Certificate or Permit number:_____)

If Applicant answered yes to (a) or (b) above, does Applicant also wish to be considered for a term permit pursuant to TWC § 11.1381? **Y / N**

c. Applicant requests to extend an existing Term authorization or to make the right permanent? **Y / N** (If yes, indicate the Term Certificate or Permit number:_____)

If Applicant answered yes to (a), (b) or (c), the following worksheets and documents are required:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir requested in the application)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point and/or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach requested in the application)
- **Worksheet 5.0 – Environmental Information Worksheet**
- **Worksheet 6.0 – Water Conservation Information Worksheet**
- **Worksheet 7.0 – Accounting Plan Information Worksheet**
- **Worksheet 8.0 – Calculation of Fees**
- **Fees calculated on Worksheet 8.0** – see instructions **Page. 34.**
- **Maps** – See instructions **Page. 15.**
- **Photographs** - See instructions **Page. 30.**

Additionally, if Applicant wishes to submit an alternate source of water for the project/authorization, see Section 3, Page 3 for Bed and Banks Authorizations (Alternate sources may include groundwater, imported water, contract water or other sources).

Additional Documents and Worksheets may be required (see within).

2.Amendments to Water Rights. TWC § 11.122 (Instructions, Page. 12) N/A

This section should be completed if Applicant owns an existing water right and Applicant requests to amend the water right. ***If Applicant is not currently the Owner of Record in the TCEQ Records, Applicant must submit a Change of Ownership Application (TCEQ-10204) prior to submitting the amendment Application or provide consent from the current owner to make the requested amendment.*** **See instructions page. 6.**

Water Right (Certificate or Permit) number you are requesting to amend: N/A

Applicant requests to sever and combine existing water rights from one or more Permits or Certificates into another Permit or Certificate? **Y / N** (if yes, complete chart below):

List of water rights to sever	Combine into this ONE water right

a. Applicant requests an amendment to an existing water right to increase the amount of the appropriation of State Water (diversion and/or impoundment)? **Y / N**

If yes, application is a new appropriation for the increased amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

b. Applicant requests to amend existing Term authorization to extend the term or make the water right permanent (remove conditions restricting water right to a term of years)? **Y / N**

If yes, application is a new appropriation for the entire amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

c. Applicant requests an amendment to change the purpose or place of use or to add an additional purpose or place of use to an existing Permit or Certificate? **Y / N**
If yes, submit:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 1.2 - Notice: "Marshall Criteria"**

d. Applicant requests to change: diversion point(s); or reach(es); or diversion rate? **Y / N**

If yes, submit: **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach)

e. Applicant requests amendment to add or modify an impoundment, reservoir, or dam? **Y / N**

If yes, submit: **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir)

f. Other - Applicant requests to change any provision of an authorization not mentioned above? **Y / N** *If yes, call the Water Availability Division at (512) 239-4691 to discuss.*
Additionally, all amendments require:

- **Worksheet 8.0 – Calculation of Fees; and Fees calculated – see instructions Page.34**
- **Maps – See instructions Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

3. Bed and Banks. TWC § 11.042 (Instructions, Page 13)

a. Pursuant to contract, Applicant requests authorization to convey, stored or conserved water to the place of use or diversion point of purchaser(s) using the bed and banks of a watercourse? TWC § 11.042(a). Y/(N)

If yes, submit a signed copy of the Water Supply Contract pursuant to 30 TAC §§ 295.101 and 297.101. Further, if the underlying Permit or Authorization upon which the Contract is based does not authorize Purchaser's requested Quantity, Purpose or Place of Use, or Purchaser's diversion point(s), then either:

1. *Purchaser must submit the worksheets required under Section 1 above with the Contract Water identified as an alternate source; or*
2. *Seller must amend its underlying water right under Section 2.*

b. Applicant requests to convey water imported into the state from a source located wholly outside the state using the bed and banks of a watercourse? TWC § 11.042(a-1). Y/(N)

If yes, submit: worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps and fees from the list below.

c. Applicant requests to convey Applicant's own return flows derived from privately owned groundwater using the bed and banks of a watercourse? TWC § 11.042(b). Y/(N)

If yes, submit: worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

d. Applicant requests to convey Applicant's own return flows derived from surface water using the bed and banks of a watercourse? TWC § 11.042(c). (Y)/N

If yes, submit: worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, Maps, and fees from the list below.

Please note, if Applicant requests the reuse of return flows belonging to others, the Applicant will need to submit the worksheets and documents under Section 1 above, as the application will be treated as a new appropriation subject to termination upon direct or indirect reuse by the return flow discharger/owner.

e. Applicant requests to convey water from any other source, other than (a)-(d) above, using the bed and banks of a watercourse? TWC § 11.042(c). Y/(N)

If yes, submit: worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

Worksheets and information:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir owned by the applicant through which water will be conveyed or diverted)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for the downstream limit of each diversion reach for the proposed conveyances)
- **Worksheet 4.0 – Discharge Information Worksheet** (for each discharge point)
- **Worksheet 5.0 – Environmental Information Worksheet**
- **Worksheet 6.0 – Water Conservation Information Worksheet**
- **Worksheet 7.0 – Accounting Plan Information Worksheet**
- **Worksheet 8.0 – Calculation of Fees; and Fees calculated – see instructions Page. 34**
- **Maps** – See instructions **Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

4. General Information, Response Required for all Water Right Applications (Instructions, Page 15)

a. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement (*not required for applications to use groundwater-based return flows*). Include citations or page numbers for the State and Regional Water Plans, if applicable. Provide the information in the space below or submit a supplemental sheet entitled "Addendum Regarding the State and Regional Water Plans":

Upgrades at the Elm Fork Water Treatment Plant (EFWTP) allow the discharge of return flows from the disposal lagoon cells to the Elm Fork Trinity River of the Trinity River in the Trinity River Basin. Dallas requests to use bed and banks authorization to convey the return flows for diversion the same day at Dallas's Bachman Water Treatment Plant.

The proposed application is consistent with the State Water Plan and the approved Region C Water Plan. The EFWTP return flows will be used to meet a portion of Dallas' municipal water demands as identified in the 2016 Region C Water Plan section 5C.1.2.

b. Did the Applicant perform its own Water Availability Analysis? Y / (N)

If the Applicant performed its own Water Availability Analysis, provide electronic copies of any modeling files and reports.

C. Does the application include required Maps? (Instructions **Page. 15**) (Y) / N

WORKSHEET 1.0
Quantity, Purpose and Place of Use

1. New Authorizations (Instructions, Page. 16)

Submit the following information regarding quantity, purpose and place of use for requests for new or additional appropriations of State Water or Bed and Banks authorizations:

Quantity (acre-feet) *(Include losses for Bed and Banks)*	**State Water Source (River Basin)** or **Alternate Source** *each *alternate source (and new appropriation based on return flows of others) also requires completion of Worksheet 4.0*	**Purpose(s) of Use**	**Place(s) of Use** **requests to move state water out of basin also require completion of Worksheet 1.1 Interbasin Transfer*
5,600	Dallas' Elm Fork Water Treatment Plant return flows for reuse at Dallas Bachman Water Treatment Plant originating from existing surface water rights held by the City of Dallas and authorized by certificate of Adjudication Nos. 08-2455, 08-2456, 08-2457, 08-2458 and Water Use Permit No. 5414 in the Trinity River Basin.	Municipal	Dallas, Denton, Collin Rockwall and Kaufman counties all within the Trinity Basin.

5,600 Total amount of water (in acre-feet) to be used annually (*include losses for Bed and Banks applications*)

If the Purpose of Use is Agricultural/Irrigation for any amount of water, provide: N/A

1. Location Information Regarding the Lands to be Irrigated
   i) Applicant proposes to irrigate a total of_____acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of_____acres in_____County, TX.
   ii) Location of land to be irrigated: In the_____Original Survey No. _____, Abstract No._____.
   A copy of the deed(s) or other acceptable instrument describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds.
   If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.

   Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

2. Amendments - Purpose or Place of Use (Instructions, Page. 12) N/A

a. Complete this section for each requested amendment changing, adding, or removing Purpose(s) or Place(s) of Use, complete the following:

Quantity (acre-feet)	Existing Purpose(s) of Use	Proposed Purpose(s) of Use*	Existing Place(s) of Use	Proposed Place(s) of Use**

**If the request is to add additional purpose(s) of use, include the existing and new purposes of use under "Proposed Purpose(s) of Use."*

***If the request is to add additional place(s) of use, include the existing and new places of use under "Proposed Place(s) of Use."*

Changes to the purpose of use in the Rio Grande Basin may require conversion. 30 TAC § 303.43.

b. For any request which adds Agricultural purpose of use or changes the place of use for Agricultural rights, provide the following location information regarding the lands to be irrigated:

i) Applicant proposes to irrigate a total of_____acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of_____acres in_____ County, TX.

ii) Location of land to be irrigated: In the_____Original Survey No. _____, Abstract No._____.

A copy of the deed(s) describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds. If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other legal right for Applicant to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

c. Submit Worksheet 1.1, Interbasin Transfers, for any request to change the place of use which moves State Water to another river basin.

d. See Worksheet 1.2, Marshall Criteria, and submit if required.

e. See Worksheet 6.0, Water Conservation/Drought Contingency, and submit if required.

WORKSHEET 1.1
INTERBASIN TRANSFERS, TWC § 11.085 N/A

Submit this worksheet for an application for a new or amended water right which requests to transfer State Water from its river basin of origin to use in a different river basin. A river basin is defined and designated by the Texas Water Development Board by rule pursuant to TWC § 16.051.

Applicant requests to transfer State Water to another river basin within the State? Y / (N)

1. Interbasin Transfer Request (Instructions, Page. 20)

a. Provide the Basin of Origin._____

b. Provide the quantity of water to be transferred (acre-feet)._____

c. Provide the Basin(s) and count(y/ies) where use will occur in the space below:

_____

2. Exemptions (Instructions, Page. 20), TWC § 11.085(v)

Certain interbasin transfers are exempt from further requirements. Answer the following:

a. The proposed transfer, which in combination with any existing transfers, totals less than 3,000 acre-feet of water per annum from the same water right. **Y/N**

b. The proposed transfer is from a basin to an adjoining coastal basin? **Y/N**

c. The proposed transfer from the part of the geographic area of a county or municipality, or the part of the retail service area of a retail public utility as defined by Section 13.002, that is within the basin of origin for use in that part of the geographic area of the county or municipality, or that contiguous part of the retail service area of the utility, not within the basin of origin? **Y/N**

d. The proposed transfer is for water that is imported from a source located wholly outside the boundaries of Texas, except water that is imported from a source located in the United Mexican States? **Y/N**

3. Interbasin Transfer Requirements (Instructions, Page. 20)

For each Interbasin Transfer request that is not exempt under any of the exemptions listed above Section 2, provide the following information in a supplemental attachment titled "Addendum to Worksheet 1.1, Interbasin Transfer":

a. the contract price of the water to be transferred (if applicable) (also include a copy of the contract or adopted rate for contract water);

b. a statement of each general category of proposed use of the water to be transferred and a detailed description of the proposed uses and users under each category;

c. the cost of diverting, conveying, distributing, and supplying the water to, and treating the water for, the proposed users (example - expert plans and/or reports documents may be provided to show the cost);

d. describe the need for the water in the basin of origin and in the proposed receiving basin based on the period for which the water supply is requested, but not to exceed 50 years (the need can be identified in the most recently approved regional water plans. The state and regional water plans are available for download at this website: (http://www.twdb.texas.gov/waterplanning/swp/index.asp);

e. address the factors identified in the applicable most recently approved regional water plans which address the following:

(i) the availability of feasible and practicable alternative supplies in the receiving basin to the water proposed for transfer;

(ii) the amount and purposes of use in the receiving basin for which water is needed;

(iii) proposed methods and efforts by the receiving basin to avoid waste and implement water conservation and drought contingency measures;

(iv) proposed methods and efforts by the receiving basin to put the water proposed for transfer to beneficial use;

(v) the projected economic impact that is reasonably expected to occur in each basin as a result of the transfer; and

(vi) the projected impacts of the proposed transfer that are reasonably expected to occur on existing water rights, instream uses, water quality, aquatic and riparian habitat, and bays and estuaries that must be assessed under Sections 11.147, 11.150, and 11.152 in each basin *(if applicable)*. If the water sought to be transferred is currently authorized to be used under an existing permit, certified filing, or certificate of adjudication, such impacts shall only be considered in relation to that portion of the permit, certified filing, or certificate of adjudication proposed for transfer and shall be based on historical uses of the permit, certified filing, or certificate of adjudication for which amendment is sought;

(f) proposed mitigation or compensation, if any, to the basin of origin by the applicant; and

(g) the continued need to use the water for the purposes authorized under the existing Permit, Certified Filing, or Certificate of Adjudication, if an amendment to an existing water right is sought.

WORKSHEET 1.2
NOTICE. "THE MARSHALL CRITERIA" N/A

This worksheet assists the Commission in determining notice required for certain **amendments** that do not already have a specific notice requirement in a rule for that type of amendment, and *that do not change the amount of water to be taken or the diversion rate.* The worksheet provides information that Applicant **is required** to submit for such amendments which include changes in use, changes in place of use, or other non-substantive changes in a water right (such as certain amendments to special conditions or changes to off-channel storage). These criteria address whether the proposed amendment will impact other water right holders or the on-stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

*This worksheet is **not required for Applications in the Rio Grande Basin** requesting changes in the purpose of use, rate of diversion, point of diversion, and place of use for water rights held in and transferred within and between the mainstems of the Lower Rio Grande, Middle Rio Grande, and Amistad Reservoir. See 30 TAC § 303.42.*

*This worksheet is **not required for amendments which are only changing or adding diversion points, or request only a bed and banks authorization or an IBT authorization.** However, Applicants may wish to submit the Marshall Criteria to ensure that the administrative record includes information supporting each of these criteria*

1. The "Marshall Criteria" (Instructions, Page. 21)

Submit responses on a supplemental attachment titled "Marshall Criteria" in a manner that conforms to the paragraphs (a) - (g) below: (See attachment 1 for "Marshall Criteria")

a. Administrative Requirements and Fees. Confirm whether application meets the administrative requirements for an amendment to a water use permit pursuant to TWC Chapter 11 and Title 30 Texas Administrative Code (TAC) Chapters 281, 295, and 297. An amendment application should include, but is not limited to, a sworn application, maps, completed conservation plan, fees, etc.

b. Beneficial Use. Discuss how proposed amendment is a beneficial use of the water as defined in TWC § 11.002 and listed in TWC § 11.023. Identify the specific proposed use of the water (e.g., road construction, hydrostatic testing, etc.) for which the amendment is requested.

c. Public Welfare. Explain how proposed amendment is not detrimental to the public welfare. Consider any public welfare matters that might be relevant to a decision on the application. Examples could include concerns related to the well-being of humans and the environment.

d. Groundwater Effects. Discuss effects of proposed amendment on groundwater or groundwater recharge.

e. State Water Plan. Describe how proposed amendment addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. The state and regional water plans are available for download at: http://www.twdb.texas.gov/waterplanning/swp/index.asp.

f. Waste Avoidance. Provide evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined in TWC § 11.002. Examples of evidence could include, but are not limited to, a water conservation plan or, if required, a drought contingency plan, meeting the requirements of 30 TAC Chapter 288.

g. Impacts on Water Rights or On-stream Environment. Explain how proposed amendment will not impact other water right holders or the on-stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

WORKSHEET 2.0
Impoundment/Dam Information N/A

This worksheet **is required** for any impoundment, reservoir and/or dam. Submit an additional Worksheet 2.0 for each impoundment or reservoir requested in this application.

If there is more than one structure, the numbering/naming of structures should be consistent throughout the application and on any supplemental documents (e.g. maps).

1. Storage Information (Instructions, Page. 21)

a. Official USGS name of reservoir, if applicable:_____

Provide amount of water (in acre-feet) impounded by structure at normal maximum operating level:_

b. The impoundment is on-channel ____or off-channel_____(mark one)

1. Applicant has verified on-channel or off-channel determination by contacting Surface Water Availability Team at (512) 239-4691? **Y / N**

2. If on-channel, will the structure have the ability to pass all State Water inflows that Applicant does not have authorization to impound? **Y / N**

c. Is the impoundment structure already constructed? **Y / N**

i. For already constructed **on-channel** structures:

1. Date of Construction:_____

2. Was it constructed to be an exempt structure under TWC § 11.142? **Y / N**
   a. If Yes, is Applicant requesting to proceed under TWC § 11.143? **Y / N**
   b. If No, has the structure been issued a notice of violation by TCEQ? **Y / N**

3. Is it a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure? **Y / N**
   a. If yes, provide the Site No._____and watershed project name_____;
   b. Authorization to close "ports" in the service spillway requested? **Y / N**

ii. For **any** proposed new structures or modifications to structures:

1. Applicant **must** contact TCEQ Dam Safety Section at (512) 239-0326, *prior to submitting an Application.* Applicant has contacted the TCEQ Dam Safety Section regarding the submission requirements of 30 TAC, Ch. 299? **Y / N**
   Provide the date and the name of the Staff Person_____

2. As a result of Applicant's consultation with the TCEQ Dam Safety Section, TCEQ has confirmed that:
   a. No additional dam safety documents required with the Application. **Y / N**
   Dam safety Engineer Notification of completion certificate for 2012
   b. Plans (with engineer's seal) for the structure required. **Y / N**
   c. Engineer's signed and sealed hazard classification required. **Y / N**
   d. Engineer's statement that structure complies with 30 TAC, Ch. 299 Rules required. **Y / N**

3. Applicants **shall** give notice by certified mail to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir to be constructed, will be located. (30 TAC § 295.42). Applicant must submit a copy of all the notices and certified mailing cards with this Application. Notices and cards are included? **Y / N**

iii. Additional information required for **on-channel** storage:

1. Surface area (in acres) of on-channel reservoir at normal maximum operating level:_____.

2. Based on the Application information provided, Staff will calculate the drainage area above the on-channel dam or reservoir. If Applicant wishes to also calculate the drainage area they may do so at their option.
Applicant has calculated the drainage area. **Y/N**
If yes, the drainage area is _____sq. miles.
(If assistance is needed, call the Surface Water Availability Team prior to submitting the application, (512) 239-4691).

2. Structure Location (Instructions, Page. 23)

a. On Watercourse (if on-channel) (USGS name):_____

b. Zip Code: _

c. In the_____Original Survey No._____Abstract No._____County, Texas.

** A copy of the deed(s) with the recording information from the county records must be submitted describing the tract(s) that include the structure and all lands to be inundated.* **(See attachment 2.0 (1) for copy of the deed(s))**

***If the Applicant is not currently the sole owner of the land on which the structure is or will be built and sole owner of all lands to be inundated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.*

d. A point on the centerline of the dam (on-channel) or anywhere within the impoundment (off-channel) is:

Latitude_____°N, Longitude_____°W.

**Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places*

di. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program):_____

dii. Map submitted which clearly identifies the Impoundment, dam (where applicable), and the lands to be inundated. See instructions Page. 15. **Y / N**

TECHNICAL INFORMATION REPORT
WORKSHEET 3.0
DIVERSION POINT (OR DIVERSION REACH) INFORMATION

This worksheet **is required** for each diversion point or diversion reach. Submit one Worksheet 3.0 for **each** diversion point and two Worksheets for **each** diversion reach (one for the upstream limit and one for the downstream limit of each diversion reach).

The numbering of any points or reach limits should be consistent throughout the application and on supplemental documents (e.g. maps).

1. Diversion Information (Instructions, Page. 24)

a. This Worksheet is to add new (select 1 of 3 below): N/A

1. _____Diversion Point No.
2. _____Upstream Limit of Diversion Reach No.
3. _____Downstream Limit of Diversion Reach No.

b. Maximum Rate of Diversion for **this new point** 22.28 cfs (cubic feet per second) or 10,000 gpm (gallons per minute)

c. Does this point share a diversion rate with other points? (Y) / N
*If yes, submit Maximum **Combined** Rate of Diversion for all points/reaches* 663.01 cfs or 297,561.9 gpm

d. For amendments, is Applicant seeking to increase combined diversion rate? Y / (N)

*** An increase in diversion rate is considered a new appropriation and would require completion of Section 1, New or Additional Appropriation of State Water.*

e. Check (√) the appropriate box to indicate diversion location and indicate whether the diversion location is existing or proposed):

Check one		Write: Existing or Proposed
☑	Directly from stream	Existing
	From an on-channel reservoir	
	From a stream to an on-channel reservoir	
	Other method (explain fully, use additional sheets if necessary)	

f. Based on the Application information provided, Staff will calculate the drainage area above the diversion point (or reach limit). If Applicant wishes to also calculate the drainage area, you may do so at their option.

Applicant has calculated the drainage area. (Y) / N

If yes, the drainage area is 2,557 sq. miles.
(*If assistance is needed, call the Surface Water Availability Team at (512) 239-4691, prior to submitting application*)

2. Diversion Location (Instructions, Page 25)

a. On watercourse (USGS name): A point on the old channel of Elm Fork Trinity River, Trinity River Basin. This diversion point is also authorized by Certificates of Adjudication 08-2456, 08-2457 and 08-2458.

b. Zip Code: 75235

c. Location of point: In the Dickerson Parker Original Survey No. NA, Abstract No. 1113, Dallas County, Texas.

A copy of the deed(s) with the recording information from the county records must be submitted describing tract(s) that include the diversion structure. For diversion reaches, the Commission cannot grant an Applicant access to property that the Applicant does not own or have consent or a legal right to access, the Applicant will be required to provide deeds, or consent, or other documents supporting a legal right to use the specific points when specific diversion points within the reach are utilized. Other documents may include, but are not limited to: a recorded easement, a land lease, a contract, or a citation to the Applicant's right to exercise eminent domain to acquire access.
(See attachment 3.0(1) for copy of the deeds)

d. Point is at:
Latitude _____°N, Longitude _____°W.
Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places

e. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program): Points authorized in the following existing water rights and permits COA 08-2456 Section 3A.

f. Map submitted must clearly identify each diversion point and/or reach. See instructions Page. 38. (See attachment 3.0(2) for Diversion)

g. If the Plan of Diversion is complicated and not readily discernable from looking at the map, attach additional sheets that fully explain the plan of diversion.

The existing diversion point is a 96" diameter pipe connected from on-channel reservoir Frasier Dam at old Elm Fork Trinity River to Fishing Hole Lake. The Intake pumps at Fishing Hole Lake pumps raw water into Bachman Treatment Plant

WORKSHEET 4.0
DISCHARGE INFORMATION

This worksheet required for any requested authorization to discharge water into a State Watercourse for conveyance and later withdrawal or in-place use. Worksheet 4.1 is also required for each Discharge point location requested. **Instructions Page. 26.** ***Applicant is responsible for obtaining any separate water quality authorizations which may be required and for insuring compliance with TWC, Chapter 26 or any other applicable law.***

a. The purpose of use for the water being discharged will be Municipal.

b. Provide the amount of water that will be lost to transportation, evaporation, seepage, channel or other associated carriage losses 0.89 % and explain the method of calculation:

"See Supplement to Worksheet 4.0 for explanation of channel loss methodology"

Is the source of the discharged water return flows? (Y)/ N If yes, provide the following information:

1. The TPDES Permit Number(s). WQ0010060005 (attach a copy of the **current** TPDES permit(s)) (See attachment 4.0 (1) for copy of TPDES permit)

2. Applicant is the owner/holder of each TPDES permit listed above? (Y)/ N

PLEASE NOTE: If Applicant is not the discharger of the return flows, the application should be submitted under Section 1, New or Additional Appropriation of State Water, as a request for a new appropriation of state water. If Applicant is the discharger, then the application should be submitted under Section 3, Bed and Banks.

3. Monthly WWTP discharge data for the past 5 years in electronic format. -(See discharge information in attachment 4.0(2)

4. The percentage of return flows from groundwater 0% , surface water 100% ?

5. If any percentage is surface water, provide the base water right number(s) _____ .

   1. COA #08-2455 (Lake Ray Roberts)
   2. COA #08-2456 (Lake Lewisville)
   3. COA #08-2457 (Elm Fork Run-of-River)
   4. CoA #08-2458 (Lake Grapevine)
   5. Permit 5414 (Elm Fork Run-of-River Overdraft)

c. Is the source of the water being discharged groundwater? Y /(N) If yes, provide the following information:

1. Source aquifer(s) from which water will be pumped: N/A

2. Any 24 hour pump test for the well if one has been conducted. If the well has not been constructed, provide production information for wells in the same aquifer in the area of the application. See http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp. Additionally, provide well numbers or identifiers N/A .

3. Indicate how the groundwater will be conveyed to the stream or reservoir. N/A

4. A copy of the groundwater well permit if it is located in a Groundwater Conservation District (GCD) or evidence that a groundwater well permit is not required.

ci. Is the source of the water being discharged a surface water supply contract? **Y** / (**N**)
If yes, provide the signed contract(s).

cii. Identify any other source of the water N/A

WORKSHEET 4.1
DISCHARGE POINT INFORMATION

This worksheet is required for **each** discharge point. *Submit one Worksheet 4.1 for each discharge point. If there is more than one discharge point, the numbering of the points should be consistent throughout the application and on any supplemental documents (e.g. maps).* ***Instructions, Page 27.***

For water discharged at this location provide:

a. *The amount of water that will be discharged at this point is 5,600 acre-feet per year. The discharged amount should include the amount needed for use and to compensate for any losses.*

b. *Water will be discharged at this point at a maximum rate of 22.28 cfs or 10,000 gpm.*

c. *Name of Watercourse as shown on Official USGS maps: Elm Fork Trinity River*

d. *Zip Code: 75006*

f. *Location of point: In the Preston Witt Original Survey No. NA, Abstract No. 1156, Dallas County, Texas.*

g. *Point is at:*

Latitude 32.964913 °N, Longitude -96.943907 °W.

****Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places***

h. *Indicate the method used to calculate the discharge point location (examples: Handheld GPS Device, GIS, Mapping Program): GIS*

Map submitted must clearly identify each discharge point. See instructions Page. 15.

The Elm Fork Water Treatment Plant return flows through a 54-inch pipe to off-channel lagoon cells. A 36-inch discharge pipe from the lagoon cells transports the water from the lagoons to the Elm Fork of the Trinity River in segment number 822 of the Trinity River Basin.

(See Attached Worksheet 4.1(1)

WORKSHEET 5.0
ENVIRONMENTAL INFORMATION

This worksheet is required for new appropriations of water in the Canadian, Red, Sulphur, and Cypress Creek Basins. The worksheet is also required in all basins for: requests to change a diversion point, applications using an alternate source of water, and bed and banks applications. **Instructions, Page 28.**

1. New Appropriations of Water (Canadian, Red, Sulphur, and Cypress Creek Basins only) and Changes in Diversion Point(s)

Description of the Water Body at each Diversion Point or Dam Location. (Provide an Environmental Information Sheet for each location),

a. Identify the appropriate description of the water body. N/A

☐ Stream

☐ Reservoir

Average depth of the entire water body, in feet: _____

☐ Other, specify: _____

b. Flow characteristics N/A

If a stream, was checked above, provide the following. For new diversion locations, check one of the following that best characterize the area downstream of the diversion (check one).

☐ Intermittent - dry for at least one week during most years

☐ Intermittent with Perennial Pools - enduring pools

☐ Perennial - normally flowing

Check the method used to characterize the area downstream of the new diversion location.

☐ USGS flow records

☐ Historical observation by adjacent landowners

☐ Personal observation

☐ Other, specify: _____

c. Waterbody aesthetics N/A

Check one of the following that best describes the aesthetics of the stream segments affected by the application and the area surrunding those stream segments.

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

☐ Natural Area: trees and/or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid

☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

d. Waterbody Recreational Uses N/A

Are there any known recreational uses of the stream segments affected by the application?

☐ Primary contact recreation (swimming or direct contact with water)

☐ Secondary contact recreation (fishing, canoeing, or limited contact with water)

☐ Non-contact recreation

Submit the following information in a Supplemental Attachment, labeled Addendum to Worksheet 5.0:

1. Photographs of the stream at the diversion point or dam location. Photographs should be in color and show the proposed point or reservoir and upstream and downstream views of the stream, including riparian vegetation along the banks. Include a description of each photograph and reference the photograph to the map submitted with the application indicating the location of the photograph and the direction of the shot. (See Attachment 5)

2. Measures the applicant will take to avoid impingement and entrainment of aquatic organisms (ex. Screens on the new diversion structure). Diversion at Bachman Treatment Plant is an existing location in Elm Fork Trinity River, Trinity Basin. The Bachman Treatment Plant utilized 2 inch screens apart at the diversion structure to minimize entrainment and impingement of aquatic life.

3. If the application includes a proposed reservoir, also include: N/A

   i. A brief description of the area that will be inundated by the reservoir.

   ii. If a United States Army Corps of Engineers (USACE) 404 permit is required, provide the project number and USACE project manager.

   iii. A description of how any impacts to wetland habitat, if any, will be mitigated if the reservoir is greater than 5,000 acre-feet.

2. Alternate Sources of Water and/or Bed and Banks Applications

For all bed and banks applications:

a. Indicate the measures the applicant will take to avoid impingement and entrainment of aquatic organisms (ex. Screens on the new diversion structure).

The Diversion point at Bachman Water Treatment Plant is an existing location in Elm Fork Trinity River, Trinity Basin. It uses screens on the diversion structure to minimize entrainment and impingement of aquatic life.

b. An assessment of the adequacy of the quantity and quality of flows remaining after the proposed diversion to meet instream uses and bay and estuary freshwater inflow requirements.

The amount of diversion not to be exceed 5,600 AC-FT of water of the documented amount of return flows less carriage losses.

If the alternate source is treated return flows, provide the TPDES permit number WQ0010060005

If groundwater is the alternate source, or groundwater or other surface water will be discharged into a watercourse provide: N/A

a. Reasonably current water chemistry information including but not limited to the following parameters in the table below. Additional parameters may be requested if there is a specific water quality concern associated with the aquifer from which water is withdrawn. If data for onsite wells are unavailable; historical data collected from similar sized wells drawing water from the same aquifer may be provided. However, onsite data may still be required when it becomes available. Provide the well number or well identifier. Complete the information below for each well and provide the Well Number or identifier.

Parameter	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate, mg/L					
Chloride, mg/L					
Total Dissolved Solids, mg/L					
pH, standard units					
Temperature*, degrees Celsius					

* Temperature must be measured onsite at the time the groundwater sample is collected.

b. If groundwater will be used, provide the depth of the well_____and the name of the aquifer from which water is withdrawn_____. N/A

WORKSHEET 6.0
Water Conservation/Drought Contingency Plans

This form is intended to assist applicants in determining whether a Water Conservation Plan and/or Drought Contingency Plans is required and to specify the requirements for plans. **Instructions, Page 31.**

The TCEQ has developed guidance and model plans to help applicants prepare plans. Applicants may use the model plan with pertinent information filled in. For assistance submitting a plan call the Resource Protection Team (Water Conservation staff) at 512-239-4691, or e-mail wras@tceq.texas.gov. The model plans can also be downloaded from the TCEQ webpage. ***Please use the most up-to-date plan documents available on the webpage.***

1. Water Conservation Plans

a. The following applications must include a completed Water Conservation Plan (30 TAC § 295.9) for each use specified in 30 TAC, Chapter 288 (municipal, industrial or mining, agriculture - including irrigation, wholesale):

1. Request for a new appropriation or use of State Water.

2. Request to amend water right to increase appropriation of State Water.

3. Request to amend water right to extend a term.

4. Request to amend water right to change a place of use.
**does not apply to a request to expand irrigation acreage to adjacent tracts.*

5. Request to amend water right to change the purpose of use.
**applicant need only address new uses.*

6. Request for bed and banks under TWC § 11.042(c), when the source water is State Water
**including return flows, contract water, or other State Water.*

b. If Applicant is requesting any authorization in section (1)(a) above, indicate each use for which Applicant is submitting a Water Conservation Plan as an attachment:

1. ___✓___Municipal Use. See 30 TAC § 288.2. **

2. _____Industrial or Mining Use. See 30 TAC § 288.3.

3. _____Agricultural Use, including irrigation. See 30 TAC § 288.4.

4. ___✓___Wholesale Water Suppliers. See 30 TAC § 288.5. **

If Applicant is a water supplier, Applicant must also submit documentation of adoption of the plan. Documentation may include an ordinance, resolution, or tariff, etc. See 30 TAC §§ 288.2(a)(1)(J)(i) and 288.5(1)(H). Applicant has submitted such documentation with each water conservation plan? **Y / **N** (See Attachment 6.0(1) for conservation Plan)

c. Water conservation plans submitted with an application must also include data and information which: supports applicant's proposed use with consideration of the plan's water conservation goals; evaluates conservation as an alternative to the proposed

appropriation; and evaluates any other feasible alternative to new water development. See 30 TAC § 288.7.
Applicant has included this information in each applicable plan? (Y)/ N

Dallas City Council Resolution 120607 dated April 24, 2019 is on file with the TCEQ as part of Dallas Water Conservation Plan.

2. Drought Contingency Plans

a. A drought contingency plan is also required for the following entities if Applicant is requesting any of the authorizations in section (1) (a) above - indicate each that applies:

1. ___✓___Municipal Uses by public water suppliers. See 30 TAC § 288.20.

2. ___Irrigation Use/ Irrigation water suppliers. See 30 TAC § 288.21.

3. ___✓___ Wholesale Water Suppliers. See 30 TAC § 288.22.

b. If Applicant must submit a plan under section 2(a) above, Applicant has also submitted documentation of adoption of drought contingency plan (*ordinance, resolution, or tariff, etc. See 30 TAC § 288.30*) (Y)/ N (See attachment 6.0(2) for Drought Contingency Plan)

Dallas City Council Resolution 120608 dated April 24, 2019 is on file with the TCEQ as part of Dallas Drought Contingency Plan.

WORKSHEET 7.0
ACCOUNTING PLAN INFORMATION WORKSHEET

The following information provides guidance on when an Accounting Plan may be required for certain applications and if so, what information should be provided. An accounting plan can either be very simple such as keeping records of gage flows, discharges, and diversions; or, more complex depending on the requests in the application. Contact the Surface Water Availability Team at 512-239-4691 for information about accounting plan requirements, if any, for your application. **Instructions, Page 34.**

1. Is Accounting Plan Required

Accounting Plans are generally required:

- For applications that request authorization to divert large amounts of water from a single point where multiple diversion rates, priority dates, and water rights can also divert from that point;
- For applications for new major water supply reservoirs;
- For applications that amend a water right where an accounting plan is already required, if the amendment would require changes to the accounting plan;
- For applications with complex environmental flow requirements;
- For applications with an alternate source of water where the water is conveyed and diverted; and
- For reuse applications.

2. Accounting Plan Requirements

a. A **text file** that includes:
   1. an introduction explaining the water rights and what they authorize;
   2. an explanation of the fields in the accounting plan spreadsheet including how they are calculated and the source of the data;
   3. for accounting plans that include multiple priority dates and authorizations, a section that discusses how water is accounted for by priority date and which water is subject to a priority call by whom; and
   4. Should provide a summary of all sources of water.

b. A **spreadsheet** that includes:
   1. Basic daily data such as diversions, deliveries, compliance with any instream flow requirements, return flows discharged and diverted and reservoir content;
   2. Method for accounting for inflows if needed;
   3. Reporting of all water use from all authorizations, both existing and proposed;
   4. An accounting for all sources of water;
   5. An accounting of water by priority date;
   6. For bed and banks applications, the accounting plan must track the discharged water from the point of delivery to the final point of diversion;(see attachment7(1)&7(3)
   7. Accounting for conveyance losses; (See attachment 7.(2)
   8. Evaporation losses if the water will be stored in or transported through a reservoir. Include changes in evaporation losses and a method for measuring reservoir content resulting from the discharge of additional water into the reservoir;
   9. An accounting for spills of other water added to the reservoir; and
   10. Calculation of the amount of drawdown resulting from diversion by junior rights or diversions of other water discharged into and then stored in the reservoir.

WORKSHEET 8.0
CALCULATION OF FEES

This worksheet is for calculating required application fees. Applications are not Administratively Complete until all required fees are received. **Instructions, Page. 34**

1. NEW APPROPRIATION

	Description	Amount ($)
Filing Fee	Circle fee correlating to the total amount of water* requested for any new appropriation and/or impoundment. Amount should match total on Worksheet 1, Section 1. Enter corresponding fee under **Amount ($).** In Acre-Feet a. Less than 100 $100.00 b. 100 - 5,000 $250.00 c. 5,001 - 10,000 $500.00 d. 10,001 - 250,000 $1,000.00 e. More than 250,000 $2,000.00	
Recording Fee		$0.0
Agriculture Use Fee	*Only for those with an Irrigation Use.* Multiply 50¢ x_____Number of acres that will be irrigated with State Water. **	
Use Fee	*Required for all Use Types, **excluding Irrigation Use.*** Multiply $1.00 x 5600Maximum annual diversion of State Water in acre-feet. **	5,600.00
Recreational Storage Fee	*Only for those with Recreational Storage.* Multiply $1.00 x_____acre-feet of in-place Recreational Use State Water to be stored at normal max operating level.	
Storage Fee	*Only for those with Storage, **excluding Recreational Storage.*** Multiply 50¢ x_____acre-feet of State Water to be stored at normal max operating level.	
Mailed Notice	Cost of mailed notice to all water rights in the basin. Contact Staff to determine the amount (512) 239-4691.	
	TOTAL	$5,600.00

2. AMENDMENT *OR* SEVER AND COMBINE

	Description	Amount ($)
Filing Fee	Amendment: $100	
	OR Sever and Combine: $100 x___of water rights to combine	
Recording Fee		
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$0.0

3. BED AND BANKS

	Description	Amount ($)
Filing Fee		$100.00
Recording Fee		$12.50
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$5,712.50

GF#
83102 dh

Rec $ 11.50

Blocks 8362, 6499,6498, 8363, 8360, 8361 and 5797

[illegible] 11.50

WARRANTY DEED

DEED RECORD

THE STATE OF TEXAS X
X KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF DALLAS X

THAT TRINITY BEND CO., a Delaware Corporation, hereinafter called Grantor, for and in consideration of the sum of FIVE HUNDRED EIGHTEEN THOUSAND, THREE HUNDRED THIRTY-ONE AND 55/100 ($518,331.55) DOLLARS CASH to Grantor in hand paid by THE CITY OF DALLAS, TEXAS, a Municipal Corporation, hereinafter called Grantee, the receipt of which is hereby acknowledged, have Granted, Sold and Conveyed, and by these presents do Grant, Sell and Convey unto the said Grantee of the County of Dallas, State of Texas, all that certain lot, tract or parcel of land, lying and being situated in the County of Dallas, State of Texas, being described as follows:

> Being four tracts of land situated in the Eli Merrell Survey, Abstract No. 987, the Benjamin Merrell Survey, Abstract No. 932, the William Cochran Survey, Abstract No. 1075, the H. Webb Survey, Abstract No. 1566, the John Howell Survey, Abstract No. 584, and the Dickerson Parker Survey, Abstract No. 1113, Dallas County, Texas, and being in Blocks 8363, 6499, 6498, 8362, 8360, 8361 and 5797, official City of Dallas numbers, and being all of the land conveyed to Trinity Bend Company, a Delaware Corporation, and described by metes and bounds in EXHIBIT "A" attached hereto and incorporated herein for all intents and purposes as if copied herein verbatim.

This Deed is executed and delivered subject to easements, reservations, conditions, covenants and restrictive covenants affecting the property conveyed hereby as shown in EXHIBIT "B" attached hereto and incorporated herein for all intents and purposes as if copied herein verbatim.

To have and to hold the above described premises, together with all and singular the rights and appurtenances thereto in any wise belonging unto the said Grantee, Grantee's successors and assigns forever; and Grantor does hereby bind Grantor, Grantor's successors and assigns to warrant and forever defend, all and singular the said premises unto the said Grantee, Grantee's successors

[illegible]

71251 1566

and assigns, against every person whomsoever lawfully claiming, or to claim the same or any part thereof, by, through or under the Grantor.

EXECUTED this 27th day of December, 1971.

TRINITY BEND CO.
Delaware Corporation

BY: _____
Lamar Hunt, President

THE STATE OF TEXAS I
I
COUNTY OF DALLAS I

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared LAMAR HUNT, President of TRINITY BEND CO., a Delaware Corporation, known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same as the act and deed of TRINITY BEND CO., a Delaware Corporation, for the purposes and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 27th day of December, 1971.

_____
Notary Public in and for Dallas County, Texas

My commission expires 73

Approved as to form
N. ALEX BICKLEY, City Attorney
By _____
Assistant City Attorney
C. MERRILL BIERFELD

72251 1557

All those certain lots, tracts or parcels of land lying and being situated in the City and County of Dallas, Texas, more particularly described as follows:

BEING situated in the Eli Merrell Survey, Abstract No. 978, the Benjamin Merrell Survey, Abstract No. 932, the William Cochran Survey, Abstract No. 1075, the H. Webb Survey, Abstract No. 1586, the John Howell Survey, Abstract No. 584, and the Dickerson Parker Survey, Abstract No. 1113, Dallas County, Texas, and being in Blocks 8363, 6499, 6498, 8362, 8360, 8361 and 5797, official City of Dallas numbers, and being all of the land conveyed to Trinity Bend Company, a Delaware Corporation, and described in the following tracts:

TRACT NO. 1

BEING situated in the Eli Merrell Survey, Abstract No. 978, and the Benjamin Merrell Survey, Abstract No. 932 and being in Blocks 6498, 6499 and 8363, official City of Dallas numbers, and being a part of the land conveyed to the Trinity Bend Company by Lamar Hunt Estate by Trustee's Deed dated January 1, 1961, and recorded in Volume 5517, Page 287 of the Deed Records of Dallas County, Texas, and being all of the land conveyed to the Trinity Bend Company by the following Deeds:

1. Being called Tract Two of deed dated October 31, 1960 and recorded in Volume 5517, Page 279 of said Deed Records;

2. Deed dated January 1, 1961 and recorded in Volume 5517, Page 283 of said Deed Records;

3. Deed dated January 1, 1961 and recorded in Volume 5517, Page 281 of said Deed Records;

4. Being called Tract One of deed dated January 1, 1961 and recorded in Volume 5517, Page 277 of said Deed Records;

and being more particularly described as follows:

BEGINNING at the southwest corner of said Trinity Bend Company tract conveyed by deed dated January 1, 1961 and recorded in Volume 5517, Page 283 of said Deed Records and being the southeast corner of a tract of land conveyedto James Meaders by deed recorded in Volume 644, Page 571, said beginning lying on the south line of the Eli Merrell Survey, Abstract No. 978 and the north line of the Harvey H. Newton Survey, Abstract No. 1075;

THENCE eastward along the south line of the last-mentioned Trinity Bend Company tract recorded in Volume 5517, Page 283, being the common line between said Eli Merrell and Newton Surveys, a distance of 887.5 feet, more or less, to the southeast corner of said Eli Merrell Survey and the southwest corner of the Benjamin Merrell Survey, Abstract No. 932, said corner being the southwest corner of a 2.1 acre tract of land conveyed to the University of Dallas, a Texas Corporation called the Sixth Tract by deed dated January 24, 1959 and recorded in Volume 70095, Page 0051 of said Deed Records;

THENCE northward along the common line between the last mentioned Trinity Bend Company Tract recorded in Volume 5517, Page 283 and said University of Dallas Tract, also being the common line between the aforementioned Eli Merrell and Benjamin Merrell Surveys, a distance of 441 feet, more or less, to a point on the center line

of the West Fork (sometimes called the "Elm Fork") of the Trinity River, said point being the most northerly corner of said Sixth Tract of the University of Dallas,and being on the west line of a tract of land conveyed to the Trinity BendCompany as Tract Two by deed dated October 31, 1960 and recorded in Volume 5517, Page 279 of said Deed Records;

THENCE along the meanders of the centerline of that old Channel of said Fork of the Trinity River, being the common line between the last-mentioned Trinity Bend Company tract called Tract Two by deed recorded in Volume 5517, Page 279 and said Sixth Tract of the University of Dallas as follows:

South 77° 37' East 80.20 feet, more or less,
South 39° 49' East 192.80 feet, more or less,
South 32° 54' East 328.36 feet, more or less,

to a point for corner, said corner lying on the south line of the last-mentioned Trinity Bend Company tract called Tract Two by deed recorded in Volume 5517, Page 279, and the Southeast corner of the aforementioned Sixth Tract of the University of Dallas, said corner also lying on the south line of the abovementioned Benjamin Merrell Survey, Abstract No. 932 and the north line of the Harvey H. Newton Survey, Abstract No. 1075;

THENCE eastward along the common line between said Benjamin Merrell and Newton Surveys, passing at a distance of 280 feet, more or less, the southwest corner of the previously mentioned tract of land conveyed to the Trinity Bend Company by deed dated January 1, 1961 and recorded in Volume 5517, Page 281 of said Deed Records, passing at a distance of 940 feet, more or less, the southwest corner of a previously mentioned tract of land conveyed to the Trinity Bend Company by deed dated January 1, 1961 and recorded in Volume 5517, Page 287, and continuing in all a total distance of 1188 feet, more or less, to a point on the northwest line of a tract of land conveyed to the City of Dallas by deed dated July 1, 1960 and recorded in Volume 5415, Page 247, of said Deed Records;

FIELD NOTES O.K.

THENCE North 49° 05' East along the northwest line of the last-mentioned City of Dallas tract, passing at a distance of 546.55 feet the most southerly corner of a previously mentioned tract of land conveyedto the Trinity Bend Company called Tract One by deed dated January 1, 1961 and recorded in Volume 5517, Page 277, and continuing in all a total distance of 620 feet, more or less, to the most easterly corner of the last-mentioned Trinity Bend Company tract recorded in Volume 5517, Page 277;

THENCE North 62° 15' West along the northeast line of the last-mentioned Trinity Bend Company tract recorded in Volume 5517, Page 277, passing at a distance of 54 feet, more or less, the northeast corner of the aforementioned Trinity Bend Company tract recorded in Volume 5517, Page 287, passing at a distance of 800 feet, more or less, the northeast corner of the aforementioned Trinity Bend Company tract recorded in Volume 5517, Page 281 of said Deed Records, passing at a distance of 1546 feet, more or less, the northeast corner of the aforementioned Trinity Bend Company tract called Tract Two by deed recorded in Volume 5517, Page 279 of said Deed Records, passing at a distance of 2292 feet, more or less, the northeast corner of the aforementioned Trinity Bend Company tract recorded in Volume 5517, Page 283, the last-mentioned northeast corner lying on the common line between the previously mentioned Benjamin Merrell Survey, Abstract No. 932 and the Eli Merrell Survey, Abstract No. 978, and continuing in all a total distance of 3297 feet, more or less, to the northwest corner of the last-mentioned Trinity Bend Company Tract recorded in Volume 5517, Page 283,said corner lying on the east line of the previously mentioned tract of land conveyed to James Meaders by deed recorded in Volume 644, Page 571;

THENCE southward along the common line between said Trinity Bend and Meaders tracts, a distance of 1930.7 feet, more or less, to the place of beginning and containing approximately 73.849 acres of land.

TRACT NO. 2

BEING situated in the Harvey H. Newton Survey, Abstract No. 1075 and the H. Webb Survey, Abstract No. 1586, and being in Blocks 8362 and 8360, official City of Dallas numbers, and being a part of the land conveyed to the Trinity Bend Company by the following deeds:

1. Tract One of deed dated October 31, 1960 and recorded in Volume 5517, Page 279, of said Deed Records;

2. Deed dated May 1, 1960 and recorded in Volume 5517, Page 273 of said Deed Records;

3. Tract One of deed dated June 21, 1961 and recorded in Volume 5577, Page 461 of said Deed Records;

and being more particularly described as follows:

BEGINNING at a point on the centerline of the Old Channel of the Elm Fork of the Trinity River, said beginning being the northwest corner of the abovementioned tract conveyed to the Trinity Bend Company by deed dated October 31, 1960 and recorded in Volume 5517, Page 279, and lying on the north line of the Harvey H. Newton Survey, Abstract No. 1075, and the south line of the Benjamin Merrell Survey, Abstract No. 932;

THENCE eastward along the common line between said Harvey H. Newton Survey and Benjamin Merrell Survey, a distance of 2260 feet, more or less, to the northeast corner of the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 279, also being the northeast corner of said Harvey H. Newton Survey and the northwest corner of the H. Webb Survey, Abstract No. 1586, also being the northwest corner of a tract of land conveyed to J. H. Marshall, Jr., called Tract Two by deed dated July 27, 1964, and recorded in Volume 371, Page 508, of said Deed Records;

THENCE southward along the common line of said Trinity Bend Company tract recorded in Volume 5517, Page 273 of said deed records and J. H. Marshall, Jr., tract, also being the common line between the abovementioned Newton and Webb surveys, a distance of 453.4 feet, more or less, to a point for corner, said corner being the northwest corner of a tract of land conveyed to the Trinity Bend Company called First Tract of deed dated June 21, 1961 and recorded in Volume 5577, Page 461 of said deed REcords, said corner also being the southwest corner of the abovementioned Marshall Tract;

THENCE eastward along the common line between the last-mentioned Trinity Bend Company tract recorded in Volume 5577, Page 461 and said J. H. Marshall, Jr., tract, a distance of 276.7 feet, more or less, to the intersection of same with the northwest line of Storey Lane (a 200 foot right-of-way);

THENCE southwestward along the northwest line of Storey Lane, passing at a distance of 365 feet, more or less, the common line between said Harvey H. Newton Survey and H. Webb Survey, and continuing in all a total distance of 1539 feet, more or less, to a point on the centerline of the Elm Fork of the Trinity River, said center line being the common line between the abovementioned

tract conveyed to the Trinity Bend Company called Tract One by deed dated October 31, 1960 and recorded in Volume 5517, Page 279 of said deed records and a tract of land conveyed to the University of Dallas called the Eighth Tract by deed dated January 24, 1959 and recorded in Volume 70095, Page 0051 of said deed records;

THENCE with the meanders of said centerline of the Channel of the Elm Fork of the Trinity River, being the common line between the last-mentioned Trinity Bend Company tract recorded in Volume 5517, Page 279 and said University of Dallas tract as follows:

North 43° 20' 30" West 192 feet, more or less
North 07° 11' 47" West 285.5 feet, more or less
North 16° 38' 15" East 262 feet, more or less
North 37° 44' 17" West 335 feet, more or less
North 64° 35' 20" West 323 feet, more or less
South 66° 15' West 450.7 feet, more or less
South 78° 54' 22" West 333 feet, more or less
North 73° 53' 44" West 300 feet, more or less
North 19° 31' 50" West 158 feet, more or less
North 39° 58' 55" East 344.3 feet, more or less
North 29° 50' 55" East 90 feet, more or less, and North 18° 22' 32" East 61.8 feet, more or less, to the place of beginning and containing approximately 44.395 acres of land, save and except a 1.847 acre tract of land conveyed to the City of Dallas called Tract No. 3 by deed dated July 1, 1960 and recorded in Volume 5415, Page 243 of said Deed Records and more particularly described as follows:

BEGINNING at a point on the north line of said Harvey Newton Survey, and the south line of the Benjamin Merrell Survey, said point being South 49° 05' West 513.95 feet from an angle point on a tract of land conveyed to the Dallas Powerand Light Company by deed recorded in Volume 3319, Page 372 of said Deed Records;

THENCE South 49° 05' West a distance of 573 feet, more or less, to a point for corner in the channel of Elm Fork of the Trinity River;

THENCE North 70° 55' West up Elm Fork of the Trinity River, a distance of 175.54 feet to a point for corner;

THENCE North 49° 05' East 485.43 feet to a point for corner on the common line of said Newton and Merrell Surveys;

THENCE eastward along the last-mentioned common line, a distance of 232.08 feet to the place of beginning, leaving approximately 42.548 acres of land to be conveyed.

TRACT NO. 3

BEING situated in the Benjamin Merrell Survey, Abst. No. 932 and being in Block 6498, official City of Dallas numbers, and being a part of a tract of land conveyed to Trinity Bend Company by deed dated January 1, 1961 and recorded in Volume 5517, Page 287 of said Deed Records, and being all of a tract of land conveyed as tract Two to Trinity Bend Company by deed dated January 1, 1961 and recorded in Volume 5517, Page 277, and being more particularly described as follows:

BEGINNING at the southeast corner of the aforementioned tract of land conveyed to the Trinity Bend Company called Tract Two by deed dated January 1, 1961 and recorded in Volume 5517, Page 277, also being the southeast corner of the abovementioned Benjamin Merrell Survey, Abstract No. 932, and being the northeast corner of the Harvey H. Newton Survey, Abstract No. 1075;

THENCE westward along the south line of the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 277, also being the common line between said Merrell and Newton Surveys, passing at a distance of 660 feet the southeast corner of the above-mentioned tract of land conveyed to the Trinity Bend Company by deed dated January 1, 1961 and recorded in Volume 5517, Page 287, and continuing in all a total distance of 839.2 feet, more or less, to a point on the southeast line of a tract of land conveyed to the City of Dallas by deed dated July 1, 1960 and recorded in Volume 5415, Page 247 of said Deed Records;

THENCE North 49° 05' East along the southeast line of said City of Dallas Tract recorded in Volume 5415, Page 247, passing at a dista.. of 239.43 feet the most southerly corner of another tract of land conveyed to the City of Dallas called Tract No. 2 by deed dated July 1, 1960 and recorded in Volume 5415, Page 243, and continuing in all a total distance of 514 feet, more or less, to a point for corner, said corner lying on an angle point on the southwest line of a tract of land conveyed to the Dallas Power and Light Company by deed dated May 31, 1950 and recorded in Volume 3319, Page 372;

THENCE South 58° 35' East along the southwest line of the last-mentioned Dallas Power and Light Company Tract, a distance of 530.3 feet, more or less, to a point on the common line between said Benjamin Merrell Survey, Abst. No. 932 and the S. Lockhart Survey, Abst. No. 1761;

THENCE southward along the last-mentioned common line between said Merrell and Lockhart Surveys, a distance of 60.2 feet, more or less, to the place of beginning and containing approximately 3.561 acres of land;

TRACT NO. 4

BEING situated in the D. Parker Survey, Abstract No. 1113, the H. Webb Survey, Abst. No. 1586, the John Howell Survey, Abst. No. 584 and the Harvey H. Newton Survey, Abst. No. 1075, and being in blocks 5797, 8360, 8361, and 8362, official City of Dallas Block numbers and being all of the land conveyed to the Trinity Bend Company by the following deeds;

1. Beingcalled Tracts One and Two of deed dated May 1, 1960 and recorded in Volume 5517, Page 271 of said Deed Records;

2. Being called Tracts One and Two of deed dated July 1, 1960 and recorded in Volume 5517, Page 285 of said Deed Records;

3. Being called the second tract of deed dated June 21, 1961, and recorded in Volume 5577, Page 461, of said Deed Records;

4. Deed dated June 29, 1966 and recorded in Volume 880, Page 0985 of said Deed Records;

5. Deed dated May 1, 1960 and recorded in Volume 5517, Page 273 of said Deed Records;

6. Being called Tract One of deed dated October 31, 1960 and recorded in Volume 5517, Page 279 of said Deed Records;

and being more particularly described as follows:

BEGINNING at the intersection of the southeast line of Storey Lane (a 200 foot right-of-way) with the common line between the H. Webb Survey, Abstract No. 1586 and H. Newton Survey, Abstract No. 1075, said beginning being the northwest corner of the aforementioned tract of land conveyed to Trinity Bend Company called the Second Tract of deed dated June 21, 1961 and recorded in Volume 5577, Page 461 of said Deed Records;

THENCE Northeastward along the southeast line of said Storey Lane, passing at a distance of 8.3 feet, more or less, the most westerly corner of a tract of land conveyed to the Trinity Bend called Tract One of the aforementioned Deed dated May 1, 1960 and recorded in Volume 5517, Page 271 and continuing in all a total distance of 780 feet more or less to the northeast terminal line of said 200 foot right-of-way, being on the southwest terminal line of the beginning of a 300 foot right-of-way, for Storey Lane;

THENCE South 48° 12' East along the last-mentioned terminal line, a distance of 50.5 feet to the intersection of same with the southeast line of said 300 foot wide right-of-way;

THENCE North 49° 23' East along the southeast line of said 300 foot wide right-of-way, a distance of 130.04 feet to the intersection of same with the southwest line of a tract of landconveyed to the Dallas Power and Light Company by deed dated May 12, 1950 and recorded in Volume 3309, Page 208 of said Deed Records;

FIELD NOTES O.K.

THENCE South 58° 35' East along the southwest line of said Dallas Power and Light Company tract, also being the northeast line of the tract herein to be conveyed, passing at a distance of 1,255.8 feet more or less the most northerly corner of a tract of land conveyed to the Trinity Bend Company by the aforementioned deed dated June 29, 1966 and recorded in Volume 880, Page 0985, of said Deed Records, and continuing in all a total distance of 2270.8 feet more or less to the most easterly corner of the last-mentioned Trinity Bend Company tract as recorded in Volume 880, Page 0985;

THENCE South 45° 01' 37" West along the southeast line of the last-mentioned Trinity Bend Company tract as recorded in Volume 880, Page 0985, a distance of 1448.17 feet to the most southerly corner of the last-mentioned Trinity Bend Company tract as recorded in Volume 880, Page 0985, and being on the northeast line of a tract of land conveyed to the Trinity Bend Company called Tract Two by the aforementioned deed dated July 1, 1960 and recorded in Volume 5517, Page 285 of said Deed Records, said corner lying on the common line between the D. Parker Survey, Abstract No. 1113 and the H. Webb Survey, Abst. No. 1586;

THENCE southeastward along the last-mentioned common line of said Parker and Webb surveys, also being the northeast line of the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, passing at a distance of 91.6 feet more or less, the northeast corner of a tract of land conveyed to the Trinity Bend Company, called Tract Two by said deed dated May 1, 1960 and recorded in Volume 5517, Page 271, also being the northeast corner of the John Howell Survey, Abst. No. 584, and continuing in all a total distance of 791 feet more or less to a point on the center line of the Old Channel of the Elm Fork of the Trinity River, said point being the most easterly corner of the last-mentioned Trinity Bend Company tract, as recorded in Volume 5517, Page 271, and being a common corner of a tract of land conveyed to the Dallas Gravel Company called Tract 5 by deed dated October 6, 1952, and recorded in Volume 3741, Page 275;

THENCE along the meanders of the center line of said Old Channel of the Elm Fork of the Trinity River, also being the common line between the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 271 and said Dallas Gravel Company tract as follows:

South 65° 00' West 165 feet more or less,
North 79° 15' West 184 feet more or less,
North 42° 55' West 489 feet more or less,
South 88° 30' West 169 feet more or less,
South 26° 00' West 390 feet more or less,
South 61° 20' West 235 feet more or less,
North 71° 45' West 295 feet more or less,
North 51° 25' West 360 feet more or less,
North 34° 35' West 460 feet more or less,

to a point on the south line of the aforementioned Trinity Bend Company tract called Tract One by deed dated July 1, 1960 and recorded in Volume 5517, Page 285 said point lying on the common line between the aforementioned Howell and Webb Surveys;

THENCE westward along the south line of the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, also being the common line between the aforementioned Howell and Webb Surveys, a distance of 269 feet, more or less, to a point on the east line ofthe Harvey H. Newton Survey, Abst. No. 1075, said point being the southwest corner of the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, and lying on the east line of a tract of land conveyed to Ernest Gene Farrow et al called the Second Tract by deed dated October 7, 1955 and recorded in Volume 4361, Page 260;

THENCE northward along the common line between said Webb and Newton Surveys, also being the common line between the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, and said Farrow tract, a distance of 439 feet, more or less, to the northwest corner of said last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, also being the southwest corner of a tract of land conveyed to Florence M. McMahan by deed dated September 19, 1955 and recorded in Volume 4350, Page 612 of said Deed Records;

THENCE eastward along the common line between the last-mentioned Trinity Bend Company tract as recorded in Volume 5517, Page 285, and McMahan tract, a distance of 397 feet, more or less, to a point on the center line of the Channel of the Elm Fork of the Trinity River, said point being the southwest corner of the aforementioned tract of land conveyed to the Trinity Bend Company called Tract Two by deed dated July 1, 1960 and recorded in Volume 5517, Page 285;

THENCE along the meanders of the center line of the channel of the Elm Fork of the Trinity River also being the common line between the last-mentioned Trinity Bend Company tract called Tract Two by deed recorded in Volume 5517, Page 285 and the tract of land as presently owned by said McMahan as follows:

North 28° 40' East 194 feet , more or less,
North 13° 48' East 207 feet, more or less,
North 01° 41' East 175 feet, more or less,
North 33° 15' West 190 feet, more or less,

to a point on the south line of a tract of land conveyed to the Trinity Bend Company called the Second Tract by deed dated June 21, 1961 and recorded in Volume 5577, Page 461;

THENCE westward along the common line between the last-mentioned Second Tract of the Trinity Bend Company as recorded in Volume 5577, Page 461, and said McMahan tract 426 feet, more or less, to a point on the common line between the H. Webb Survey, Abstract No. 1586 and Harvey H. Newton Survey, Abstract No. 1075, said point being the southwest corner of the last-mentioned Second Tract of the Trinity Bend Company as recorded in Volume 5577, Page 461, and being on the east line of said tract of land conveyed to Ernest Gene Farrow et al called the Second Tract by deed dated October 7, 1955 and recorded in Volume 4361, Page 260;

THENCE southward along the common line between said Webb and Newton Surveys, being the common line between said McMahan tract and Farrow et al tract, a distance of 100 feet more or less to a corner on the center line of the channel of the Elm Fork of the Trinity River, said point being on a southeast line of a tract of land conveyed to the Trinity Bend Company calledTract One by deed dated October 31, 1960 and recorded in Volume 5517, Page 279, and being the northeast corner of said Farrow et al tract;

THENCE along the meanders of the center line of the channel of the Elm Fork of the Trinity River, also being the common line between the last-mentioned Trinity Bend Company tract called Tract One by deed dated October 31, 1960 and recorded in Volume 5517, Page 279 and said Farrow tract as follows:

South 44° 23' 10" West 120.6 feet more or less,
South 65° 42' 34" West 137.0 feet more or less,
South 77° 12' 17" West 114 feet more or less,
North 76° 34' 10" West 272.6 feet more or less,
North 50° 00' 04" West 177.4 feet more or less,

to a point on the southeast line of Storey Lane (a 200 foot ROW);

THENCE northeastward along the southeast line of said Storey Lane, a distance of 982 feet more or less to the place of beginning and containing approximately 113.0 acres of land.

EXHIBIT "B"

1. Reservation of one-half (1/2) of all mineral rights and royalties of minerals pertaining to a portion of Tract One, retained in a Deed from P. R. Murff to A. H. Daniel, by deed dated September 16, 1946, recorded in Volume 2733, Page 61 of the Deed Records of Dallas County, Texas.

2. Easement from Grady Brown to Texas Power and Light Company, dated August 13, 1948, recorded in Volume 3040, Page 323 of the Deed Records of Dallas County, Texas, affecting a portion of Tract One.

3. Easement from Lamar Hunt Trust Estate to Dallas Power and Light Company dated August 24, 1960, recorded in Volume 5407, Page 625 of the Deed Records of Dallas County, Texas, affecting property in the B. Merrill and Newton Surveys.

4. Right-of-Way easement from Trinity Farm Company to Dallas County Levy Improvement District No. 5, by deed dated July 6, 1928, recorded in Volume 1502, Page 198 of the Deed Records of Dallas County, Texas.

5. Easement from Trinity Farm Securities Company to Dallas County Levy Improvement District No. 5, dated September 11, 1930, filed May 6th, 1932, affecting property in the Howell Survey.

6. Easement from Paul Jamersonto Southwestern Bell Telephone recorded in Volume 1812, Page 351 of the Deed Records of Dallas County, Texas, affecting the Parker Survey.

7. Easement to Texas Power and Light Company by Paul Jamerson, et al, recorded in Volume 2012, Page 303 of the Deed Records of Dallas County, Texas.

8. Easement from Paul Jamerson to Magnolia Petroleum Company, dated August 21, 1930, recorded in Volume 1646, Page 448 of the Deed Records of Dallas County, Texas.

9. Easement from Max Munzesheimer to Magnolia Petro. Co., dated April 5, 1930, recorded in Volume 1627, Page 195 of the Deed Records of Dallas County, Texas.

10. Easement from Lamar Hunt to Dallas Power and Light Company dated April 24, 1959, recorded in Volume 5112, Page 213 of the Deed Records of Dallas County, Texas.

FILED

COUNTY CLERK

'71 DEC 28 PM 2:01

AMERICAN TITLE COMPANY OF DALLAS
P. O. Box #538
Dallas, Texas, 75221. vf.

RETURN TO:

CITY SECRETARY
CITY OF DALLAS
Rm. #205 - MUNICIPAL BLDG.,
DALLAS, TEXAS.

same to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it. Given under my hand and seal of office, this 30th day of Jany. A.D 1901.

Thos. B. Greenwood

{L.S.} Notary Public for Anderson Co Texas.

Filed for Record the 5th day of February A.D 1901 at 2:40 o'clock P.M.

A. S. Jackson, County Clerk
By J.E. Record Deputy

Recorded February 26th 1901.

A. S. Jackson, County Clerk.
By A.F. Lucheinger, Depty.

S. M. Luckett
To } Deed
The City of Dallas

The State of Texas, }
County of Bee.

Know all men by these presents: That I, S. M. Luckett, husband of Mrs. Jewel Luckett who is one of the four heirs of A. H. Link, deceased, of the County of Bee, State of Texas, for and in consideration of the sum of Forty One Hundred & Twenty Five Dollars, to me in hand paid by The City of Dallas, a corporation, the receipt of which is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said The City of Dallas, County of Dallas, state aforesaid, all of the undivided one-fourth interest of my said wife Jewel Luckett in and to all that certain lot, tract or parcel of land lying and being situated in the in the County of Dallas, state aforesaid, about 5 miles northwest from the City of Dallas being part of the Dickerson Parker Survey, and more particularly described as follows: Beginning at the East Corner of a 500 acre tract off of the west end of said Dickerson Parker survey, known as

the Lago tract. Thence S. 45° W. 356 vrs. to the S. corner of the Lago tract. Thence S. 45° E. 1102 vrs. to a stake in the west bank of the Elm Fork of the Trinity river. Thence North 45° E. to the corner of a small tract of land, say 13 acres heretofore sold to W. Hughes. Thence N.W. 45° W. with said Hughes line to a large branch, a stake. Thence up said branch, with its meanderings to the West corner of a 400 acre tract sold to W.B. Taylor by the heirs of Dickerson Parker a stake, on the East bank of the said branch from which a Spanish Oak brs. W. 9 vrs. and another brs. N. 15° E. 9 vrs. Thence North 45° E. with the North-west line of said 400 acre tract 1921 vrs. to a stake in said line, a walnut 6 inches brs. South 28 vrs. W. 8½ vrs. and a Spanish oak 6 in. brs. N. 60° W. 9½ vrs. Thence N. 9° W. 430 vrs. to a stake in the line of the said Dickerson Parker survey, a pecan brs. S. 45° W. 3 vrs. Thence N.W. 45° W. with said line 456 vrs. to the place of beginning, containing 619 acres more or less, and being the same land conveyed to H.B. Link by Isaac Parker by deed dated January 30th 1874 by deed of record in vol. 32, page 788, Records of deeds &c. of Dallas County Texas.

To have and to hold the above described premises together with all and singular the rights and appurtenances thereto in anywise belonging unto the said The City of Dallas, its successors and assigns forever; and I do hereby bind myself, my heirs, executors and administrators to warrant and forever defend all and singular the said premises unto the said The City of Dallas, its successors and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

Witness my hand at Beeville, Texas this 29th day of January A.D. 1901.

{ $4.50 U.S.I.R. Stamps }

S. M. Luckett.

The State of Texas }
County of Bee } Before me, J.C. Crisp a[illegible]

Notary Public in and for Dallas County, Texas, on this day personally appeared Edgar E. Gibson and Lizzie Gibson, wife of Edgar E. Gibson both known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration therein expressed. And the said Lizzie Gibson wife of the said Edgar E. Gibson having been examined by me privily and apart from her husband, and having the same by me fully explained to her, she, the said Lizzie Gibson acknowledged such instrument to be her act and deed, and she declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.
Given under my hand and seal of office, this 4th day of February A.D. 1901.

J. E. R. Chilton Notary Public,
Dallas Co. Texas.

{L.S.}

Filed for Record the 5th day of February 1901 at 12:30 o'clock P.M.

A. S. Jackson, County Clerk
By J. E. Record, Deputy.

Recorded February 26th 1901.

A. S. Jackson, County Clerk
By J. F. Luchsinger, Depty.

E. W. Link & wife
To Deed
The City of Dallas

The State of Texas,
County of Anderson.

Know all men by these presents: That we E. W. Link and wife Mary M. Link, the said E. W. Link being one of the four heirs of H. H. Link, deceased, of the County of Anderson, State of Texas for and in consideration of the sum of Forty One Hundred and Twenty Five Dollars to us in hand paid by The City of

Dallas, a corporation, the receipt of which is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey, unto the said The City of Dallas, of the County of Dallas, state aforesaid, all our undivided one fourth interest in and to all that certain lot, tract or parcel of land lying and being situated in the County of Dallas, state aforesaid, about 5 miles north west from the City of Dallas, being part of the Dickerson Parker survey, and more particularly described as follows: Beginning at the East corner of a 380 acre tract off of the west end of said Dickerson Parker survey, known as the Lagow tract at a stake in the prairie. Thence N. 45° W. 3560 vs. to the N. corner of the Lago tract. Thence S 45° E. 1102 vs. to a stake in the West bank of the Elm Fork of the Trinity River. Thence North 45° E. to the corner of a small tract of land say 13 acres heretofore sold to W. Hughes. Thence N. 45° W. with said Hughes line to a large branch a stake. Thence up said branch with its meanderings to the west corner of a 400 acre tract, sold to W. B. Taylor by the heirs of Dickerson Parker, a stake on the East bank of the said branch from which a Spanish oak brs. W. 9 vrs. and another bears N. 15° E. 9 vrs. Thence North 45° E with the North west line of said 400 acre tract, 792 vs. to a stake in said line a walnut 6 inches brs. S. 28° W. 8½ vs. and a Spanish oak 6 inches bears N. 60° W. 9½ vrs. Thence N. 9° W. 430 vs. to a stake in the line of the said Dickerson Parker survey, a pecan brs. S. 45° W. 3 vs. Thence N. 45° W. with said line 456 vs. to the place of beginning, containing 619 acres of land, more or less and being the same land conveyed to H. H. Link by Isaac Parker & wife January 30th 1874 by deed of record in vol. 32 page 788, records of deeds &c. of Dallas County, Texas. To have and to hold the above described premises, together with all and singular the

rights and appurtenances thereto in anywise belonging unto the said The City of Dallas, its successors and assigns forever; and we do hereby bind ourselves, our heirs, executors and administrators, to warrant and forever defend all and singular the said premises unto the said The City of Dallas, its successors and assigns against every person whomsoever lawfully claiming or to claim the same, or any part thereof.
Witness our hands at Palestine Texas, this 29th day of January A. D. 1901.

{ $1.50 U.S. R. Stamp }

E. W. Link.
Mary M. Link.

The State of Texas, }
County of Anderson, } Before me, Thos. B. Greenwood, a Notary Public in and for said County and State, on this day personally appeared E. W. Link known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.
Given under my hand and seal of office, this 30th day of Jany. A. D. 1901.

Thos B. Greenwood.
{L. S.} Notary Public for Anderson Co. Texas.

The State of Texas, }
County of Anderson. } Before me Thos. B. Greenwood a Notary Public in and for said County, on this day personally appeared Mary M. Link, wife of E. W. Link, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that she executed the same for the purposes and consideration therein expressed. And the said Mary M. Link having been examined by me privily and apart from her husband, and having the said instrument fully explained to her by me, she, the said Mary M. Link acknowledged the

Notary Public in and for said County and State, on this day personally appeared S. M. Luckett, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed. Given under my hand and seal of office, this 31st day of January A. D. 1901.

{L.S.} J. C. Crisp, Notary Public, Bee Co. Texas.

Filed for Record the 5th day of Feby. A. D. 1901 at 2 oclock P M.

A. J. Jackson, County Clerk,
By J. E. Record, Deputy.

Recorded February 26th 1901.

A. J. Jackson, County Clerk.
By B. F. Luckenbach, Depty.

Mrs. Johnnie A. Link
To
Deed
The City of Dallas.

The State of Texas,
County of Dallas. } Know all men by these presents: That I, Mrs. Johnnie A. Link (a feme sole) widow of John A. Link, deceased, who was one of the four heirs of B. M. Link, deceased, of the County of Dallas in the State aforesaid, for and in consideration of the sum of Forty One Hundred & Twenty Five Dollars to me paid by The City of Dallas a corporation as follows: All cash the receipt of which is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said The City of Dallas, of the County of Dallas, State aforesaid, all my undivided one-fourth interest in and to all that certain lot, tract or parcel of land, lying and being situated in the County of Dallas, State aforesaid, about 5 miles Northwest from the City of Dallas being part of the Dickerson Parker survey and beginning at the East corner of a

500 acre tract off of the West end of the aforesaid Dickerson Parker survey known as the Lago tract at a stake in the prairie. Thence S. 45° W. 3560 vs. to the S. corner of the said Lago tract. Thence South 45° E 1102 vs. to a stake on the West bank of the Elm Fork of the Trinity River. Thence North 45° E to the corner of a small tract of land, orig 13 acres heretofore sold to W. Hughes. Thence North 45° W with said Hughes line to a large branch a stake. Thence up said branch with its meanderings to the west corner of a 400 acre tract sold to W. B. Taylor by the heirs of Dickerson Parker, a stake on the East bank of the said branch from which a Spanish oak bears W. 9 vrs and another 8 vrs N. 15° E. 9 vrs. Thence N. 45° E. with the North west line of said 400 acre tract 792 vs. to a stake in said line, a walnut 6 inches bro. South 28° W 8½ vrs. and a Spanish oak 6 inches bears N. 60° W. 9½ vrs. Thence N 9° W. 430 vs. to a stake in the line of the said Dickerson Parker survey, a pecan bro S 45° W. 3 vs. Thence N. 45° W. with said line 456 vs. to the place of beginning, containing 619 acres more or less and being the same land conveyed to H. W. Link by Isaac Parker and wife January 30th 1874 as per deed of record in Vol. 32, page 785 Records of Deeds &c. of Dallas County, Texas.

To have and to hold the above described premises together with all and singular the rights and appurtenances thereto in anywise belonging, unto the said The City of Dallas, its successors and assigns forever, and I do hereby bind myself my heirs, executors and administrators to warrant and forever defend all and singular the said premises unto the said The City of Dallas, its successors and assigns against every person whomsoever lawfully claiming or to claim the same, or any part thereof. Witness my hand at Dallas, Texas, this 29th day of January A. D. 1901. {$4.50 U.S.I.R. Stamp} Johnie N. Link.

The State of Texas,
County of Dallas. } Before me, J. D. Crutcher, a Notary Public in and for said County and State on this day personally appeared Mrs. Johnnie M. Link (a feme sole, widow of John M. Link, deceased known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that she executed the same for the purpose and consideration therein expressed.

Given under my hand and seal of office this 2nd day of February A. D. 1901.

J. D. Crutcher, Notary Public
[L. S.] for Dallas County, Texas.

Filed for Record the 5th day of Feby. A. D. 1901 at 2 40 o'clock P. M.

A. S. Jackson, County Clerk,
By J. E. Record, Deputy

Recorded February 26th 1901.

A. S. Jackson, County Clerk
By F. Luckenbach, Deputy.

Mrs. M. Dancey & husband.
To } Deed
J. D. Lockwell

The State of Texas, }
County of Dallas. }

Know all men by these presents: That I, Mrs. M. Dancey, formerly English, joined by my husband C. E. Dancey of the County of Dallas in the State aforesaid, in consideration of the sum of Twenty-one Hundred and Fifty ~~00~~ Dollars to us in hand paid by J. D. Lockwell, the receipt of whereof is hereby acknowledged, have granted, sold and conveyed, and by these presents do grant, sell and convey unto the said J. D. Lockwell of the County of Dallas and state of Texas all that certain parcel of land lying and being situate in the city and County of Dallas, state of Texas, a part of Lots 3 & 4 in Block 556-C according to Murphy & Bolanz' official map of

Lot No 4 of said Bowser's first addition, therefore, Know all men by these presents: That I, J. W. Thompson the legal and equitable owner and holder of said five notes hereinabove described, in consideration of the sum of fifty ($50) Dollars and other valuable considerations to me in hand paid by said Irene Brady the receipt of which is hereby acknowledged, do hereby release, discharge and quit claim unto the said Irene Brady all my rights, title and interest and estate in and to the property above described, which I have or may be entitled to by virtue of being the owner of said vendor's lien notes, and do hereby declare said lot No 11 released and discharged from any and all liens created by virtue of said notes above described.

Witness my hand this the 21 day of April A.D. 1900.

J. W. Thompson.

The State of Texas } Before me J. C. Taylor a Notary
County of Dallas } Public within and for the County of Dallas, on this day personally appeared J. W. Thompson known to me to be the person whose name is subscribed to the foregoing instrument & acknowledged to me that he had executed the same for the purposes and considerations therein expressed.

Given under my hand and official seal this the 21 day of April A.D. 1900.

(L.S.) J. C. Taylor Notary Public,
(10¢ U.S. I.R. stamp attached) Dallas Co. Tex.

Filed for Record Feb 5th 1901 at 1 o'clock P.M.

A. S. Jackson County Clerk
Dallas County, Texas.

Recorded Feb 26-1901 A. S. Jackson County Clerk
By H. M. Elliston Dy

H. R. Link & wife } The State of Texas } Know all men by
To: Deed } County of Anderson } these presents: That
The City of Dallas } we H. R. Link and wife Ellie Link the said H. R. Link being one of the four heirs of H. H. Link deceased of the County of Anderson, State of Texas for & in consideration of the sum of forty One hundred & twenty five Dollars to us in

hand paid by The City of Dallas, a corporation, the receipt of which is hereby acknowledged have granted, sold and conveyed and by these presents do grant, sell and convey unto the said "The City of Dallas" of the County of Dallas, State aforesaid, all our undivided one fourth interest in and to all that certain lot, tract or parcel of land lying and being situated in the County of Dallas, State aforesaid, about four miles north west from the City of Dallas, being part of the Dickerson Parker survey and more particularly described as follows:

Beginning at the east corner of a 500 acre tract off of the west end of said Dickerson Parker survey, known as the Lago tract at a stake in the prairie Thence S 45° W. 356 vrs to the S corner of the Lago tract. Thence S 45° E. 1102 vrs to a stake in the west bank of the Elm Fork of the Trinity River Thence north 45° E. to the corner of a small tract of land, say 13 acres heretofore sold to W. Hughes. Thence N 45° W with said Hughes line to a large branch a stake, Thence up said branch with its meanderings to the west corner of a 400 acre tract sold to W. B. Taylor by the heirs of Dickerson Parker a stake on the east bank of the said branch from which a Spanish Oak brs W. 9 vrs and another brs N 15° E. 9 vrs Thence north 45° E. with the north west line of said 400 acre tract 792 vrs to a stake in said line a walnut 6 inches brs south 25 vrs W. 5½ vrs and a Spanish Oak 6 inches brs N 60° W. 9½ vrs Thence N 9 W. 430 vrs to a stake in the line of the said Dickerson Parker survey, a pecan brs S 45° W. 3 vrs. Thence N 45° W. with said line 456 vrs to the place of beginning containing 619 acres more or less and being the same land conveyed to H. H. Lusk by Isaac Parker and wife January 30" 1874, by deed of record in Vol 32 page 787 Records of Deeds &c of Dallas County, Texas.

To have and to hold the above described premises together with all and singular the rights & appurtenances thereto in anywise belonging unto the said The City of Dallas, its successors and assigns forever, and we do hereby bind ourselves, our heirs, executors and administrators to warrant and forever defend all and singular the said premises unto the said The City of Dallas, its successors and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

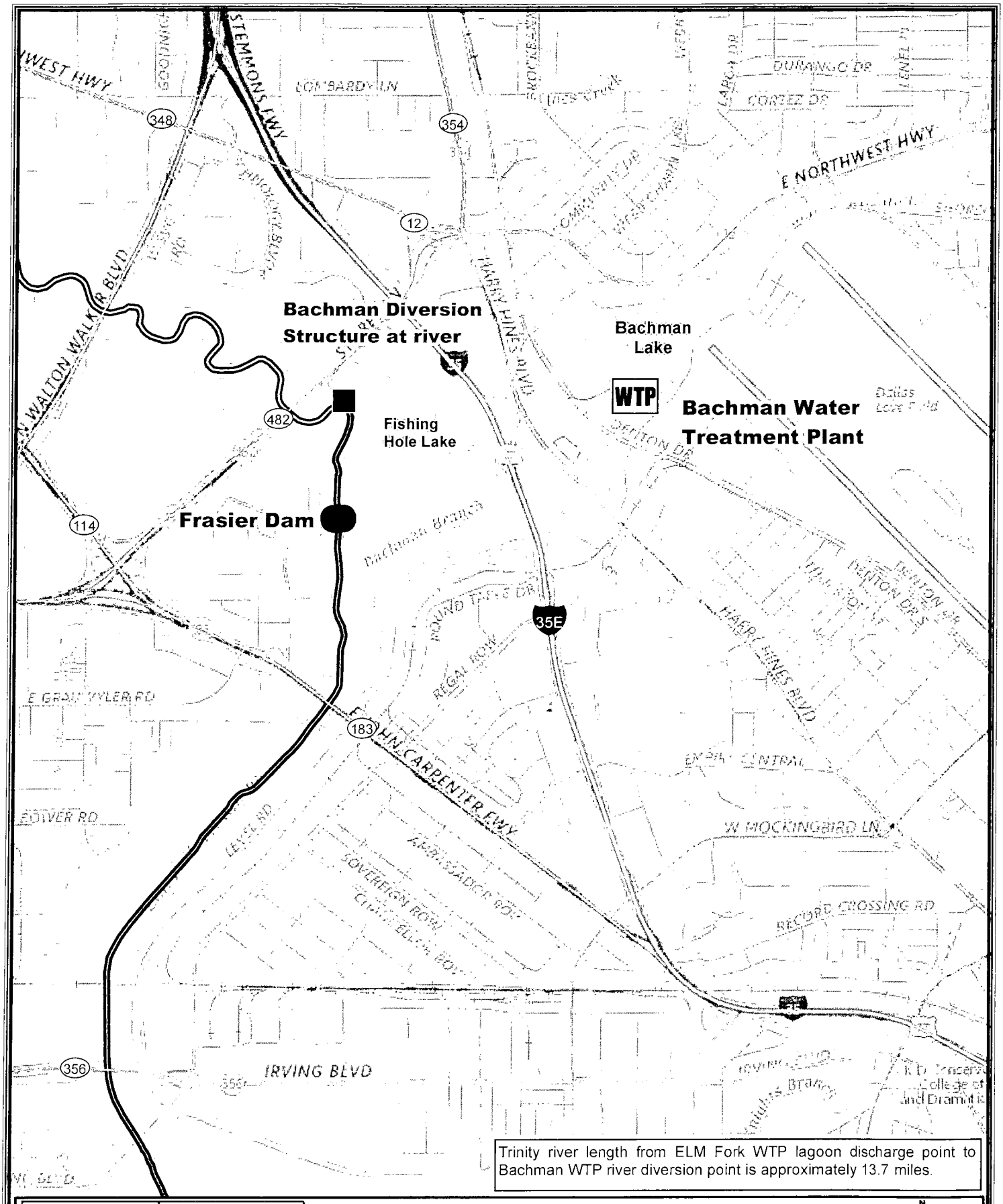
Witness our hands at Palestine Texas this 29 day of January AD. 1901
(44 5/10 U.S. I.R. stamp attached) H. R. Link
Ellie Link

The State of Texas } Before me Thos B. Greenwood a Notary
County of Anderson } Public in & for the County of Anderson in the State of Texas, on this day personally appeared H. R. Link and Ellie Link his wife, both known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that they each executed the same for the purposes and consideration therein expressed, and the said Ellie Link wife of the said H. R. Link having been examined by me privily and apart from her husband and having the same fully explained to her, she, the said Ellie Link acknowledged such instrument to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.
Given under my hand and seal of office this 30 day of January AD. 1901.
(L.S.) Thos B. Greenwood Notary Public
for Anderson County, Texas.
Filed for Record Feb 5-1901 at 2 40 o'clock P.M.
A. S. Jackson County Clerk
By J. E. Record Dy
Recorded Feb. 26-1901 A. S. Jackson County Clerk
By H. M. Elliston Dy

Houston & Texas Cent'l R.R. Co. } The State of Texas } Know all
To: Deed, } County of Harris } men by
City of Dallas } these presents: That the Houston and Texas Central Railroad Company, for and in consideration of the sum of One Hund. Dollars paid by the City of Dallas, and certain covenants & conditions herein named to be kept and performed by the said City of Dallas, also for the benefits and advantages that will accrue to the property owned by the said railroad Company by the making of the improvements hereinafter mentioned, has this day granted, bargained and conveyed and doth by these presents grant, bargain and

WORKSHEET 3.0 (Conti.)

3.0 (2) MAP – Bachman Water Treatment Plant Diversion


Bachman Diversion Structure at river
Bachman Lake
WTP
Bachman Water Treatment Plant
Fishing Hole Lake
Frasier Dam
Trinity river length from ELM Fork WTP lagoon discharge point to Bachman WTP river diversion point is approximately 13.7 miles.
Watershed
Area in Square Mile
Frasier
2557
0
0.3
0.6
1.2
1.8 Miles
N
W
E
S
City of Dallas
Water Utilities Automation & Integration
Elm Fork WTP Discharge to Bachman WTP
Date: 9/19/2019

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 20, 2017

Mr. Zachary Peoples, Assistant Director
City of Dallas
1500 Marilla Street, Room 4AN
Dallas, Texas 75201

Re: City of Dallas, TPDES Permit No. WQ0010060005
(CN600331730; RN101608461)

Dear Mr. Peoples:

Enclosed is a copy of the above referenced water quality permit issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form (if needed) when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit, as applicable.

Should you have any questions, please contact Ms. Sonia Bhuiya of the Texas Commission on Environmental Quality's (TCEQ) Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

David W. Galindo, Director
Water Quality Division

DWG/SB/ml

ccs: TCEQ, Region 4
Mr. Daniel Halter, P.E., Senior Program Manager, City of Dallas, 1020 Sargent Road, Dallas, Texas 7520
Mr. Jim Crowley, Operations Manager, City of Dallas, 1440 Whitlock Lane, Carrollton, Texas 75006

TPDES PERMIT NO.
WQ0010060005
[For TCEQ office use only - EPA I.D. No. TX0002372]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This is a renewal that replaces TPDES Permit No. WQ0010060005 issued on February 29, 2012.

City of Dallas

whose mailing address is

1500 Marilla Street, Room 4 AN
Dallas, Texas 75201

is authorized to treat and discharge filter backwash and wastes from flocculation and sedimentation basins from the City of Dallas Elm Fork Water Treatment Facility, SIC Code 4941

located at 1440 Whitlock Lane, in the City of Carrollton, Dallas County, Texas 75006

directly to Elm Fork Trinity River Below Lewisville Lake in Segment No. 0822 of the Trinity River Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **October 1, 2021**.

ISSUED DATE: January 12, 2017

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 5.0 million gallons per day (MGD).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l (lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Total Suspended Solids	25 (1,043)	35	45	65	One/day	Composite*

* Composite sample is to consist of at least three portions collected over a period of not less than two hours. In the case of intermittent discharges of less than two hours duration, the composite is to consist of at least three portions collected over the duration of the discharge. This provision supersedes the definitions in standard permit conditions No. 3a on page 4 of this permit.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored daily by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10. Effective December 21, 2016, monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to

be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement.
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 169) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be

made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

    f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

TCEQ Revision 08/2008

SLUDGE PROVISIONS

The permittee is authorized to dispose of water treatment sludge only at a Texas Commission on Environmental Quality (TCEQ) registered or permitted land application site, commercial land application site or co-disposal landfill authorized to accept water treatment plant sludge.

The disposal of water treatment sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is permitted or registered with the TCEQ. This provision does not authorize Distribution and Marketing of sludge.

SECTION I. REQUIREMENTS APPLYING TO ALL WATER TREATMENT SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of water treatment sludge in accordance with 30 TAC Chapter 312 Subchapter F and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the water treatment sludge meets the requirements in 40 CFR Part 257 concerning the quality of water treatment sludge disposed of by land application.

2. The permittee shall provide necessary information to the parties who receive the water treatment sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permits Section (MC 148) of the Water Quality Division of any change planned in the water treatment sludge disposal practice.

B. Operation Requirements and Regulated Management Conditions for Water Treatment Sludge

The operation and maintenance of a water treatment sludge disposal site must be in accordance with 30 TAC Chapter 312 Subchapter F and 40 CFR Part 257 as it relates to solid waste disposal. Specifically, land application of water treatment sludge shall meet the following requirements.

1. Land application of water treatment sludge shall not cause or contribute to the harm of a threatened or endangered species of plant, fish, or wildlife or result in the destruction or adverse modification of the critical habitat of a threatened or endangered species after application to agricultural land.

2. Land application of water treatment sludge shall not restrict the flow of the base flood, reduce the temporary water storage capacity of the flood plain, or result in washout of solid waste.

3. Land application of water treatment sludge shall be disposed of by a method and under conditions that prevents runoff beyond the active application area and protects the quality of the surface water.

4. Land application of water treatment sludge disposal shall not contaminate an underground drinking water source beyond the site boundary, as specified in 40 CFR 257.3-4.

5. Land application of water treatment sludge disposal practices shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site.

C. Testing Requirements

1. Water treatment sludge shall be tested prior to sludge disposal in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method, which receives the prior approval of the TCEQ for the contaminants listed in Table 1 of 40 CFR Section 261.24. Water treatment sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of water treatment sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration, Review and Reporting Division (MC 129) and the Regional Director **(MC Region 4)** within 7 days after failing the TCLP Test. The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. The reporting period is from July 31 of the previous year to August 1 of the current year. This annual report shall be submitted to the TCEQ Regional Office **(MC Region 4)** and the Municipal Wastewater Permits Team (MC 148) of the Water Quality Division by September 30 of each year.

2. Water treatment sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 312. The following pollutant limits shall apply to disposal of water treatment sludge on land used for the production of food chain crops.

   a. Cadmium - Disposal of water treatment sludge on a site within three feet of the surface of land used for the production of food chain crops shall not exist or occur, unless in compliance with all requirements of the following paragraphs (i) or (ii).

      i. (A) The pH of the water treatment sludge and soil mixture must be 6.5 or greater at the time of each application of sludge, except for water treatment sludge containing cadmium concentrations of 2 mg/kg (dry weight) or less.

(B) The annual application rate for cadmium in sludge shall not exceed 0.5 kilograms per hectare.

(C) The maximum cumulative application rate of cadmium, in kg/ha based on background soil pH, from sludge does not exceed the following levels:

Background Soil pH	Soil Cation Exchange Capacity (CEC) meq/100 g of soil		
	0 - 5	5 - 15	>15
pH < 6.5	5	5	5
pH > 6.5	5	10	20

(D) The maximum cumulative application rate of cadmium from sludge on soils with a background pH of less than 6.5 shall not exceed the values listed in the table below, provided that the pH of the **sludge and soil mixture** is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Parameter	Soil Cation Exchange Capacity (CEC) meq/100 g of soil		
	0 - 5	5 - 15	>15
Cadmium, kg/ha	5	10	20

ii. (A) The only food chain crop produced is animal feed.

(B) The pH of the sludge and soil mixture is 6.5 or greater at the time of sludge application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown.

(C) A facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans and describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses must be developed.

(D) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received sludge at high cadmium application rates and that food chain crops should not be grown, due to a possible health hazard.

b. Polychlorinated Biphenyls (PCBs) - Water treatment sludge containing concentrations of PCBs equal to or greater than 10 mg/kg (dry weight) is incorporated into the soil when applied to land used for producing animal feed, including pasture crops for animals raised for milk. Incorporation of the solid waste into the soil is not required if it is assured that the PCBs

content is less than 0.2 mg/kg (actual weight) in animal feed or less than 1.5 mg/kg (fat basis) in milk.

D. Record Keeping Requirements

The permittee, pursuant to 30 TAC Section 312 Subchapter F shall retain a record of all water treatment sludge testing performed and the concentration of Cadmium and PCBs and shall retain the information for a minimum of five (5) years. Records shall be readily available for review or submittal to the Executive Director upon request.

E. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Municipal Wastewater Permits Team (MC 148) of the Water Quality Division and the Regional Office **(MC Region 4)** by September 30 of each year. The reporting period is from July 31 of previous year to August 1 of the current year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Annual sludge production in dry tons/year.
2. Amount of sludge disposed of in dry tons/year.
3. Identity of hauler and TCEQ transporter registration number.
4. Owner and location of the disposal site(s).
5. Certification that the water treatment sludge meets the requirements of 40 CFR Part 257 concerning the quality of the sludge being land applied.
6. The TCEQ Registration or Permit Number for the disposal site(s).
7. Toxicity Characteristic Leach Procedure (TCLP) results.

The above records shall be maintained on-site on a monthly basis, for a period of at least five (5) years and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION II. REQUIREMENTS APPLYING TO ALL WATER TREATMENT SLUDGE DISPOSED OF IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of water treatment sludge in accordance with 30 TAC Chapter 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the water treatment sludge meets the requirements in 30 TAC Chapter 330 concerning the quality of the sludge disposed of in a Municipal Solid Waste Landfill (MSWL).

B. The permittee shall ensure that the water treatment sludge meets the requirements in 40 CFR Part 258 concerning the quality of the sludge disposed of in a MSWL.

C. If the permittee generates water treatment sludge and supplies that sludge to the owner or operator of a MSWL for disposal, the permittee shall provide to the owner or operator of the MSWL appropriate information needed to be in compliance with the provisions of this permit.

D. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permits Section (MC 148) of the Water Quality Division of any change planned in the water treatment sludge disposal practice.

E. Water treatment sludge shall be tested prior to sludge disposal in accordance with the method in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method, which receives the prior approval of the TCEQ for the contaminants listed in Table 1 of 40 CFR Section 261.24. Water treatment sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of water treatment sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate that the water treatment sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the **TCLP tests).** A written report shall be provided to both the TCEQ Registration, Review, and Reporting Division (MC 129) and the Regional Director **(MC Region 4)** within 7 days after failing the TCLP Test. The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. The reporting period is from July 31 of the previous year to August 1 of the current year. This annual report shall be submitted to the TCEQ Regional Office **(MC Region 4)** and the Municipal Wastewater Permits Team (MC 148) of the Water Quality Division by September 30 of each year.

F. Water treatment sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

G. Record keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

H. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Municipal Wastewater Permits Team (MC 148) of the Water Quality Division and the Regional Office **(MC Region 4)** by September 30 of each year. The reporting period is from July 31 of previous year to August 1 of the current year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Toxicity Characteristic Leaching Procedure (TCLP) results.

2. Annual sludge production in dry tons/year.

3. Amount of sludge disposed of in a municipal solid waste landfill in dry tons/year.

4. Amount of sludge transported interstate in dry tons/year.

5. A certification that the water treatment sludge meets the requirements of 30 TAC Chapter 330 concerning the quality of the sludge disposed of in a municipal solid waste landfill.

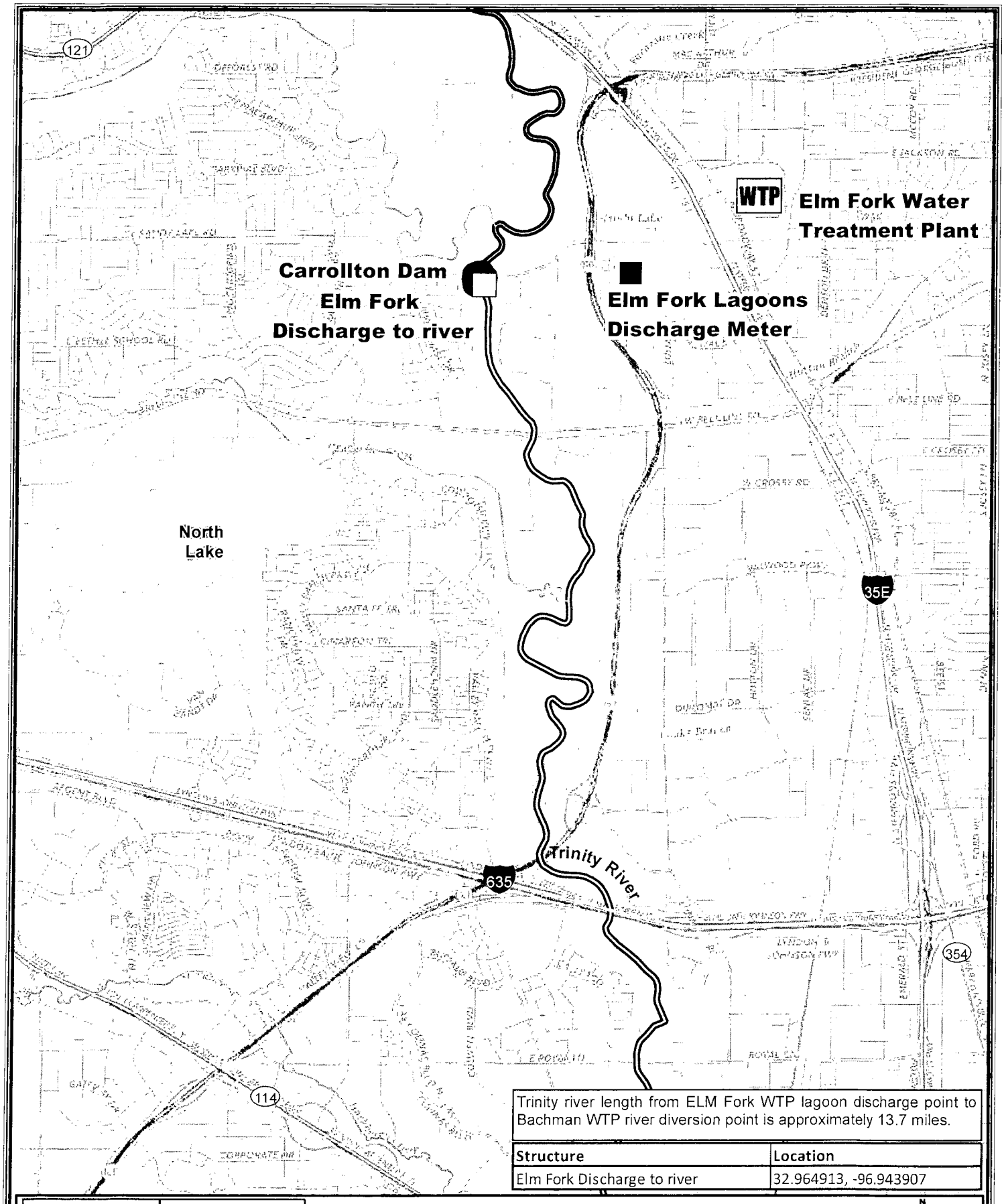
6. Identity of hauler(s) and transporter registration number.

7. Owner of disposal site(s).

8. Location of disposal site(s).

9. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis, for a period of at least five (5) years and shall be made available to the Texas Commission on Environmental Quality upon request.



Trinity river length from ELM Fork WTP lagoon discharge point to Bachman WTP river diversion point is approximately 13.7 miles.

Structure	Location
Elm Fork Discharge to river	32.964913, -96.943907

Watershed	Area in Square Mile
Frasier	2557

0 0.3 0.6 1.2 1.8 2.4 Miles

N W E S

City of Dallas
Water Utilities Automation & Integration

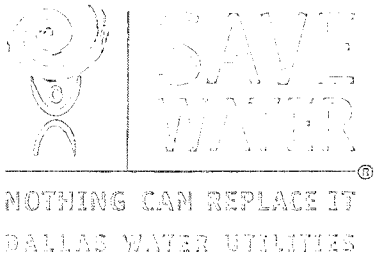
Elm Fork WTP Discharge to Bachman WTP

Date: 4/10/2019

Bachman Water Treatment Plant Diversion Point

Upstream View from the Diversion Point

Down Stream View from the Diversion Point



City of Dallas

2019 Water Conservation Plan

Adopted by Resolution of the
Dallas City Council on April 24, 2019

Dallas Water Utilities
1500 Marilla, Room 2AN
Dallas, Texas 75201

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APPENDIX SCHEDULE

Water Conservation Plan for the City of Dallas Water Utilities

1.0 Introduction

Dallas Water Utilities (DWU) is a major retail and wholesale provider of water in North Texas, currently serving over 2.5 million people within a 699 square mile service area. This includes all of the City of Dallas, 23 wholesale treated water customers, and five wholesale raw water customers located in the metropolitan area surrounding Dallas.

Dallas has actively procured water supplies, constructed reservoirs, and developed water treatment facilities which make it possible for DWU to provide water to its customers. In Fiscal Year (FY) 2017-2018, DWU delivered over 142 billion gallons of treated water, over 62 billion gallons of treated wastewater and approximately 9 billion gallons of untreated water. As the regional population grows, so grows water demand. To meet that demand, DWU must plan to increase the available water supply and expand. its transmission, treatment, and distribution facilities. DWU considers water conservation an integral part of this planning process. The 2014 Dallas Long Range Water Supply Plan (2014 LRWSP) identified and recommended conservation as a water management strategy. Of the recommended strategies, water conservation represents approximately 12% of Dallas' recommended future water supply.

The City of Dallas has had a water conservation program since the early 1980s. In 2001, Dallas increased its conservation efforts with the amendment of CHAPTER 49, "WATER AND WASTEWATER," of the Dallas City Code to include, CONSERVATION MEASURES RELATING TO LAWN AND LANDSCAPE IRRIGATION.

In 2016, DWU developed its *Water Conservation Five-Year Work Plan* (2016 Work Plan) an update to its *2010 Water Conservation Five-Year Strategic Plan.* The 2016 Work Plan includes phased implementation of best management practices (BMPs). This Water Conservation Plan incorporates data and strategies from the 2016 Work Plan.

1.1 State of Texas Requirements

The Texas Administrative Code Title 30, Chapter 288 (30 TAC § 288) requires holders of an existing permit, certified filing, or certificate of adjudication for the appropriation of surface water in the amount of 1,000 acre-feet a year or more for municipal, industrial, and other non-irrigation uses to develop, submit, and implement a water conservation plan and to update it according to a specified schedule. As such, DWU is subject to this requirement. Since DWU provides water as a municipal public and wholesale water supplier, DWU's Water Conservation Plan must include information necessary to comply with Texas Commission on Environmental Quality (TCEQ) requirements for each of these designations.

The requirements of Subchapter A that must be included in the City of Dallas Water Conservation Plan are summarized below.

- ***Minimum Requirements for Municipal Public and Wholesale Water Suppliers***

  - Utility Profile: Includes information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data. (Appendices A-C)

  - Description of the Wholesaler's Service Area: Includes population and customer data, water use data, water supply system data, and wastewater data. (Figure 3-1)

  - Goals: Specific quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal and residential use, in GPCD. The goals

established by a public water supplier are not enforceable under this subparagraph. (Sections 2.2 and 2.3)

- Accurate Metering Devices: The TCEQ requires metering devices with an accuracy of plus or minus 5 percent for measuring water diverted from source supply. (Section 5.1)

- Universal Metering, Testing, Repair, and Replacement: The TCEQ requires that there be a program for universal metering of both customer and public uses of water for meter testing and repair, and for periodic meter replacement. (Section 5.2)

- Leak Detection, Repair, and Control of Unaccounted for Water: The regulations require measures to determine and control unaccounted-for water. Measures may include periodic visual inspections along distribution lines and periodic audits of the water system for illegal connections or abandoned services. (Sections 5.3 and 5.4)

- Continuing Public Education Program: TCEQ requires a continuing public education and information program regarding water conservation. (Section 5.5)

- Non-Promotional Rate Structure: Chapter 288 requires a water rate structure that is cost-based, and which does not encourage the excessive use of water. (Section 5.8 and Appendix E)

- Reservoir Systems Operational Plan: This requirement is to provide a coordinated operational structure for operation of reservoirs owned by the water supply entity within a common watershed or river basin in order to optimize available water supplies. (Section 5.10)

- Wholesale Customer Requirements: The water conservation plan must include a requirement in every water supply contract entered into or renewed after official adoption of the Water Conservation Plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Title 30 TAC Chapter 288. (Section 5.9)

- A Means of Implementation and Enforcement: The regulations require a means to implement and enforce the Water Conservation Plan, as evidenced by an ordinance, resolution, or tariff, and a description of the authority by which the conservation plan is enforced. (Sections 5.0 through 5.17)

- Coordination with Regional Water Planning Groups: The water conservation plan should document the coordination with the Regional Water Planning Group for the service area of the public water supplier to demonstrate consistency with the appropriate approved regional water plan. (Section 5.12 and Appendix I).

➢ ***Additional Requirements for Cities of More than 5,000 People***

- Program for Leak Detection, Repair, and Water Loss Accounting: The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, storage, delivery, and distribution system. (Sections 5.3 and 5.4)

- Record Management System: The plan must include a record management system to record water pumped, water deliveries, water sales and water losses which allows for the desegregation of water sales and uses into the following user classes (residential; commercial; public and institutional and industrial). (Sections 5.4 and 5.13)

- Requirements for Wholesale Customers: The plan must include a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in 30 TAC § 288. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of 30 TAC § 288. (Section 5.9)

- Additional Conservation Strategies: TCEQ Rules also list additional optional but not required conservation strategies which may be adopted by suppliers. The following optional strategies are included in this plan:

    - Conservation-Oriented Water Rates. (Section 5.8 and Appendix E) and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
    - Ordinances, Plumbing Codes and/or Rules on Water Conservation Fixtures. (Section 5.14)
    - Fixture Replacement Incentive Programs. (Sections 5.7.1 through 5.7.3)
    - Reuse and/or Recycling of Wastewater and/or Gray Water. (Sections 5.16 through 5.16.3)
    - Ordinance and/or Programs for Landscape Water Management (Sections 5.5.4 and 5.14).
    - Method for Monitoring the Effectiveness of the Plan.

This Water Conservation Plan sets forth a program of long-term measures under which the City of Dallas can improve the overall efficiency of water use and conserve its water resources. Short-term measures which respond to specific water management conditions (i.e., periods of drought, unusually high water demands, unforeseen equipment or system failure, or contamination of a water supply source) on the other hand, are described in the City of Dallas Drought Contingency Plan.

1.2 The Water Conservation Planning Process

Water conservation has increasingly been an important element of Dallas's long-range water supply strategy. Since adoption of the water conservation ordinance relating to lawn and landscape irrigation in October of 2001, Dallas has dramatically increased its efforts to promote water conservation. Since 2002, Dallas has had a broad-based media campaign to increase public awareness on water efficiency, particularly relating to outdoor use. This ongoing campaign has expanded to a regional campaign, shared with the Tarrant Regional Water District. Since the 2016 Water Conservation Five-Year Work Plan (Work Plan), DWU has continued to improve upon its diverse menu of programs with an ongoing, dynamic approach to conservation whereby programs are continually measured and evaluated systematically for effectiveness and efficiency.

This Water Conservation Plan is heavily based on the data and information gathered in the 2016 Work Plan. This included review of numerous water conservation programs, initiatives, data and literature, as well as input from industry personnel. The process for development of the 2016 Work Plan can be outlined as follows:

- Analyzed Dallas Water Utilities data;
- Reviewed water conservation programs in other large cities;
- Reviewed Texas Regulations pertaining to Water Conservation;

- Reviewed City of Dallas water system and associated master plans;
- Developed potential water conservation strategies;
- Evaluated water conservation strategies; and
- Sought input from stakeholder groups.

1.3 Organization of the Water Conservation Plan

The following information and procedures are provided in this plan:

- **Section 2.0, Water Conservation Planning Goals**, describes the benefits of water conservation, DWU's water conservation planning goals, and the specific, water demand reduction goals established by DWU for this Water Conservation Plan, including quantified five- and ten-year water loss and GPCD reduction goals.
- **Section 3.0, Population and Per Capita Water Demand Forecasts**, identifies DWU's wholesale customers, provides populations and per capita water demand projections, and discusses the impact wholesale customers will have on future water demand.
- **Section 4.0, Description of the DWU Water System**, describes DWU's water supply sources, water treatment plants, treated water storage and distribution systems, and wastewater treatment plants.
- **Section 5.0, DWU's Water Conservation Program**, describes DWU's existing water conservation program and enhancements as well as new conservation measures that are likely to be implemented.
- **Appendices A through F** provide the completed TCEQ Utility Profiles for Municipal Public Water Suppliers and Wholesale Public Water Suppliers, water supply system data, an implementation schedule, Dallas' Standard Water Rates and service area map.

2.0 Water Conservation Planning Goals

The objective of this Water Conservation Plan is to achieve efficient use of water through practices and measures that reduce water consumption and water losses and increase water reuse. Meeting this objective will allow available water supplies and existing infrastructure to be extended into the future.

2.1 Benefits of Water Conservation

A well-designed Water Conservation Plan will provide a blueprint for efficient water use. The benefits of water conservation not only include avoided costs, but include others benefits that hold significant importance in terms of value. Benefits of water conservation include:

- Delaying the need to develop expensive future water supplies. Costs associated with developing new water supplies (or purchasing new water) are numerous. These can include capital costs for construction of reservoirs, pumping facilities, pipelines, treatment plants, water storage, and related facilities; costs of obtaining water rights and permits; and operational costs such as labor, energy, and chemicals. To illustrate this fact the water demand projection in the 2014 LRWSP was on average, over the planning horizon (2020 to 2060), 19.3% lower primarily due to Dallas' conservation efforts
- Extending the life of existing water supplies and infrastructure. When water demands are maintained or reduced through conservation, higher system pressure is avoided. Without conservation, pressures within the water system will increase in localized areas to meet increasing

customer demands. Increased pressures within an aging infrastructure will mean more leaks from the system.

- Reduced peak requirements. A water system is sized to meet its customers' peak demands. When peak demands are reduced through water conservation, part of the system's capacity is available for other water customers. This, in effect, increases the base capacity of the system.
- Lowered capital and operating costs of the existing system. The need for expanding the water treatment and distribution system is delayed or avoided. Operational costs, such as power and chemicals, are also reduced.

Other benefits include positive environmental effects, improving customer good will and promoting a positive image for the City of Dallas.

2.2 DWU's Water Conservation Planning Goals

Listed below are many of the planning goals considered important to DWU during the water conservation planning process:

- Reduce seasonal peak demands
- Reduce water loss and waste
- Decrease consumption measured as gallons per capita per day (GPCD)
- Maintain quality of life
- Allow continued economic growth and development
- Maintain public education for a heightened public awareness of water conservation in Dallas and the surrounding region
- "Lead by example" by continuing to upgrade city facilities with water efficient fixtures, landscapes, and irrigation systems wherever possible
- Facilitate regional conservation efforts among DWU wholesale customer cities and neighboring municipalities, districts and agencies
- Establish the foundation for continuation of water savings targets for the following five-year period
- Remain consistent with the Region C Water Plan
- Incorporate, to the extent practicable, measures identified in the Texas Water Development Board's (TWDB's) best management practices (BMP) Guide.

2.3 Quantified Five- and Ten-Year Goals for Water Savings

Specific elements of the Water Conservation Plan, including planned initiatives, are described in Section 5.0. The development of the planned initiatives involved the identification and examination of numerous conservation strategies. These strategies were derived from several sources, including state agency directives, regional water planning groups, water conservation literature, water conservation programs used by other municipalities, and the City's existing Work Plan.

Targeted water savings are based on the planned BMPs, historical water use patterns, literature values, and experience with other utilities. Savings include the combined efforts of all program elements and components.

Table 2-1: City of Dallas Five- and Ten-Year Goals for Water Savings

	Historic 5-yr Average	Baseline	5-yr Goal for Year 2024	10-yr Goal for Year 2029
Total GPCD	181.8	181.8	172.89	164.41
Residential GPCD	67.8	67.8	64.48	61.31
Water Loss GPCD	31.8	31.8	30.24	8.76
Water Loss (Percentage)	18.11%	18.11%	10%	10%

The "Total" GPCD five- and ten-year targets (Table 2-1) include water use by DWU industrial customers. However, Dallas also uses other metrics to track the effectiveness of its water conservation efforts, including:

- Non-industrial per capita water use. Exclusive of water use by industrial customers, the five-year rolling average per capita water use in fiscal year 2017-18 was 181.8 GPCD.
- Residential per capita water use. Including single-family and multi-family residential uses, the five-year rolling average per capita water use in fiscal year 2017-18 was 67.8 GPCD.

3.0 Population Forecasts and Per Capita Water Use

3.1 DWU's Customer and Population Forecast

DWU supplies retail treated municipal water to the City of Dallas. The 2018 estimated population of the City of Dallas was 1,286,380, according to the North Central Texas Council of Governments (NCTCOG). DWU supplies wholesale treated municipal water to 23 customer cities or entities and serves five wholesale raw water customers (one customer receives both treated and raw water). These wholesale customers are primarily located in Dallas, Denton, and Tarrant counties; however, portions extend into Collin, Ellis, and Kaufman counties. A map of the DWU service area, identifying the wholesale customers, is shown in Figure 3-1. The 2018 estimated total population of the wholesale customers was approximately 1,174,110, according to NCTCOG. The total treated water population served for the past five years, based on NCTCOG population estimates, is illustrated in Table 3-1.

3.2 Long-Range Water Planning Efforts

The City of Dallas conducts long-range water planning efforts on a regular basis in order to maintain a reliable supply that meets the demand of the service area. The 2014 LRWSP, includes projected population, per capita consumption, and total demand projections for Dallas and its wholesale customers. The updated population projections are presented in Table 3-2.

Figure 3-1: Dallas Water Utilities Service Area

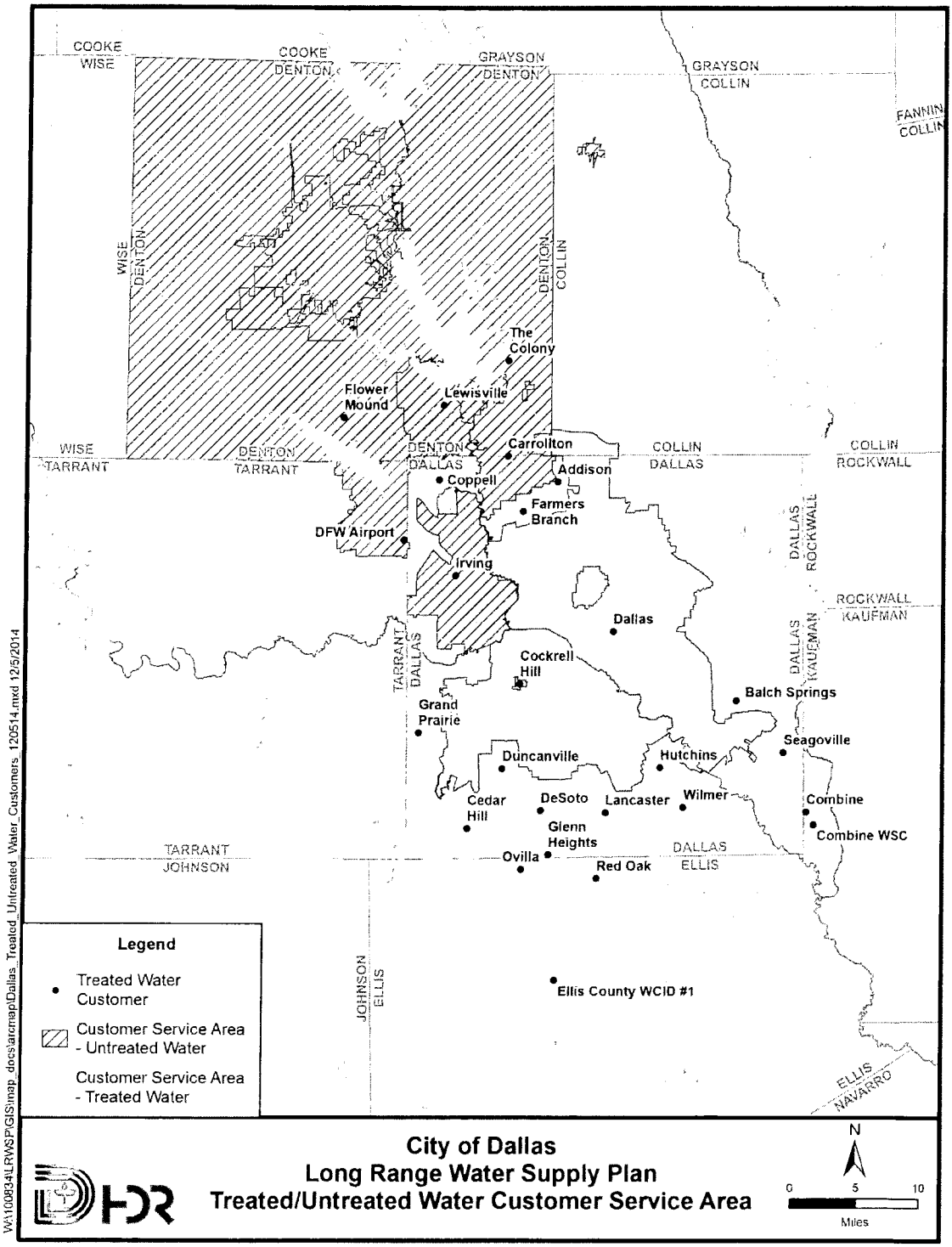


Table 3-1: Population Served (Retail and Wholesale Customers)

Year	2014	2015	2016	2017	2018
Total Population	2,469,220	2,493,030	2,345,170	2,431,140	2,460,490

Table 3-2: Population Projections for City of Dallas and Customer Cities

City/Region	2020	2030	2040	2050	2060	2070
City of Dallas	1,242,135	1,347,717	1,531,681	1,707,057	1,841,064	1,905,498
Current Wholesale Customer Cities	1,820,739	2,179,474	2,464,242	2,781,101	3,100,019	3,430,458
Total	3,062,874	3,527,194	3,995,923	4,488,158	4,941,083	5,335,956

3.3 Impact of Wholesale Water Customers on Water Demand

Wholesale water customers account for a significant portion of DWU's water demand. These customers currently use approximately 40 percent of all water (treated and untreated) and 33 percent of treated water supplied by DWU. By year 2070, use by DWU's current wholesale water customers could increase to approximately 50 percent of all water and 62 percent of treated water. Therefore, water demand reductions by DWU's wholesale customers are considered essential if DWU is to achieve its long-range water supply objectives.

Strategies to address this challenge are discussed in Section 5.5 *(Continuing Public Education Program)* and *Section 5.9 (Water Conservation Provisions in Wholesale Water Supply Contracts)*.

4.0 Description of the DWU Water System

DWU has supplied water to meet the needs of the City of Dallas since 1881. Additionally, DWU currently supplies treated water to 23 wholesale customers and untreated water to an additional five wholesale customers. Dallas meets these needs through a system of surface water reservoirs and through its transmission, treatment, and distribution facilities. Recycled water projects, existing and proposed, are also components of the DWU water system.

4.1 Water Supply Sources

DWU has seven surface water reservoirs, located in three geographically diverse river basins. Of the seven surface water reservoirs, six are currently connected to DWU's system with the seventh being scheduled for connection by 2027. DWU can balance the level of use in each connected reservoir to ensure that the supply of any single reservoir will not be prematurely exhausted.

The reservoirs comprising DWU's system are subdivided into western reservoirs and eastern reservoirs. This designation corresponds to DWU's overall water treatment system infrastructure, which includes the two western water treatment plants, Bachman Water Treatment Plant (WTP) and Elm Fork WTP, and one eastern water treatment plant, East Side WTP. DWU's distribution system is one integrated system which

the three water treatment plants feed into. A detailed list of City of Dallas Water Rights is included in Appendix D.

4.1.1 Western System

The reservoirs in the western system in which DWU holds water rights include:

- Ray Roberts Lake
- Lewisville Lake
- Grapevine Lake
- Elm Fork Channel of the Trinity River (above Frazier Dam)

DWU also holds water rights for uncontrolled portions of the Elm Fork of the Trinity River watershed (i.e., areas located downstream of Lewisville Lake and Grapevine Lake which contribute stream flow to DWU's water supply diversion points on the Elm Fork).

Additionally, DWU holds water rights in Lake Palestine, but this reservoir is not presently connected to the DWU Water System. Lake Palestine, which is physically located southeast of Dallas, will be connected to the Western System through the Bachman WTP. This connection is scheduled for 2027.

4.1.2 Eastern System

The reservoirs in the eastern system in which Dallas holds water rights and/or supply contracts include:

- Lake Ray Hubbard
- Lake Tawakoni
- Lake Fork
- Lake Palestine (unconnected)

DWU holds water rights and a water supply contract in Lake Palestine, but this reservoir is not presently connected to the DWU water system. In addition, DWU treats raw water from Lake Jim Chapman for the City of Irving and delivers treated water to the City of Irving.

4.1.3 Others

DWU holds storage and diversion rights for White Rock Lake, located on White Rock Creek, in northeastern Dallas. The City of Dallas also has permitted reuse of return flows from the City of Lewisville Wastewater Treatment Plant (WWTP) and Town of Flower Mound WWTP in the Elm Fork of the Trinity River and from Dallas' Southside and Central WWTPs in the Trinity River.

Table 4-1 presents a summary of the current water rights associated with each of the reservoirs comprising DWU's raw water sources. A listing of DWU reservoirs is located in Appendix C.

4.2 Water Treatment Plants

DWU maintains three water treatment plants (Elm Fork, Bachman, and East Side) serving both retail and wholesale customers. The treatment plants have a combined treatment capacity of 900 million gallons per day (MGD) and a current total firm pumping capacity of 905 MGD.

The Elm Fork Water Treatment Plant (WTP) is located in Carrollton near the intersection of I-35 East and Whitlock Lane. The plant has a rated treatment capacity of 310 MGD with a high-service pumping capacity of 324 MGD. The plant receives gravity flow through the Elm Fork of the Trinity River from Ray Roberts Lake, Lewisville Lake, and Grapevine Lake. The intake structure, located north of the Carrollton Dam, diverts water by gravity flow to two low-service pump stations. One pump

station is off-site and the other is on the plant site. The raw water is then pumped to the ozone application facility located at the plant.

Table 4-1: Summary of Available Water Supply Sources

	Source	Amount Authorized (MGD)	Firm Yield Available to DWU (MGD)
Surface Water	Lake Ray Hubbard	186.9	50.0
	Lewisville Lake	491.0	162.0
	Ray Roberts Lake	582.2	
	Elm Fork Run-of River	19.4	
	Grapevine Lake	75.4	12.8
	Reuse	220.7	95.3 [a,b]
Groundwater	NA	--	--
Contracts	Sabine River Authority – Lake Tawakoni	164.8	157
	Sabine River Authority – Lake Fork	107	107[b]
	Upper Neches River Municipal Water Authority – Lake Palestine	102.0	102[c]
Other	NA	--	--

[a] Yield is based on 2018 annual wastewater discharges with Water Reuse Permit 12468B conditions and restrictions. This number will vary annually depending upon discharge.
[b] Not fully connected
[c] Not connected

The Bachman WTP is located in Dallas, Texas, north of Love Field Airport and adjacent to Bachman Lake. Bachman WTP is Dallas' oldest operating water treatment plant with a rated treatment capacity of 150 MGD, a storage capacity of 9.5 million gallons (MG), and a high-service pumping capacity of 180 MGD. Raw water is diverted from the Elm Fork of the Trinity River through Fishing Hole Lake to a raw water pump station located off-site of the water treatment plant. The raw water is then pumped to the ozone application facility located at the plant.

The East Side WTP is located in Sunnyvale, Texas. The plant is Dallas' largest water treatment plant with a rated treatment capacity of 440 MGD and a firm raw water pumping capacity of 500 MGD. The plant receives raw water from three reservoirs- Lake Ray Hubbard, Lake Tawakoni and Lake Fork via

three raw water pump stations and one balancing reservoir. From the east, the Iron Bridge Pump Station, located at Lake Tawakoni, and the Lake Fork Pump Station transport raw water to the Tawakoni Balancing Reservoir (TBR). From TBR, raw water flows by gravity through two water lines to the ozone application facility at the plant. The Forney Raw Water Pump Station transports raw water from Lake Ray Hubbard directly to the ozone application facility utilizing two pressurized lines.

Several improvements are currently under consideration to increase the overall capacity of the eastern system including the construction of new 144-inch raw water pipelines from Lake Tawakoni to the TBR and from TBR to the East Side WTP as well as treatment capacity improvements at the East Side WTP to increase the plant's rated capacity to 540 MGD.

4.3 Treated Water Storage and Distribution Systems

The DWU distribution system is divided into nine major pressure zones (Central Low, North High, South High, East High, Pleasant Grove, Red Bird High, Renner High, Trinity Heights and Cedar Dale) with several intermediate areas of service supplied via inline boosters and pressure reducing valves. Each pressure zone includes one or more ground/elevated storage tanks that are designed to act both as pressure equalizer and fire protection storage within the area.

Once water has been treated at one of the three DWU treatment plants (Bachman; Elm Fork; East Side), the finished water is then pumped into the distribution system. Transfers from treatment plants are accomplished by means of "high service" pumps that are located at the plant sites and throughout the system. These "high service" stations are supplied directly from the plant clear wells. There are 30 pump stations, 11 clear wells, 12 ground storage reservoirs, and nine elevated storage tanks in the Dallas distribution system.

The treatment plant clear wells have a combined storage capacity of 90 MG; the ground storage reservoirs and elevated storage tanks have a total 178.4 MG and 15.5 MG, respectively. The total combined storage capacity of the system is approximately 260.4 MG.

DWU's treated water distribution system consists of approximately 4,982 linear miles of pipe. The capacity of the treated water distribution system is constantly being upgraded and re-assessed to improve the ability of the distribution system to meet customers' needs and to replace aging infrastructure.

4.4 Wastewater Treatment Plants

DWU operates two wastewater treatment plants (WWTPs) - Central and Southside - that serve the City of Dallas as well as 11 wholesale wastewater customer cities. The WWTPs have a combined annual average flow permitted capacity of 280 MGD with 545 MGD 2-hour peak. A general description of the plants is as follows:

- Central WWTP is currently rated at 170 MGD and is located four miles south of downtown Dallas. The Central WWTP permit includes a future capacity of 200 MGD. The annual average flow for FY 2017-18 was 88.47 MGD. The Central WWTP consists of two parallel treatment trains known as the Dallas Plant and White Rock Plant. Each has influent pump stations, preliminary treatment facilities, primary clarification, trickling filters, and secondary clarifiers. The combined flow from the Dallas and White Rock plants is then pumped to common aeration basins, final clarifiers, chlorination, filtration, and de-chlorination facilities. Sludge from the Central WWTP is pumped approximately 13 miles to the Southside WWTP for additional treatment.

- Southside WWTP is currently permitted at 110 MGD and is located 18 miles southeast of downtown Dallas. The annual average flow for FY 2017-18 was 52 MGD. The Southside WWTP consists of an influent pump station, preliminary treatment facilities, primary clarification, aeration basins, secondary clarifiers, chlorination, filtration, and dechlorination facilities. The sludge handling facilities at the Southside WWTP include solids thickening, anaerobic digestion, solids dewatering, and dedicated land disposal.

A small portion of the city's wastewater is transported to the Trinity River Authority (TRA) Central Regional Wastewater Treatment Facility and to the City of Garland Duck Creek WWTP. Additional DWU wastewater system data is presented in the TCEQ's Utility Profiles for Municipal and Wholesale Suppliers provided in Appendix A and Appendix B.

5.0 DWU's Water Conservation Program

DWU continues to be a leader in water conservation efforts in the North Texas Region. DWU was the first in North Texas to implement mandatory Time of Day and Maximum Twice-Weekly watering requirements, and the first to have a public awareness campaign. Additionally, DWU continues to expand its diverse menu of incentive-based programs, public education and outreach strategies. Most recently, DWU revamped its SaveDallasWater.com website to reflect a fresh approach to interfacing with the public and a proactive social media presence.

This section provides a description of DWU's existing water conservation program and the enhancements or new conservation measures that are planned to achieve or exceed DWU's stated water conservation goal.

5.1 Accurate Supply Source Metering

DWU has a comprehensive program to meter water diverted from supply sources within the DWU water system. All untreated water diversions or conveyances to the City of Dallas's Water Treatment Plants (WTPs) are metered. In the Eastern System, DWU has flow metering capability at each of the raw water pump stations and at the outlet of the Tawakoni Balancing Reservoir. The East Side WTP utilizes raw water flow meters. In the Western System, water flows to the Bachman and Elm Fork WTPs by gravity, from the intake to the plants' respective low lift pump stations. Raw water is metered entering each plant. DWU contracts require that wholesale customers (treated and untreated water) use a meter that conforms to American Water Works Association (AWWA) standards with review and approval by DWU. The meters are calibrated in accordance with those standards to an accuracy of plus or minus 1.5 percent. This is well within the TCEQ requirement of 5 percent accuracy. All untreated water diverted from supply sources is compiled in an annual Surface Water Report, which shows diversions on a monthly basis.

5.2 Universal Metering, Meter Testing and Repair, and Periodic Meter Replacement

Universal Metering – The current City of Dallas ordinance requires metering of all connections, except closed fire systems with alarms. Individual metering is required at all single-family residential locations. Most multifamily residential locations, such as apartments and condominiums, have master meters for each building. However, multifamily units are individually metered at the discretion of the owner or management company. Most commercial businesses are individually metered, although some are combined on a master meter. Irrigation metering is provided to some customers based on the individual needs of the user. All treated water pumped from the WTPs is compiled in an annual Pumped Water Report, which shows water pumped on a monthly basis.

Most of the treated water used by wholesale customers is metered by DWU using Venturi meters with rate-of-flow controllers (ROFCs). The remaining treated water usage by wholesale customers is metered by volumetric meters. All treated water pumped from the WTPs to treated water wholesale customers is included in the Annual Pumped Water Report.

Meter Testing and Repair – All production meters are tested and calibrated in accordance with Dallas Water Utilities ISO standards. The city maintains a program to pull, test, and replace any meters determined to be functioning outside of these parameters.

Periodic Meter Replacement – Most residential meters in the City of Dallas are replaced at 10- or 15-year intervals depending on meter size and accuracy life of the meter. Most large and high capacity general service meters are tested on an annual basis. DWU will also repair or replace any meter reported as inaccurate by a water customer.

5.3 Leak Detection, Repair, and Control of Unaccounted-for Water

DWU has an extensive leak detection and repair program and is committed to maintaining a rate of less than 10 percent for unaccounted-for water losses in its water system. Annual unaccounted-for water, based on the difference between treated water pumped and sold, averaged 5.21 percent in 2018.

Currently, DWU has an annual budget of $34 million for maintenance and upkeep of the distribution system. The majority of the budget is used for personnel, equipment, and materials. DWU operates 23 four-person repair crews. Most leaks, illegal connections, or abandoned services are discovered through the visual observation of field crews or are reported by the public.

DWU also has fourteen staff members to detect hard-to-find leaks. The Leak Detection Program has the goal of surveying the entire water system and improving the integrity of the water system by identifying weaknesses in water pipelines before breaks develop. The goal is to survey all pipelines every 2.5 years. Leak detection staff members utilize state-of-the-art leak detection equipment, including leak listening devices, leak noise loggers, and a leak noise correlator. The DWU leak detection program continues to meet and exceed its annual goal and in FY 2018 surveyed approximately 3,300 miles of the water system.

5.4 Monitoring and Record Management of Water Deliveries, Sales and Losses

DWU regularly monitors all water deliveries and sales to both treated and untreated water customers. All critical data, such as raw water conveyances to WTPs or wholesale customers, treated water pumped, and unaccounted-for water losses are available on a regular basis, as needed. All water sources and service connection accounts are individually metered and read on a regular basis to facilitate accurate comparisons and analysis.

5.5 Continuing Public Education Program

The City of Dallas' public education program is considered one of the best information and education programs in the State of Texas. DWU's program has received recognition from the Texas Water Development Board, the Texas Section of the American Water Works Association (TAWWA), the Texas Water Conservation Association, the American Advertising Federation, the U.S. Environmental Protection Agency (EPA), and the Obama Administration's 2011 Clean Water Framework Report. Specifically, the school program has received awards from the TAWWA, Keep Texas Beautiful, and the Oak Cliff Chamber of Commerce.

DWU has implemented a number of public education and outreach strategies, including an expanded public awareness campaign that incorporates both local and regional conservation messaging; the Environmental Education Initiative, focusing on K-12 students; a water conservation mascot; a revamped SaveDallasWater.com website; free irrigation system evaluations; free Industrial, Commercial and Institutional (ICI) Water Efficiency Assessments and Rebates; year-round water-wise landscape seminars and events, and a robust social media presence.

5.5.1 Public Awareness Campaign

Launched in the summer of 2002, the now regional public awareness campaign promotes water conservation using a well-diversified approach that includes broadcast and digital television ads, broadcast and digital radio ads, and social media advertising. The regional campaign is also featured on billboards on heavily traveled thoroughfares, in messaging placed both inside and outside Dallas Area Rapid Transit (DART) buses and trains, and in print ads in a variety of community publications. The SaveDallasWater.com website contains information about water conservation programs for Dallas ratepayers, City of Dallas water conservation ordinance restrictions, and various sustainability events year-round. On August 1, 2018, a revamped version of the SaveDallasWater.com website was launched. The new website offers a curated selection of informative tiles and images focused around the many facets of conservation and programs available, providing the public with a more user-friendly, interactive experience.

In addition, City of Dallas Water Conservation is active across all social media platforms including Facebook, Twitter and Instagram, pushing out new content to the public several times each week.

Although the Dallas-Fort Worth area has four primary water providers, it is a single media market. As a result, the broadcast portion of the DWU public awareness media buy delivers messages to customer of other water service providers, and any broadcast media purchase made by other water providers would reach DWU customers. In 2009, DWU formed a partnership with the Tarrant Regional Water District (TRWD) to minimize the potential for customer confusion by providing uniform regional water conservation messaging. This also resulted in campaign development savings and leveraged the media buy budget for both entities.

Since 2002, Dallas has spent nearly $20 million on its public awareness campaign, thus demonstrating its continuing commitment to water conservation for the entire North Texas region.

5.5.2 Environmental Education Initiative K-12

In FY 2006, DWU expanded its existing school education programs with an Environmental Education Initiative (EEI) to provide programs for grades kindergarten through twelve in the Dallas school district and in other area schools and private schools that serve City of Dallas residents. The EEI website (dallaseei.org) is an online resource for teachers with links to videos on outdoor water use, indoor water use, watersheds, the power of many conserving, and surface-groundwater interactions. The website also has a description of water lessons for kindergarten through fifth grade children. Teachers can register for a free in-class presentation through this website. To date, the EEI program has reached more than 140,000 students, 376,000 City of Dallas citizens and trained more than 12,000 teachers, in a total of 272 schools.

5.5.3 Water Conservation Mascot

In 2005, DISD students elected Dallas' official water conservation mascot "Dew". Through frequent public appearances and community outreach, Dew helps to educate kids and adults alike about the importance of using water wisely. Dew has reached thousands of Dallas residents and businesses since his 2006 inauguration. More information on Dew's efforts can be accessed through the "Conservation for Kids" link on the city's water conservation website, www.savedallaswater.com.

5.5.4 Free Irrigation System Evaluations

In 2007, DWU added two TCEQ-licensed irrigators to its water conservation staff and began providing free irrigation system evaluations. These inspectors serve residential and commercial retail customers and assist City of Dallas departments with proper irrigation system maintenance and operations. The evaluations include identification of potential system leaks, diagnosis of equipment malfunctions, recommended irrigation controller scheduling and recommendations for equipment upgrades to enhance efficiency. More than 7,000 inspections have been performed since the program was launched. Projected water savings based on implemented recommendations for FY 2018 is 16 MG/year. The irrigators also respond to high-bill concerns from DWU customers by evaluating their automatic irrigation systems for potential water loss and suggesting other areas of potential water savings.

DWU's licensed irrigators also work with Dallas departments on proper maintenance, operation of city irrigation systems and new system design. Over 200 irrigation system evaluations have been performed at Dallas parks facilities to date.

5.5.5 Water Wise Landscape Events

FY 2018 marked the 24th anniversary of the city's Water-wise Landscape Tour of Homes and Public Gardens program. This initiative is designed to raise public awareness and save water by publicizing demonstration gardens, recognizing water-wise award winners, and promoting the replacement of water-thirsty yards with landscaping that requires minimal water and maintenance.

The City of Dallas has "water-wise" demonstration gardens at the historic White Rock Lake Pump Station and Texas Discovery Gardens at Fair Park. The use of water-wise landscaping is also promoted through year-round water-wise seminars and the city's water conservation (savedallaswater.com) website which includes a list of water-wise landscape locations, photos and virtual tours.

It is difficult to quantify water savings achieved specifically from water-wise events. However, these programs heighten awareness of the beauty and reduced need for water and maintenance in the use of native and adapted plantings, as well as providing tools for landscape conversion and proper maintenance.

5.5.6 Other Public Education

The City of Dallas also uses other approaches to public outreach, including water bill inserts, brochures, speaking engagements, special events and promotions, and conservation-oriented signage in City facilities. Since its inception in 2001, Dallas Water Conservation has hosted hundreds of free water-wise seminars, workshops and events year-round, promoting a variety of relevant conservation topics.

The City of Dallas has partnered with regional North Texas water providers Tarrant Regional Water District and North Texas Municipal Water District for the past several years, to host the Annual North Texas Regional Water Conservation Symposium. This collaborative event provides an opportunity for water conservation experts to present best management practices on a number of related topics. In 2018, the 12th Annual Regional Water Conservation Symposium hosted 130 water professionals from across the state. Other regions of the state, including the Central and Gulf Coast regions, host similar symposiums.

The City also recognizes that an important component of public education includes educating City of Dallas employees on the value of water. To that end, City of Dallas Water Conservation hosts a 'Conservation on the Plaza' event each Spring, in coordination with National Drinking Water Week. This event is an opportunity to provide in-reach to city employees in a fun, interactive way while collaborating with other City departments such as Dallas Fire and Rescue and Dallas Animal Services. Nearly 500 city employees attended the 2nd Annual Conservation on the Plaza event in 2018.

5.5.7 Industrial, Commercial, and Institutional (ICI) Free Water Efficiency Surveys

In 2012, the Dallas City Council authorized an ICI Water Efficiency Survey Program to help ICI customers save water and money by identifying opportunities to increase water use efficiency and to reduce water, wastewater and energy costs. Those free assessments continue and include a full examination of:

- Cooling Towers, Boilers & Other Thermodynamic Operations
- Plumbing Fixtures, Fittings & Equipment
- Landscape Irrigation
- Food Service Operations
- Laundry Operations
- Laboratory & Medical Facilities
- Swimming Pools, Spas & Fountains
- Vehicle Washes
- Alternate Sources of Water

Over 400 water efficiency assessments have been performed since the program was launched, with an estimated water savings of over 400 million gallons per year if recommended process and equipment improvements are implemented.

5.5.8 ICI Hospitality Program

In 2011, the Dallas City Council authorized a program to encourage hotels/motels and restaurants to expand their efforts to save water by participating in the city's Water Conservation Hospitality Program. The initiative was voluntary. Participating hotels and motels urged guests to embrace fewer linen and towel changes, as well as serving water on request only in their dining areas. In support, the City provided free public service announcements to participating lodging facilities to educate their guests about the program. Dallas area restaurants were also encouraged to serve water on request only. This simple measure not only saves our water resources but also provides energy savings through less frequent dishwasher and heated water use. Free marketing and promotional materials were provided for participating establishments. In total, 79 hotels and restaurants participated in the ICI Hospitality Program. In FY 2016-17, it was determined that the ICI Hospitality Program would merge with the Industrial, Commercial, and Institutional (ICI) Free Water Efficiency Assessments, where it remains as of FY 2018-19.

5.5.9 Planned Public Education Measures

ICI Training Programs (FY 2020)

DWU plans to develop, lead, and manage ongoing water efficiency training programs for ICI facility managers and irrigators, with a focus on the EPA WaterSense programs. Topics will include industrial cooling and process, food processing, irrigation management, and leakage control. Bi-monthly or quarterly training programs will be conducted. As facility managers and irrigators become more aware of available water-efficient technologies and methods, they will begin to implement these measures. DWU will work with local businesses, green building organizations, and energy utilities to seek their input on the curriculum development and certification process.

ICI Business Partnership Program (FY 2020)

DWU plans to establish an ongoing Business Partnership Task Force or work group for the purpose of engaging the ICI community in DWU's water conservation program, particularly business leaders who represent companies that are top water users. The Task Force will meet four to six times per year for the purpose of discussing water conservation practices, sharing conservation success stories, and discussing DWU ICI water conservation programs.

5.6 City Leadership and Commitment Measures

City leadership and commitment strategies are intended to demonstrate a strong commitment to water conservation, with the city "leading by example." To that goal, the City has expanded its water conservation staff, expanded its leak detection program, revised its water conservation ordinance, and conducted retrofits at City-owned facilities. In addition, the City uses its website to publicize its leadership, commitment, and conservation practices. Moreover, in 2012 Dallas was the first municipality in North Texas to adopt a permanent ordinance limiting outdoor landscape watering to a maximum of twice weekly by implementation of a mandatory schedule. The ordinance served as a model for many cities across the region, the state and the nation.

5.6.1 Water Conservation Division Staff

DWU currently maintains 12 staff positions in the Water Conservation Division, up from 7 fulltime employees in 2005. Staff members are tasked with analyzing and tracking Best Management Practices (BMPs), providing customer water assessments, administering education programs, and facilitating retrofit programs. It is anticipated that additional staff may be added in the years to come, as new Conservation programs are introduced and current programs expanded further.

5.6.2 Retrofit of City Owned Facilities

Retrofits of city facilities have included replacement of plumbing fixtures and irrigation audits and corresponding irrigation system improvements. Between the years 2016-2018, DWU partnered with the

City departments of Economic Development, Housing/ Community Service, Planning and Urban Design and Park and Recreation to implement a water conservation and beautification project concentrated on the South Dallas/ Fair Park Community in Dallas. The project focused on the local area fire stations and the Martin Luther King Jr. Center and Library. Over a three-year period the project achieved the following:

- 103 new trees and 2,150 native plants planted
- Traditional turf landscapes replaced with water-wise landscapes created, incorporating more than 30 tons of stone
- Retention basins added for the capture and re-use of storm water
- Plumbing upgrades in all buildings including:
    - Replacement and/ or retrofit of 65 toilets
    - Replacement of 67 lavatory sinks
    - Installation or retrofit of 75 lavatory faucets
    - Replacement of 67 urinals
    - Replacement of 6 water fountains
    - Replacement of 12 kitchen faucets

In all, the project resulted in an estimated water savings of 1.39 MG/Y. These improvements were made possible through the City Leadership and Commitment Grant Program which provides funding to City departments for water conservation activities. Grants are awarded on a competitive basis annually. Since FY 2009, grants totaling more than $1.3M have been awarded, with a total estimated water savings of 3.95 MG/Y. For FY2019-20, grant funds have been awarded to the Office of Cultural Affairs and the Dallas Park and Recreation Department. The office of Cultural Affairs will use awarded grant funds to make indoor plumbing upgrades and retrofits to The Majestic Theater and The Kalita Humphreys Theater. Dallas Park and Recreation Department will use awarded grant funds to continue the Dallas City Hall median renovation design project, focusing on the Akard and Ervay medians, to demonstrate regionally suitable low water usage landscape design around Dallas City Hall.

5.6.3 Planned City Leadership and Commitment Measures

Water-Wise Landscape Design Requirements (Under Review FY 2020)

DWU will collaborate with the city's Building Inspection Office to revise, upon City Council approval and adoption, its landscape ordinance to limit turf areas in all new landscapes and require low-water-use landscaping in other areas. Other requirements could include minimum soil depths, soil amendments, and turf grass dormancy capability. Turf grass requires more water than native grasses and low-water-use plants. Reducing the turf grass area in new landscapes will reduce irrigation water use.

ICI Commercial Equipment Rule

With the adoption of the International Green Building Construction Code (Section 5.14), the city has put into place requirements for certain water efficiency standards for newly constructed and newly-occupied ICI establishments.

5.7 Rebate and Incentive Programs

DWU has implemented the following rebate and incentive programs: residential and multi-family toilet vouchers (*New Throne for Your Home)*; Minor Plumbing Repair program; and the ICI rebate program. Each of these programs is described below.

5.7.1 Toilet Voucher Program

The *New Throne for Your Home* program, initiated in July 2007, offers vouchers and rebates of up to $90 for replacement of older, inefficient toilets with high efficiency (HET) models. Applicants must be DWU customers whose toilets were installed prior to January 1, 1994 and who do not already have water-efficient toilets. Single-family vouchers are limited to two per household. A rebate option is also available for $90 per toilet. Multi-family requests are handled on a first-come, first-served basis, as funding is limited. The program is promoted in print, social media and on the savedallswater.com website.

To date, more than 110,000 toilets have been replaced through the *New Throne for Your Home* program. These efficient toilets are projected to save over 392 MG annually.

5.7.2 Minor Plumbing Repair Program

In 2005, the Minor Plumbing Repair (MPR) program began with the goal of assisting low-to-moderate income water customers reduce water waste and increase water efficiency. The program replaces inefficient water use fixtures such as toilets (up to 2 per household), faucet aerators, and showerheads with efficient water use fixtures for qualified homeowners. The program also includes minor repairs to leaking faucets, hose bib leaks, easily accessible pipe joint leaks, and water heaters. To date, over 4,300 families have participated. Measures implemented through the MPR program are projected to save over 26 MG annually.

5.7.3 Industrial, Commercial and Institutional Rebate Program (Currently Undergoing Restructuring FY 2019)

In FY 2011/12, the Dallas City Council authorized funding for ICI rebates in an effort to help industrial, commercial and institutional customers defray the costs for large water conservation projects. Up to $100,000 (per project) in site-specific rebates are available to ICI customers towards the cost of new equipment and processes that conserve water at existing facilities. All ICI water users served by the City of Dallas Water Utilities, in good-standing, are eligible to apply. Five customers have received rebates to date, resulting in savings of 17.50 MG annually.

5.7.4 Planned Rebate and Incentive Measures

Residential Irrigation System Incentive (FY 2021)

DWU plans to offer a rebate or other incentive to all single- and multi-family residential customers that retrofit their existing irrigation systems with water-conserving equipment. Qualifying equipment may include:

- Drip irrigation equipment
- Spray heads with greater distribution uniformity
- Smart irrigation controllers
- Other devices

Residential Clothes Washer Incentive (FY 2021)

DWU plans to offer a rebate to single- and multi-family residential customers for replacing older, inefficient clothes washers with water-efficient models (modified energy factor of at least 1.8 and water factor of no more than 7.5). Efficient clothes washers use up to sixty percent less energy and up to forty percent less water than conventional machines.

5.8 Non-promotional Water Rate Structure

DWU has a conservation-oriented rate structure for customers within the City of Dallas. Under the increasing block rate structure, customers are billed a water meter service charge which increases with the size of their meters. Customers are also billed for water usage and increasing usage results in a higher unit cost for water. To that end, DWU has incorporated conservation tiered rates into its structure since 2001. In 2018, DWU added its highest rate in a new fifth tier. Connecting higher rates to increased consumption discourages customers from wasting water. A copy of DWU's rates is provided in Appendix E.

Wholesale Customer Water Rates – The rate structure for 98 percent of wholesale treated water customers is two-part, based on demand and volume. The remaining two percent is charged at a flat volume rate. Current wholesale customer contracts include a provision that promotes water conservation by discouraging high one-year water use and then returning to lower demand levels.

Under this provision, wholesale customers pay annual demand charges based on the current water year demand or the highest demand established during the five preceding water years, whichever is greater. Wholesale untreated water customers are charged either a non-interruptible rate or an interruptible rate.

5.9 Water Conservation Provisions in Wholesale Water Supply Contracts

Current contracts between the City of Dallas and wholesale customers contain the following typical provisions related to water conservation: (1) the customer agrees to develop a water conservation plan which incorporates loss-reduction measures and demand management practices designed to ensure that the available supply is used in an economically efficient and environmentally sensitive manner, and (2) if Dallas grants authorization for the customer to sell water purchased from Dallas, then Dallas may establish the terms and conditions of the conveyance.

In accordance with 30 TAC § 288, the City of Dallas will include a requirement in every wholesale water supply contract entered into, including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of Chapter 288.

5.10 Reservoir Systems Operations Plan

DWU operates the water supply system foremost to assure adequate, good quality available water throughout a drought as severe as the worst drought of record. Secondly, DWU considers operational economy. The Dallas water supply system consists of several surface water reservoirs, transmission facilities, water treatment plants and related infrastructure. Infrastructure maintenance and expansion to meet future water requirements are essential to system operations.

Reservoir water withdrawal procedures are prepared to assure that water supplies are conserved in the event of severe drought conditions. These procedures are periodically reviewed and revised as conditions change.

These operational procedures are tested using computer simulations maintained and operated by DWU staff. These models simulate lake operations over time periods of historical hydrologic records. The modeling includes projected water demands and the constraints of the transmission, water treatment and distribution systems. Program utilization normally involves the trial operation of a set of lake operation procedures, assuming that the critical drought of record begins at the start time of the simulations.

DWU's computer program chooses monthly drafts from each lake based primarily on lake levels. When lakes are near full, less expensive western sources are drafted heavily. When these lakes drop to defined levels, their drafts are reduced and drafts are switched to more remote sources. Each potential operating rule is tested over the hydrological period of record to ensure the operation would not cause the supply in any reservoir to be exhausted should a drought equal in severity to the worst drought of record recur. The

potential operating rules are compared, and from the results a set of operating guidelines for the upcoming year is developed. These guidelines are then modified if conditions warrant.

5.11 Means to Implement and Enforce the Water Conservation Plan

DWU administers and implements various components of the Water Conservation Program within the City of Dallas as authorized by the Dallas City Code, Chapter 49, Water and Wastewater. The enforcement of the water rate structure and metering is automatic. Water conservation lawn and landscape restrictions are enforced by the Department of Code Compliance. The DWU budget includes funding for enforcement activities by the Department of Code Compliance equivalent to two full-time personnel. For wholesale customers, clauses within their water supply contracts require development of water conservation plans to ensure that available supplies are used efficiently.

5.12 Coordination with Regional Water Planning Groups

DWU will provide a copy of this Water Conservation Plan to the Region C Water Planning Group. As the largest water supplier in the region, DWU will provide leadership and work with the Regional Water Planning Group to improve efficient utilization of existing water resources and/or develop new resources which meet the needs of the entire region. A copy of the letter of Coordination with Region C Planning Group is provided in Appendix J.

5.13 Desegregation of Water Sales by Customer Class

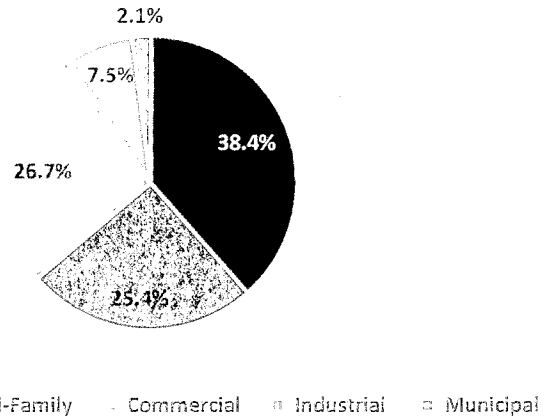
DWU separates City of Dallas water customers into four general account classes:

- Residential – The Residential class includes single-family residences, individually and master metered duplexes, individually metered apartments, and individually metered mobile homes.
- General Services – The General Service class includes master metered multi-family housing, master metered apartments, and master metered mobile homes, office buildings, restaurants, hotels, churches, and other commercial and light industrial customers.
- Optional General Service – The Optional General Service class mainly consists of large industrial customers, but the data shown also include some master metered apartment complexes.
- Municipal – The Municipal class consists of city buildings, parks, fire stations, libraries, and some hospitals.

Based on the average retail water sold within the City of Dallas from FY 2012-13 through FY 2016-17, General Service and Residential customers account for most of the City's treated water consumption (Figure 5-1). To better illustrate actual water use in Figure 5-1, consumption within the General Service account class has been divided into two categories:

- GS Multi-Family, consisting of master metered multi-family housing, master metered apartments, and master metered mobile homes, and
- GS Commercial, consisting of the remainder of General Service accounts

Figure 5-1: Average Water Consumption by Account Class
FY13 - FY17



5.14 Plumbing Code Ordinances

The State of Texas has placed maximum flow rate requirements on plumbing fixtures. As of January 1, 2014, the law requires maximum average flow rates of 1.28 gallons per flush (gpf) for toilets and 0.5 gpf for urinals. Effective October 12, 2013, the City of Dallas amended the plumbing code by adopting the 2012 Edition of the International Green Construction Code of the International Code Council, Inc. with specified exceptions. Dallas' code at a minimum complies with State of Texas requirements.

5.15 Water Waste Prohibition

Dallas's water and wastewater ordinance prohibits the following wasteful practices:

- Runoff from irrigation onto a street or other drainage area
- Irrigation of impervious areas
- Operation of an irrigation system with broken or missing sprinkler heads
- Irrigation during a precipitation event
- Irrigation between the hours of 10:00 a.m. and 6:00 p.m. from April 1 through October 31 of any year (except irrigation by hand and the use of soaker hoses)

In addition, the water and wastewater ordinance require all irrigation systems to be equipped with rain-sensing devices and freeze sensors.

Beginning in April of 2012, additional changes were made to the ordinance allowing a maximum of twice-weekly lawn and landscape watering based on property street address. Provisions were included to allow temporary variances for specific situations that may require more than twice weekly watering.

5.16 Wastewater Reuse and Recycling

DWU has developed water recycling projects and plans for additional projects, as described in the following sections: direct reuse projects, indirect reuse projects, and contracts for return flows into Dallas reservoirs. Table 5-1 presents a summary of direct and indirect recycled water projects for DWU along with the projected water supply.

Table 5-1: Summary of DWU Recycled Water Projects

Project	Projected 2020 Average Supply (MGD)	Projected 2070 Average Supply (MGD)
Direct Recycle Projects		
Cedar Crest/ Stevens Park Pipeline	1.0	1.0
White Rock Pipeline Alternate/ Cedar Crest Pipeline Extension	2.2	2.2
Indirect Recycle Augmentation		
NTMWD/ DWU Exchange	23.0	31.1
Main Stem Balancing Reservoir	0.0	102
Total	**26.2**	**136.3**

5.16.1 Direct Reuse Projects

DWU provides recycled water from the Central WWTP to the Cedar Crest and Stevens Park golf courses for irrigation. The golf courses currently use up to 1.0 MGD. DWU plans to add additional customers on this line in the future for non-potable applications, such as irrigation and industrial uses.

DWU also plans to develop the White Rock Pipeline Alternative to provide recycled water for non-potable applications, such as irrigation and industrial uses.

5.16.2 Indirect Reuse Projects

DWU has agreed in principle with the North Texas Municipal Water District (NTMWD) to an exchange of recycled water. This planned exchange includes the following elements:

- DWU will use a portion of the recycled water discharged to Lewisville Lake from NTMWD-operated WWTPs in Frisco.
- Upon completion of a Main Stem Pump Station in approximately 2019, recycled water that originates from DWU WWTPs will be diverted from the main stem of the Trinity River to the NTMWD's East Fork Wetlands.
- Upon completion of the Main Stem Pump Station, DWU will use all recycled water discharged to Lake Ray Hubbard from NTMWD-operated WWTPs.

DWU identified in the 2014 Dallas Long Range Water Supply Plan (LRWSP) a Main Stem Balancing Reservoir. The Main Stem Balancing Reservoir is an off-channel reservoir that will store Dallas' permitted

APPENDIX A:

UTILITY PROFILES FOR MUNICIPAL RETAIL SUPPLIERS

Texas Commission on Environmental Quality

UTILITY PROFILE AND WATER CONSERVATION PLAN REQUIREMENTS FOR MUNICIPAL WATER USE BY RETAIL PUBLIC WATER SUPPLIERS

This form is provided to assist retail public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Name:	City of Dallas Water Utilities
Address:	1500 Marilla St., Room 4AS, Dallas, TX 75201
Telephone Number:	(214) 2431175 Fax: (214) 6705244
Water Right No.(s):	057004
Regional Water Planning Group:	Region C
Form Completed by:	
Title:	
Person responsible for implementing conservation program:	Holly Holt-Torres on behalf of the City of Dallas Water Utilities Phone: (214) 2431175
Signature:	Holly R Holt-Torres Date: 4/12/2019

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NOTE: If the plan does not provide information for each requirement, include an explanation of why the requirement is not applicable.

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data*

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).

2. Service area size (in square miles): 699

   (Please attach a copy of service-area map)

3. Current population of service area: 2,460,490

4. Current population served for:

   a. Water 2,460,490 - (Retail - 1,286,380 / Wholesale – 1,084,010)

   b. Wastewater 1,345,990 - (Retail - 1,239,074 / Wholesale – 106,916)

5. Population served for previous five years:

Year	*Population*
2017	2,431,140
2016	2,345,170
2015	2,493,030
2014	2,469,220
2013	2,427,010

6. Projected population for service area in the following decades:

Year	*Population*
2020	3,062,874
2030	3,527,191
2040	3,995,923
2050	4,488,158
2060	4,941,083

7. List source or method for the calculation of current and projected population size.

   North Texas Council of Governments (NCTOG)

B. *Customers Data*

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. http://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/sb181_guidance.pdf

1. Current number of active connections. Check whether multi-family service is counted as ☐ Residential or ☒ Commercial?

Treated Water Users	*Metered*	*Non-Metered*	**Totals**
Residential	251,319		251,319
Single-Family			
Multi-Family			
Commercial	42,145		42,145
Industrial/Mining	88		88
Institutional	1256		1,256
Agriculture			
Other/Wholesale	44		44

2. List the number of new connections per year for most recent three years.

Year	2017	2016	2015
Treated Water Users	1,671	1,431	1,155
Residential			
Single-Family			
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

3. List of annual water use for the five highest volume customers.

	Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*
1.	Texas Instruments Inc.	1,490,000	Treated
2.	Niagra Bottling, LLC	460,000	Treated
3.	UT Southwestern Medical Center	436,000	Treated
4.	White Wave Food Company	301,000	Treated
5.	Dallas County Hospital District/Pleasant Grove Health Clinic	244,000	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons). Indicate whether this is ☐ diverted or ☒ treated water.

Year	2013	2014	2015	2016	2017
Month					
January	5,082,785	4,125,966	4,116,801	5,237,512	4,544,955
February	4,013,230	4,116,903	3,222,331	3,959,130	4,059,796
March	4,334,933	4,239,746	4,631,803	4,717,331	4,862,878
April	4,400,027	4,700,603	4,087,687	4,375,541	3,967,167
May	5,745,108	5,035,775	3,894,255	4,890,156	5,499,844
June	5,331,751	5,723,566	4,672,712	4,056,940	5,693,851
July	6,466,383	6,169,392	6,292,386	5,787,603	5,266,730
August	7,498,577	6,208,026	7,690,490	7,416,441	6,584,378
September	6,794,831	6,899,943	7,972,055	5,898,552	5,627,763
October	7,067,603	6,590,231	6,919,294	6,314,960	7,129,105
November	4,517,115	4,656,947	5,131,610	4,902,758	4,645,202
December	4,915,347	4,925,130	4,633,744	4,565,618	4,664,580
Totals	66,167,690	63,392,228	63,265,168	62,122,542	62,546,249

Describe how the above figures were determine (e.g, from a master meter located at the point of a diversion from the source, or located at a point where raw water enters the treatment plant, or from water sales).

The above numbers were collected from our billing software SAP that tracks water consumption by classes and accounts.

2. Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

Year	2013	2014	2015	2016	2017
Account Types					
Residential					
Single-Family	25,528,479	24,786,003	24,319,109	23,570,889	23,372,313
Multi-Family	16,521,958	15,970,413	22,064,255	15,944,116	16,584,410
Commercial	17,473,850	16,849,820	16,578,684	16,478,527	16,208,189
Industrial/Mining	5,302,885	4,627,648	4,927,648	4,641,502	5,027,407
Institutional	1,340,517	1,158,522	1,391,957	1,493,508	1,355,930
Agriculture					
Other/Wholesale	54,452,327	53,059,688	51,723,313	53,778,653	55,458,814

3. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

Year	*Amount (gallons)*	*Percent %*
2013	14,052,400,000	9.74%
2014	1,113,045,5815	12%
2015	13,040,930,643	15%
2016	6,861,320,851	8.58%
2017	5,228,231,303	6.61%

B. Projected Water Demands

If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	Source	Amount Authorized Acre Feet/Year
Surface Water	Lake Grapevine	85,019
	Elm Fork System	1,2030,305
	Additional Elm Fork Return Flows	247,216
	Lake Palestine	114,255
	Lake Ray Hubbard	89,724
	Lake Tawakoni	190,425
	Lake Fork	131,057

Elm Fork System: Lake Ray Roberts, Lake Lewisville and run-of-river diversions made at Frasier Dam.

B. Treatment and Distribution System

1. Design daily capacity of system (MGD): 900

2. Storage capacity (MGD):
   a. Elevated 14.1
   b. Ground 231

3. If surface water, do you recycle filter backwash to the head of the plant?
   ☐ Yes ☐ No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD): 280

2. Treated effluent is used for ☒ on-site irrigation, ☒ off-site irrigation, for ☒ plant wash-down, and/or for ☒ chlorination/dechlorination.

   If yes, approximate amount (in gallons per month): 41,397,342 gallons per month

3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 100 %

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2013	2014	2015	2016	2017
Month					
January	3,968,144	3,441,912	3,439,298	4,475,556	3,657,370
February	3,319,101	3,456,701	2,768,803	3,309,871	3,277,322
March	3,506,456	3,521,579	3,920,449	3,680,551	3,854,237
April	3,452,072	3,708,860	3,452,039	3,328,513	3,102,245
May	4,194,692	3,684,563	3,174,574	3,776,916	4,074,375
June	3,924,838	3,964,597	3,729,165	2,890,748	4,050,217
July	4,148,223	4,111,420	4,215,687	3,717,721	3,675,555

August	4,628,444	3,985,137	4,313,864	4,547,875	4,369,906
September	3,982,762	4,373,200	4,305,361	3,764,439	3,397,718
October	4,676,614	4,424,786	4,094,847	4,127,076	4,529,500
November	3,424,517	3,422,717	3,587,890	3,461,778	3,748,534
December	4,141,575	3,876,347	3,671,620	3,583,973	3,517,872
Totals	47,367,434	45,971,818	44,673,597	44,665,016	45,254,850

V. ADDITIONAL REQUIRED INFORMATION

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. *Specific, Quantified 5 & 10-Year Targets*

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable

B. *Metering Devices*

The water conservation plan must include a statement about the water suppliers metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply.

C. *Universal Metering*

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

D. *Unaccounted- For Water Use*

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

E. *Continuing Public Education & Information*

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

F. *Non-Promotional Water Rate Structure*

The water supplier must have a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. This rate structure must be listed in the water conservation plan.

G. *Reservoir Systems Operations Plan*

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

H. *Enforcement Procedure and Plan Adoption*

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

I. *Coordination with the Regional Water Planning Group(s)*

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

J. *Plan Review and Update*

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within ten years

A. *Leak Detection and Repair*

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. *Contract Requirements*

A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

VII. ADDITIONAL CONSERVATION STRATEGIES

A. *Conservation Strategies*

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

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

4. A program for reuse and/or recycling of wastewater and/or graywater;

5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;

6. A program and/or ordinance(s) for landscape water management;

7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and

8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

Best Management Practices

The Texas Water Developmental Board's (TWDB) Report 362 is the Water Conservation Best Management Practices (BMP) guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The Best Management Practices Guide broken out by sector, including Agriculture, Commercial, and Institutional, Industrial, Municipal and Wholesale along with any new or revised BMP's can be found at the following link on the Texas Water Developments Board's website: http://www.twdb.state.tx.us/conservation/bmps/index.asp

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact 512-239-3282.

APPENDIX B:

UTILITY PROFILES FOR WHOLESALE SUPPLIERS

Texas Commission on Environmental Quality

PROFILE AND WATER CONSERVATION PLAN REQUIREMENTS FOR WHOLESALE PUBLIC WATER SUPPLIERS

This form is provided to assist wholesale public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Name:	City of Dallas Water Utilities
Address:	1500 Marilla St., Room 2AN, Dallas, TX 75201
Telephone Number:	(214) 2431175 Fax: (214) 6705244
Water Right No.(s):	057004
Regional Water Planning Group:	Region C
Form Completed by:	
Title:	
Person responsible for implementing conservation program:	Holly Holt-Torres on behalf of the City of Dallas Water Utilities Phone: (214) 2431175
Signature:	Holly R Holt-Torres Date: 4/12/2019

NOTE: If the plan does not provide information for each requirement, include an explanation of why the requirement is not applicable.

PROFILE

I. WHOLESALE SERVICE AREA POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Service area size (in square miles): 699
   (Please attach a copy of service-area map)

2. Current population of service area: 2,460,490

3. Current population served for:

a. Water 2,460,490 (2018) - (Retail - 1,286,380 / Wholesale – 1,084,010)

b. Wastewater 1,345,990 - (Retail - 1,239,074 / Wholesale – 106,916)

4. Population served for previous five years:

Year	Population
2017	2,431,410
2016	2,345,170
2015	2,493,030
2014	2,469,220
2013	2,427,010

5. Projected population for service area in the following decades:

Year	Population
2020	3,062,874
2030	3,527,191
2040	3,995,923
2050	4,488,158
2060	4,941,083

6. List source or method for the calculation of current and projected population size.

NCTCOG – North Central Texas Council of Governments

B. Customers Data

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of annual use for each customer for the previous year:

	Wholesale Customer	Contracted Amount (acre-feet)	Previous Year Amount of Water Delivered (acre-feet)
1.	Addison	12,322	5,333
2.	Balch Springs	4,705	2,461
3.	Carrollton	45,926	21,626
4.	Cedar Hill	11,201	6,663
5.	Cockrell Hill	Flat Rate - Unspecified	606
6.	Combine WSC	Flat Rate - Unspecified	296
7.	Coppell	20,723	9,998
8.	DeSoto	16,424	8,355
9.	Duncanville	10,641	4,820
10.	Farmers Branch	19,042	8,023
11.	Flower Mound	12,322	6,136
12.	Glenn Heights	37,861	20,153

G. *Enforcement Procedure and Official Adoption*

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

H. *Coordination with the Regional Water Planning Group(s)*

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

I. *Plan Review and Update*

A wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan no later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

J. *Additional Conservation Strategies*

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

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
2. A program to assist agricultural customers in the development of conservation, pollution prevention and abatement plans;
3. A program for reuse and/or recycling of wastewater and/or graywater;
4. A cost-share program;
5. A technical assistance and outreach program;
6. A program for purchase and direct distribution of water conservation equipment; and
7. Any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

Best Management Practices

The Texas Water Developmental Board's (TWDB) Report 362 is the Water Conservation Best Management Practices (BMP) guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The Best Management Practices Guide broken out by sector, including Agriculture, Commercial, and Institutional, Industrial, Municipal and Wholesale along with any new or revised BMP's can be found at the following link on the Texas Water Developments Board's website: http://www.twdb.state.tx.us/conservation/bmps/index.asp

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APPENDIX C:

WATER SUPPLY SYSTEM DATA

DWU Wholesale Customers

Demands and Usage for CY2017

Wholesale Customer	"Contracted" Amount (Ac-Ft/Yr)	Calendar Year 2017 Usage (Ac-Ft/Yr)
Treated Water		
Addison	12,322	5,333
Balch Springs	4,705	2,461
Carrollton	45,926	21,626
Cedar Hill	11,201	6,663
Cockrell Hill	Flat Rate - Unspecified	606
Combine WSC	Flat Rate - Unspecified	296
Coppell	20,723	9,998
*DCPCMUD	Flat Rate - Unspecified	53
D/FW Airport	3,921	2,503
DeSoto	16,242	8,355
Duncanville	10,641	4,820
Farmers Branch	19,042	8,023
Flower Mound	12,322	6,136
Glenn Heights	2,576	1,557
Grand Prairie	37,861	20,153
Hutchins	Flat Rate - Unspecified	1,652
Irving	78,074	11,462
Lancaster	8,961	6,121
Lewisville	10,081	10,549
Ovilla	Flat Rate - Unspecified	547
Red Oak	1,680	1,055
Seagoville	5,265	1,773
The Colony	6,721	4,111
*Upper Trinity Regional Water District	Flat Rate - Unspecified	255
Total Amount of Treated Water Sold to Wholesale Customers During Calendar Year 2017:		136,108
Untreated Water		
Grapevine	2,016	583
Irving	Interruptible Rate - Unspecified	14,441
Lewisville	7,393	7,179
Upper Trinity Regional Water District	18,482	7,884
Total Amount of Untreated Water Sold to Wholesale Customers During Calendar Year 2017:		30,087
GRAND TOTAL:		**166,196**

*Emergency treated water service.

Prepared on 4/3/2019 by DWU Wholesale Services Division

APPENDIX D:

WATER RIGHTS SOURCES

Water Rights				
Water Supply Source	Water Right/Permit	Permitted Diversion Acre-Foot/Year	Firm Yield Acre-Foot/Year	Non-Consumptive Hydroelectric Acre-Foot/Year
Ray Roberts Lake	08-2455	591,704.00	181,463.31	115,100.00
Lewisville Lake	08-2456	549,976.00		451,030.00
Elm Fork Trinity River	08-2457	21,678.20		0.00
Elm Fork Trinity River	5414	40,000.00		0.00
Grapevine Lake	08-2458	84,500.00	14,337.84	0.00
White Rock Lake	08-2461	8,703.15	3,215.00	0.00
Lake Ray Hubbard	08-2462	209,300.00	56,007.19	0.00
Reuse[1]	12468	247,200.00	106,804	0.00
Sub-Total		1,753,061.35	361,827.34	566,130.00
Water Contracts				
Lake Tawakoni	1583	184,600.00	184,600.00	0.00
Lake Fork	450	120,000.00	120,000.00	0.00
Lake Palestine	173A	114,337.00	114,337.00	0.00
Sub-Total		418,937.00	418,937.00	0.00
Total Water Supplies		2,171,998.35	780,764.34	566,130.00

Note:

[1]Firm Yield will vary form year to year. Firm yield provided is based on 2018 Central and Southside WWTP discharges and 2018 hydrologic conditions.

APPENDIX E:

STANDARD RATE SCHEDULE

dallas water utilities
city of dallas

Water & Wastewater Retail Rates

Effective October 1, 2018

Customer Charge				
Meter Size		Water	Sewer	Total
5/8*	Inch Meter	$5.33	$4.78	$10.11
3/4	Inch Meter	$7.40	$6.55	$13.95
1	Inch Meter	$10.78	$9.45	$20.23
1 1/2	Inch Meter	$20.00	$18.30	$38.30
2	Inch Meter	$32.54	$28.50	$61.04
3	Inch Meter	$77.00	$69.50	$146.50
4	Inch Meter	$126.62	$111.42	$238.04
6	Inch Meter	$251.45	$219.31	$470.76
8	Inch Meter	$418.53	$366.09	$784.62
10	Inch Meter or larger	$642.66	$575.21	$1,217.87

* 5/8 is the average residential customer size

Usage charge per 1,000 gallons	Water	Sewer
Residential		
Up to 4,000 gallons	$1.86	$5.36
4,001 to 10,000 gallons	$4.00	$5.36
10,001 to 20,000 gallons	$6.50	$5.36
20,001 to 30,000 gallons	$9.30	$5.36
Above 30,000 gallons	$10.70	$5.36
General Services		
Up to 10,000 gallons	$3.73	$4.11
Above 10,000 gallons	$4.05	$4.11
Above 10,000 gallons & 1.4 times annual average monthly usage	$6.15	$4.11
Optional General Services		
1st million gallons or less (minimum)	$2,287.29	$3.86
Above 1 million gals. (per 1,000 gals.)	$3.24	$3.86
Sewer Metered Separately		$3.91
Untreated Water		
Regular Service	$0.8572	
Interruptible Service	$0.3440	

The above rates apply if payment is received on or before the due date shown on the bill.
Payments received after the due date will incur a 5% late fee.

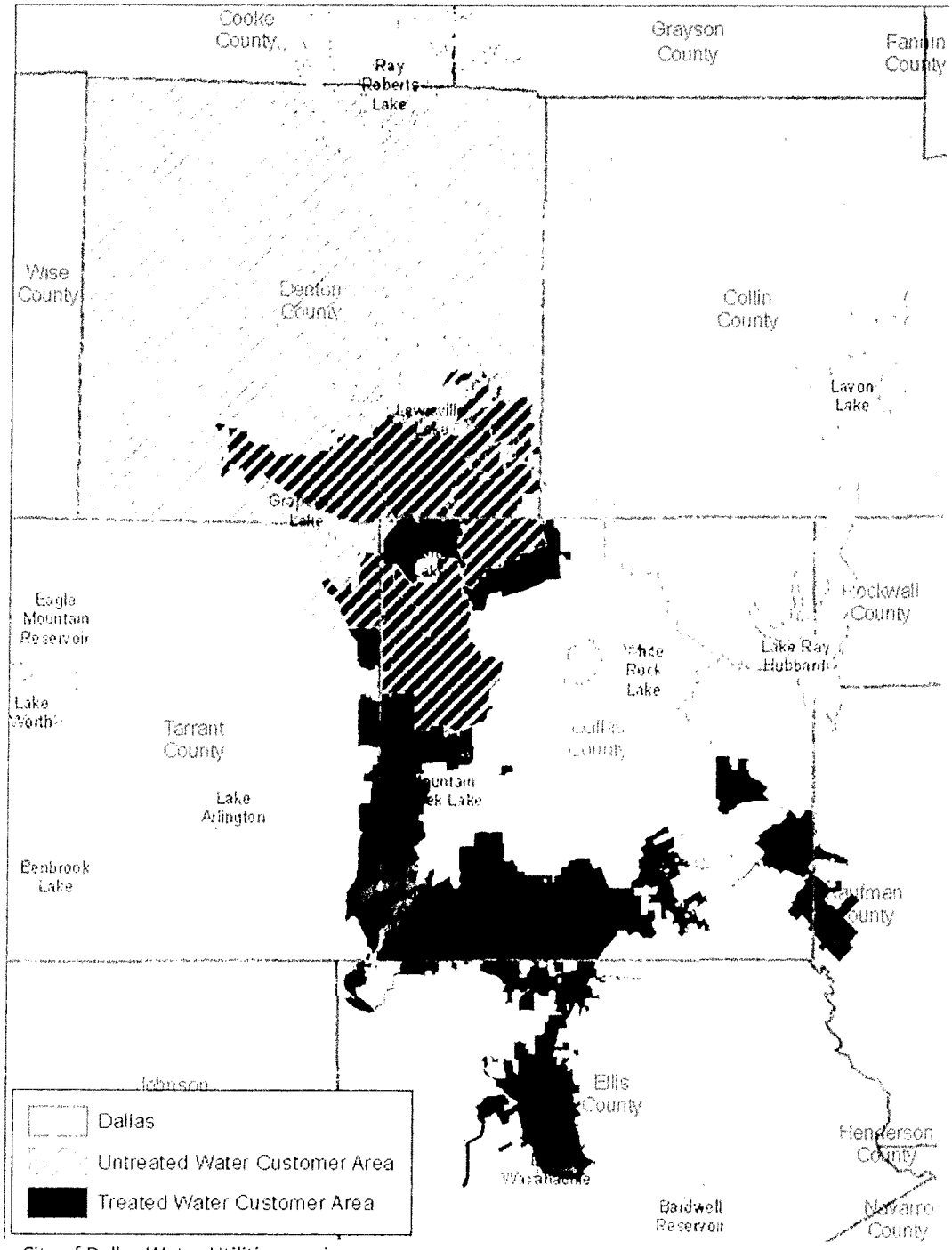
Sewer charges for residential accounts are calculated on an average of the water billed in December, January, February and March (40,000 gallons maximum) or the actual month's water consumption, whichever is less.

Sewer charges for general services and optional general services accounts are based on the month's water consumption unless sewer is metered separately.

Industrial wastewater discharges containing concentrations of BOD and/or Suspended Solids greater than 250 milligrams per liter are assessed sewer surcharges. Certain commercial users such as restaurants, bars/lounges, small food processors and equipment service facilities are assessed standard surcharges. These surcharges are included as part of the monthly bill.

APPENDIX F:

CITY OF DALLAS WATER UTILITIES SERVICE AREA MAP



City of Dallas Water Utilities service-area map

APPENDIX G:

IMPLEMENTATION SCHEDULE

Dallas Water Utilities Conservation Strategies

Implementation Schedule – Subject to annual appropriations approved by Dallas City Council

Strategy	Description	Implementation Date	Status
Metering			
Accurate Supply Source Metering	Comprehensive program to meter water diverted from supply sources within DWU system. Meters calibrated to accuracy of ±1.5% to AWWA standards.	Historically a DWU best management practice.	
Universal Metering, Meter Testing Repair and Periodic Replacement	Metering of all connections. Testing meters to maintain specified accuracy. Periodic 10- or 12-year replacement schedule depending on type of meter and accuracy.	Historically a DWU best management practice.	
Leak Detection			
Leak Detection, Repair & Control of Unaccounted for Water	Program to methodically seek out leaks, illegal connections and abandoned services. DWU maintains an annual budget of $25M for this purpose.	Historically a DWU best management practice.	
Monitoring & Record Management			
Monitoring & Record Management of Water Deliveries, Sales and Losses	Process in place to routinely monitor all water deliveries and sales to both treated and untreated water customers.	Historically a DWU best management practice.	
Continuing Public Education			
Public Awareness Campaign	DWU conservation program branding "Save Water, Nothing Can Replace It" is used to promote water conservation with various media including television, radio, newspaper, website and social media. DWU has spent a total of $14.4 million on the public awareness campaign since 2002.	FY2002	Continuing Program
Environmental Education Initiative K-12	Collaborative effort with the Department of Sanitation to provide in-school programs in the Dallas and Richardson Independent School Districts.	FY2006	Continuing Program
Water Conservation Mascot	Water "Dew" drop mascot used to promote conservation at frequent public appearances. Mascot was "elected" over other concepts by Dallas Independent School District students.	FY2006	Continuing Program
Free Irrigation System Inspections	Through the use of two licensed irrigators on staff, DWU provides free automatic irrigation system inspections to customers and makes recommendations for improvements in efficiency. The process serves to educate the customer about the effective use of their system.	FY2007	Continuing Program

WaterWise Landscape Events	WaterWise Landscape Tours and Seminars provided to teach residents about the use of native and adapted plants to reduce outdoor water use.	FY1994	Continuing Program
Other Public Education	DWU promotes water conservation through other outreach events including special events and promotions, speaking engagements, water bill inserts, brochures and signage encouraging conservation at city facilities.	Historically a DWU best management practice.	
New Public Education Measures			
Industrial Commercial and Institutional (ICI) Free Water Efficiency Surveys	Free water efficiency surveys offered to commercial customers to help them find ways to increase water use efficiency.	FY2012	Continuing Program
ICI Hospitality Program	A program to encourage hotels/motels and restaurants to expand their efforts to save water. Participating customers encourage their guests to embrace fewer linen and towel changes and to serve water only upon request in their dining areas.	FY2011	Merged with Industrial Commercial and Institutional (ICI) Free Water Efficiency Surveys Program in 2017
Planned Public Education Measures			
ICI Training Programs	DWU plans to develop, lead and manage ongoing water efficiency training programs for ICI facility managers and irrigators.	FY2020	Pending
ICI Business Partnership Program	DWU plans to establish an ongoing Business Partnership Task Force or work group for the purpose of engaging the ICI community in DWU's water conservation program.	FY2020	Pending
City Leadership and Commitment Measures			
City's Strategies to "Lead by Example"	Included as a major focus in the strategic plan, a commitment to water conservation is demonstrated through structured programs including but not limited to an expanded leak detection program, revised ordinances to promote conservation, and ongoing and continually updated web site and multimedia efforts to promote conservation practices.	FY2006	Continuing Program
Water Conservation Staff	DWU currently maintains 12 staff positions, an increase from seven in 2005. Additional staff has helped with implementation of new conservation strategies as well as routinely measuring the effectiveness of implemented programs.	FY2006	Continuing Program
Retrofit of City-owned Facilities	Beginning with an audit of fixtures at City-owned facilities in 2006, DWU provides funds on an annual basis for upgrades of plumbing fixtures, conversion of landscapes to water-wise landscapes and maintenance and upgrades of automatic irrigation systems.	FY2007	Continuing Program

Planned City Leadership and Commitment Measures			
Water-Wise Landscape Design Requirements	DWU staff is working with the city's Building Inspection Office to revise, upon City Council approval and adoption, its landscape ordinance to limit turf areas in all new landscapes and to require low-water-use landscaping in other areas.	FY2020	Pending
ICI Commercial Equipment Rule	Effective October 12, 2013, the city amended its construction code to require certain water efficiency standards for new and newly-occupied ICI establishments.	FY2014	Continuing Program
Rebate and Incentive Programs			
Toilet Voucher Program	The *New Throne for Your Home* program offers vouchers and rebates to DWU residential customers for replacement of older, water-wasting toilets with more efficient models. To date, more than 110,000 toilets have been replaced through this program at a projected annual water savings of over 392 MG.	FY2007	Continuing Program
Minor Plumbing Repair Program (MPR)	The MPR program serves low-to-moderate income water customers by assisting them with minor plumbing repairs and replacement of water-wasting fixtures. To date, over 4,300 families have participated with a projected annual water savings of over 26 MG.	FY2006	Continuing Program
New Rebate and Incentive Measures Since 2010 Plan Update			
ICI Rebate Program	Rebates available to ICI customers for conservation projects. Several customers have been identified as potential recipients to date. Others continue through the required preliminary free audit process.	FY2010	Continuing Program
Planned Rebate and Incentive Measures			
Residential Irrigation System Incentives	DWU is currently developing a program to offer rebates for residential irrigations system upgrades, subject to City Council approval.	FY2021	Pending
Residential Clothes Washer Incentive	DWU is currently developing a program to offer rebates to residential customers for replacement of old inefficient clothes washers, subject to City Council approval.	FY2021	Pending
Non-promotional Water Rate Structure			
Increase Block Rate Structure	DWU has a conservation-oriented rate structure for customers whereby rates increase as consumption increases by classified increments.	FY2001	Continuing Process
Wholesale Customer Water Rates	The rates structure for 97 percent of wholesale treated water customers based on demand and volume. The remaining three percent is charged at a flat volume rate.	Historically a DWU best management practice.	
Water Conservation Wholesale Water Supply Contracts			
Conservation Requirement	Current contracts between the City of Dallas and wholesale customers require the customer to develop a water conservation plan that	FY2014	Continuing Practice

	incorporates loss-reduction measures and demand management practices.		
Conservation Requirement for Resell of Water Purchased from DWU	In accordance with 30 TAC chapter 288, new and/or renewed contracts require that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Chapter 288.	FY2001	Continuing Practices
Reservoir Systems Operation Plan			
Economical and Efficient Operation of Distribution System	DWU operates the water supply system to achieve the most economical operation consistent with assuring adequate supply for future years, maintenance of water rights, and maintenance requirements of the supply and transmission facilities. Reservoir operating procedures are periodically updated in order to balance these factors as conditions change.	Historically a DWU best management practice.	
Means to Implement and Enforce the Water Conservation Plan			
Measures to Implement the Plan	City of Dallas has a water conservation ordinance enforced by the Department of Code Compliance. Clauses within the wholesale water supply contracts require development of water conservation plans to ensure that available supplies are used efficiently.	Historically a DWU best management practice.	
Coordination with Regional Water Planning Group			
DWU will provide a copy of this Plan to the Region C Water Planning Group	DWU not only provides leadership within the Regional Water Planning Group (RWPG), it also works with the RWPG to improve efficient utilization of existing water supplies and/or develop new resources to help meet the needs of the entire region.	FY2002	Continuing Practice
Desegregation of Water Sales Customer Care			
DWU Customer Classes	DWU segregates customers into the following user classes: Residential, General Services, Optional Services and Municipal.	Historically a DWU best management practice.	
Plumbing Code Ordinances			
Amendment of City Plumbing Code	Effective October 12, 2013, the city amended its construction code by adopting the 2012 Edition of the International Green Building Construction Code of the International Code Council which requires water efficiency standards for new residential and commercial properties.	FY2014	Continuing Practice
Water Waste Prohibition			
DWU Water and Wastewater Ordinances	The city amended its ordinances in 2001 to prohibit water waste from lawn and landscape irrigation and to require all automatic irrigation systems have a rain and freeze sensor installed. In April of 2012, a	FY2002	Continuing Practice

	maximum of twice-weekly watering schedule for lawns and landscapes was added to the city's ordinances.		
Waste Water Reuse and Recycling			
Direct Reuse	DWU provides recycled water from the Central WWTP to the Dallas Zoo, Cedar Crest and Stevens Park golf courses for irrigation. DWU plans to add additional customers on this line in the future for non-potable applications. DWU also plans to develop the White Rock Pipeline Alternative to provide recycled water for non-potable applications.	FY2000	Continuing Practice
Indirect Reuse	DWU and North Texas Municipal Water District (NTMWD) have mutually agreed to an exchange of recycled water.	Work In Progress	
Return Flow Permit			
Permit	Dallas has received a State water right permit for the return flows from its wastewater treatment plants as well as the treatment plants of other entities.	Work In Progress	
Method to Monitor the Effectiveness of the Plan			
Annual Report on Water Conservation Activities	DWU staff measures the effectiveness of its water conservation programs on an ongoing basis. DWU will submit an Annual Report to the TCEQ as required by 30 TAC Chapter 288.	FY2010	Continuing Practice
Quantified Marketing Analysis	DWU conducts surveys at the conclusion of each year's public awareness campaign to evaluate and improve the effectiveness of the campaign. Results are analyzed and used in planning for subsequent years.	FY2002	Continuing Practice

APPENDIX H:

CITY COUNCIL RESOLUTON

190607

April 24, 2019

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) requires municipal and wholesale water suppliers to submit an updated Water Conservation Plan approved by the City Council every five years; and

WHEREAS, Section 49.20 of the Dallas City Code requires the Director of Dallas Water Utilities to promulgate and submit a Water Conservation Plan to the City Council for approval; and

WHEREAS, the updates for the Water Conservation Plan have been completed and meet all the requirements of the TCEQ.

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. That the 2019 Water Conservation Plan is hereby approved and adopted.

SECTION 2. That the City Manager is hereby authorized to submit the 2019 Water Conservation Plan to the TCEQ as required by state law.

SECTION 3. That the City Manager is hereby authorized to undertake necessary actions to implement the adopted 2019 Water Conservation Plan.

SECTION 4. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL

APR 24 2019

CITY SECRETARY

APPENDIX I:

COORDINATION WITH REGION C PLANNING GROUP

dallas water utilities
city of dallas

Mr. Kevin Ward, Chair
Region C Water Planning Group
c/o Trinity River Authority
P.O. Box 60
Arlington, TX 76004

Dear Mr. Ward:

In accordance with Texas Administrative Code, Title 30, Chapter 288, the City of Dallas respectfully submits the attached Water Conservation and Drought Contingency Plans as required. The plans were approved by the Dallas City Council on April 24, 2019 and will be summited to the Texas Commission on Environmental Quality.

Please let me know if you have any questions regarding the attached plans.

Sincerely,

Terry Lowery
Director
City of Dallas Water Utilities

Attachments

1500 Marilla, 4AN, Dallas, Texas 75201
Telephone: (214) 670-3146 • Fax: (214) 670-3154

APPENDIX J:

TITLE 30 CHAPTER 288, SUBCHAPTER A OF TEXAS ADMINISTRATIVE CODE

SUBCHAPTER A: WATER CONSERVATION PLANS
§§288.1 - 288.7
Effective August 16, 2018

§288.1. Definitions.

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

(1) Agricultural or Agriculture--Any of the following activities:

(A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;

(B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;

(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

(D) raising or keeping equine animals;

(E) wildlife management; and

(F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.

(2) Agricultural use--Any use or activity involving agriculture, including irrigation.

(3) Best management practices--Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

(4) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

(5) Commercial use--The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.

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

(7) Industrial use--The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, and the development of power by means other than hydroelectric, but does not include agricultural use.

(8) Institutional use--The use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison, or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

(9) Irrigation--The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water from a public water supplier.

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

(11) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field re-pressuring.

(12) Municipal use--The use of potable water provided by a public water supplier as well as the use of sewage effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

(13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of

the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

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

(15) Public water supplier--An individual or entity that supplies water to the public for human consumption.

(16) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

(17) Residential gallons per capita per day--The total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.

(18) Residential use--The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor uses.

(19) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

(20) Reuse--The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

(21) Total use--The volume of raw or potable water provided by a public water supplier to billed customer sectors or nonrevenue uses and the volume lost during conveyance, treatment, or transmission of that water.

(22) Total gallons per capita per day (GPCD)--The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in

this chapter shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

(23) Water conservation coordinator--The person designated by a retail public water supplier that is responsible for implementing a water conservation plan.

(24) Water conservation plan--A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

(25) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

(26) Wholesale use--Water sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

Adopted July 25, 2018 Effective August 16, 2018

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

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

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

(A) a utility profile in accordance with the Texas Water Use Methodology, including, but not limited to, information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data;

(B) a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it, including, if possible, the sectors listed in clauses (i) - (vi) of this subparagraph. Any new billing system purchased by a public water supplier must be capable of reporting detailed water use data as described in clauses (i) - (vi) of this subparagraph;

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

(C) specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD. The goals established by a public water supplier under this subparagraph are not enforceable;

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

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

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

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

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

(I) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies; and

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

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

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

(K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

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

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system;

(B) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

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

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

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

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

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

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

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

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

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

(c) A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-

year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Adopted November 14, 2012 Effective December 6, 2012

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

(a) A water conservation plan for industrial or mining uses of water must provide information in response to each of the following elements. If the plan does not provide information for each requirement, the industrial or mining water user shall include in the plan an explanation of why the requirement is not applicable.

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

(2) specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by industrial or mining water users under this paragraph are not enforceable;

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

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

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

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

(b) An industrial or mining water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The industrial or mining water user shall review and update the next revision of its water

conservation plan every five years to coincide with the regional water planning group.

Adopted November 14, 2012 Effective December 6, 2012

§288.4. Water Conservation Plans for Agricultural Use.

(a) A water conservation plan for agricultural use of water must provide information in response to the following subsections. If the plan does not provide information for each requirement, the agricultural water user must include in the plan an explanation of why the requirement is not applicable.

(1) For an individual agricultural user other than irrigation:

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

(B) specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by agricultural water users under this subparagraph are not enforceable;

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

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

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

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

(2) For an individual irrigation user:

(A) a description of the irrigation production process which shall include, but is not limited to, the type of crops and acreage of each crop to be

irrigated, monthly irrigation diversions, any seasonal or annual crop rotation, and soil types of the land to be irrigated;

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

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

(D) specific, quantified five-year and ten-year targets for water savings including, where appropriate, quantitative goals for irrigation water use efficiency and a pollution abatement and prevention plan. The goals established by an individual irrigation water user under this subparagraph are not enforceable;

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

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

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

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

(I) tailwater recovery and reuse; and

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

(3) For a system providing agricultural water to more than one user:

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

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

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

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

(B) specific, quantified five-year and ten-year targets for water savings including maximum allowable losses for the storage and distribution system. The goals established by a system providing agricultural water to more than one user under this subparagraph are not enforceable;

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

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

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

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

(G) a requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

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

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

(J) documentation of coordination with the regional water planning groups, in order to ensure consistency with appropriate approved regional water plans.

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

(c) An agricultural water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. An agricultural water user shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Adopted November 14, 2012 Effective December 6, 2012

§288.5. Water Conservation Plans for Wholesale Water Suppliers.

A water conservation plan for a wholesale water supplier must provide information in response to each of the following paragraphs. If the plan does not provide information for each requirement, the wholesale water supplier shall include in the plan an explanation of why the requirement is not applicable.

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

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

(B) specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;

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

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

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

(F) a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

(G) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plan;

(H) a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(I) documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

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

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

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

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

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

(3) Review and update requirements. The wholesale water supplier shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Adopted November 14, 2012 Effective December 6, 2012

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

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

Adopted April 5, 2000 Effective April 27, 2000

§288.7. Plans Submitted with a Water Right Application for New or Additional State Water.

(a) A water conservation plan submitted with an application for a new or additional appropriation of water must include data and information which:

(1) supports the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

(2) evaluates conservation as an alternative to the proposed appropriation; and

(3) evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

(b) It shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Effective May 3, 1993

APPENDIX K:

WATER CONSERVATION ANNUAL REPORT RETAIL SUPPLIER

Texas Water Development Board

Water Conservation Plan Annual Report
Retail Water Supplier

CONTACT INFORMATION

Name of Utility: Dallas Water Utility

Public Water Supply Identification Number (PWS ID): TX0570004

Certification of Convenience and Necessity (CCN) Number: P0001

Surface Water Right ID Number: 173-A, 450, 1415, 1583, 2389, 2455-B, 2456-F, 2457-D, 2458-C, 2459, 2460, 2461-B, 2462-H, 5176, 5280, 5414, 5448, 5464, 5496, 12110, 12468-A

Wastewater ID Number:

Check all that apply.

- [x] Retail Water Supplier
- [x] Wholesale Water Supplier
- [x] Wastewater Treatment Utility

Address: 1500 Marilla St, 4AS City: Dallas Zip Code: 75201

Email: [redacted] Telephone Number: 2146704022

Regional Water Planning Group: C

Groundwater Conservation District:

Contact: First Name: Malini Last Name: Banerjee

Title: Senior Coordinator

Is this person the designated Conservation Coordinator? (•) Yes ( ) No

Regional Water Planning Group: C

Groundwater Conservation District:

Reporting Period (Calendar year):

Period Begin (mm/yyyy): 01/2018 Period End (mm/yyyy): 12/2018

Check all that apply:

- [x] Received financial assistance of $500,000 or more from TWDB
- [x] Have 3,300 or more retail connections

☑ Have a surface water right with TCEQ

SYSTEM DATA

1. For this reporting period, select the category(s) used to classify customer water usage:

	Retail Customer Water Usage Categories
☑	Residential - Single Family
☐	Residential - Multi-family
☑	Industrial
☑	Commercial
☑	Institutional
☐	Agricultural

Retail Customers Categories*

- Residential Single Family
- Residential Multi-Family
- Industrial
- Commercial
- Institutional
- Agricultural

**Recommended Customer Categories for classifying customer water use. For definitions, refer to Guidance and Methodology on Water Conservation and Water Use*

2. For this reporting period, enter the number of connections for and the gallons of metered retail water used by each category. If the Customer Category does not apply, enter zero or leave blank. These numbers should be the same as those reported on the Water Use Survey.

Retail Customer Category	Number of Connections	Gallons Metered
Residential - Single Family	277,241	23,929,039,410
Residential - Multi-family	0	0
Industrial	2	85,095,728
Commercial	54,555	37,290,542,900
Institutional	1,678	1,357,970,700
Agricultural	0	0
Total Retail Water Metered[1]	333,476	62,662,648,738

[1]Residential + Industrial + Commercial + Institutional + Agricultural = Total Retail Water Metered

Water Use Accounting

	Total Gallons During the Reporting Period
1. Corrected Input Volume: The volume of treated water input to the distribution system from own production facilities. Same as line 13b of the Water Loss Audit for reporting periods >= 2015. Same as line 14 of the Water Loss Audit for reporting periods <= 2014.	138,026,770,000
2. Corrected Treated Purchased Water Volume: The amount of treated purchased wholesale water transfered into the utility's distribution system from other water suppliers system. Same as line 14b of the Water Loss Audit for reporting periods >= 2015. Same as line 15 of the Water Loss Audit for reporting periods <= 2014	0
3. Corrected Treated Wholesale Water Sales Volume: The amount of treated wholesale water transfered out of the utility's distribution system, although it may be in the system for a brief time for conveyance reasons Same as line 15b of the Water Loss Audit for reporting periods >= 2015 Same as line 16 of the Water Loss Audit for reporting periods <= 2014.	56,286,985,000
4. Total System Input Volume: This is the sum of the corrected input volume plus corrected treated purchased water volume minus corrected treated wholesale water sales volume. Same as line 16 of the Water Loss Audit for reporting periods >= 2015. Same as line 17 of the Water Loss Audit for reporting periods <= 2014. Produced + Imported - Exported = Total System Input Volume	81,739,785,000
5. Billed Metered: All retail water sold and metered Same as line 17 of the Water Loss Audit for reporting periods >= 2015. Same as line 18 of the Water Loss Audit for reporting periods <= 2014.	62,662,648,738
6. Other Authorized Consumption: Water that is authorized for other uses such as back flushing, line flushing, storage tank cleaning, fire department use, municipal government offices or municipal golf courses/parks. This water may be metered or unmetered. Same as lines 18, 19, and 20 of the Water Loss Audit for reporting periods >= 2015 Same as lines 19, 20, and 21 of the Water Loss Audit for reporting periods <= 2014.	11,661,579,312
7. Total Authorized Consumption: All water that has been authorized for use. Same as Line 21 of the Water Loss Audit for reporting periods >= 2015. Same as line 22 of the Water Loss Audit for reporting periods <= 2014 Total Billed and Metered Retail Water + Other Authorized Consumption / = Total Authorized Consumption	74,324,228,050
8. Total Apparent Losses: Water that has been consumed but not properly measured or billed (losses due to customer meter inaccuracy, systematic data handling discrepancy and/or unauthorized consumption such as theft). Same as line 27 of the Water Loss Audit for reporting periods >= 2015 Same as line 28 of the Water Loss Audit for reporting periods <= 2014.	204,349,462

9. Total Real Loss: Physical losses from the distribution system prior to reaching the customer destination (losses due to reported breaks and leaks, physical losses from the system or mains and/or storage overflow) Same as line 30 of the Water Loss Audit for reporting periods >= 2015. Same as line 31 of the Water Loss Audit for reporting periods <= 2014	7,211,207,487
10. Total Water Loss: Apparent + Real = Total Water Loss	7,415,556,949

Programs and Activities

1. What year did your entity adopt or revise their most recent Water Conservation Plan? 2014

2. Does The Plan incorporate Best Management Practices? (•) Yes ( ) No

3. Using the table below select the types of Best Management Practices or water conservation and reuse strategies actively administered during this reporting period and estimate the savings incurred in implementing water conservation and reuse activities and programs. Leave fields blank if unknown. **Please separate reuse volumes from gallons saved.**

Methods and techniques for determining gallons saved are unique to each utility as they conduct internal cost analyses and long-term financial planning. Texas Best Management Practice can be found at TWDB's Wate Conservation Best Management Practices webpage. The Alliance for Efficiency Water Conservation Tracking Tool may offer guidance on determining and calculating savings for individual BMPs

Best Management Practice	Check if Implemented	Estimated Gallons Saved	Estimated Gallons Reused
Conservation Analysis and Planning			
Conservation Coordinator	✓	0	0
Cost Effective Analysis			
Water Survey for Single Family and Multi-family Customers			
Financial			
Wholesale Agency Assistance Programs			
Water Conservation Pricing	✓	0	0
System Operations			
Metering New Connections and Retrofitting Existing Connections	✓	0	0
System Water Audit and Loss Control	✓	0	0
Landscaping			
Landscape Irrigation Conservation and Incentives			
Athletic Fields Conservation			
Golf Course Conservation			
Park Conservation			

Residential Landscape Irrigation Evaluation	✓	25,417,800	0
Education and Public Awareness			
School Education	✓	0	0
Public Information	✓	0	0
Small Utility Outreach and Education	☐		
Partnerships with Nonprofit Organizations	☐		
Rebate, Retrofit, and Incentive Programs			
Conservation Programs for ICI Accounts	✓	0	0
Residential Clothes Washer Incentive Program	☐		
Water Wise Landscape Design and Conversion Programs	✓	0	0
Showerhead, Aerator, and Toilet Flapper Retrofit	✓	4,761,290	0
Residential Toilet Replacement Programs	✓	15,516,150	0
ICI Incentive Programs	✓	0	0
Conservation Technology & Resuse			
New Construction Graywater	☐		
Rainwater Harvesting and Condensate Reuse	☐		
Reuse for On-site Irrigation	✓	0	10,000
Reuse for Plant Washdown	✓	0	2,700,000,000
Reuse for Chlorination/Dechlorination	✓	0	2,000,000,000
Reuse for Industry	☐		
Reuse for Agriculture	☐		
Regulatory and Enforcement			
Prohibition on Wasting Water	✓	0	0
Retail			
Other	✓	54,954,304,760	0
Totals		**55,000,000,000**	**4,700,010,000**

The other category is calculated based on a time series regression model that shows an estimated water savings on an annual basis. This includes all forms of water conservation efforts in a collective manner.

4. For this reporting period, estimate the savings from water conservation activities and programs.

Gallons Saved/Conserved	Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
55,000,000,000	4,700,010,000	59,700,010,000	57,059,658

[1]Estimated Gallons Saved + Estimated Gallons Recycled/Reused = Total Volume Saved

[2]Estimated this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital cost due to conservation.

5. Comments or Explanations Regarding Data Entered in Sections Above.
Files to support or explain this may be attached below.

The dollar value of the water saved was calculated by using the simple production and delivery cost of the treated water and not the retail or wholesale rate that includes many other cost factors in it.

6. During this reporting period, did your rates or rate structure change? ○ Yes ◉ No

Select the type of rate pricing structure used. Check all that apply.

☐	Uniform Rates
☐	Flat Rates
☑	Inclining/Inverted Block Rates
☐	Declining Block Rates
☐	Seasonal Rates
☐	Water Budget Based Rates
☐	Excess Use Rates
☐	Drought Demand Rates
☐	Tailored Rates
☐	Surcharge - usage demand
☐	Surcharge - seasonal
☐	Surcharge - drought
☐	Other

7. For this reporting period, select the public awareness or educational activities used.

Name	Implemented This Year	Number Of Times This Year	Total Population Reached this Year
Brochures Distributed	✓	37,821	37,821
Messages Provided on Utility Bills	✓	4,590,000	270,000
Press Releases			
TV Public Service Announcements			
Radio Public Service Announcements			
Educational School Programs	✓	275	7,392
Displays, Exhibits, and Presentations	✓	17	856
Community Events	✓	57	13,193
Social Media campaign - Facebook	✓	43,919	43,919
Social Media campaign - Twitter	✓	99,867	99,867
Social Media campaign - Instagram			
Social Media campaign - YouTube	✓	85,619	85,619
Facility Tours			
Other	✓	52,001,947	52,001,947
Total		56,859,522	52,560,614

Other category includes media impressions and website clicks that were not included in any of the previous categories.

Leak Detection and Water Loss

1. During this reporting period, how many leaks were repaired in the system or at service connections? 3975

2. Select the main cause(s) of water loss in your system.

	Water Loss Causes
✓	Distribution line leaks and breaks
✓	Unauthorized use and theft

☑		Master meter problems
☑		Customer meter problems
☑		Record and data problems
☐		Other

3. For this reporting period, provide the following information on your distribution lines.

Total Length of Main Lines (miles)	Total Length Repaired (feet)	Total Length Replaced (feet)
4983	5328	147007

4. For this reporting period, provide the following information regarding your meters:

Type of Meter	Total Number	Total Tested	Total Repaired	Total Replaced
Production Meters	314222	8901	1383	26712
Meters larger than 1 1/2 inches	32349	5544	559	6267
Meters 1 1/2 inches or smaller	281873	3357	824	20445

5. Does your system have automated meter reading? ○ Yes ◉ No

Program Effectiveness

1. Program Effectiveness

   In your opinion, how would you rank the overall effectiveness of your conservation programs and activities?

Customer Classification	Less Than Effective	Somewhat Effective	Highly Effective	Does Not Apply
Residential Customers	○	○	◉	○
Industrial Customers	○	○	◉	○
Institutional Customers	○	○	◉	○
Commercial Customers	○	○	◉	○
Agricultural Customers	○	○	○	◉

2. During the reporting period, did you implement your Drought Contingency Plan? ○ Yes ◉ No

3. Select the areas for which you would like to receive more technical assistance:

	Technical Assistance Areas
☐	Best Management Practices
☐	Drought Contingency Plans
☑	Landscape Irrigation
☐	Leak Detection and Equipment
☐	Rainwater Harvesting
☐	Rate Structures
☐	Educational Resources
☐	Water Conservation Annual Reports
☐	Water Conservation Plans
☐	Water IQ: Know Your Water
☐	Water Loss Audits
☑	Recycling and Reuse

Water Loss, Target and Goals

Total, Residential and Water Loss Gallons Per Capita per Day (GPCD) and Water Loss Percentage

The tables below display your current GPCD totals and water loss percentage for your service area.

Total System Input in Gallons Water Produced + Wholesale Imported - Wholesale Exported	Retail Population[1]	Total GPCD (System Input / Retail Population) / 365
81,739,785,000	1,286,380	174

[1]Retail Population is the total permanent population of the service area, including single family, multi-family, and group quarter populations

Residential Use in Gallons (Single Family + Multi-family)	Residential Population[2]	Residential GPCD (Residential Use / Residential Population) / 365
23,929,039,410	1,286,380	51

[2]Residential Population is the total residential population of the service area, including only single family and multi-family populations

Total Water Loss in Gallons Apparent + Real = Total Water Loss	Retail Population	Water Loss GPCD[3]	Water Loss Percent
7,415,556,949	1,286,380	16	9.07%

[3](Total Water Loss / Residential Population) / 365 = Water Loss GPCD
(Total Water Loss / Total System Input) * 100 = Water Loss Percentage

The table below displays the specific and quantified five-year and ten-year goals listed in your current Water Conservation Plan alongside the current GPCD and water loss totals.

Achieve Date	Target for Total GPCD	Current Total GPCD	Target for Residential GPCD	Current Residential GPCD	Target for Water Loss GPCD	Current Water Loss GPCD	Target for Water Loss Percentage	Current Water Loss Percentage
Five-year Target Date 2019	196	174	97	51	28	16	14.29 %	9.07 %
Ten-year Target Date 2024	195	174	96	51	27	16	13.85 %	9.07 %

APPENDIX L:

WATER CONSERVATION ANNUAL REPORT WHOLESALE SUPPLIER

Water Conservation Plan Annual Report
Wholesale Water Supplier

CONTACT INFORMATION

Name of Entity: City of Dallas Water Utilities

Public Water Supply Identification Number (PWS ID): 057004

CCN Number: P0001

Water Rights ID Number: 12468, etc.

Wastewater ID Number: TX0047848, TX47830

Check all that apply:

- [x] Retail Water Supplier
- [x] Wholesale Water Supplier
- [x] Wastewater Treatment Utility

Address: 1500 Marilla, 2AN City: Dallas Zip Code: 75201

Email: [redacted] Telephone Number: 214.670.5244

Regional Water Planning Group: C Map

Groundwater Conservation District: N/A Map

Form Completed By: Malini Banerjee Title: Water Conservation Coordinator

Date: 04/29/2019

Reporting Period (**check only one**):

- ( ) Fiscal Period Begin(mm/yyyy) _____ Period End(mm/yyyy) _____
- (•) Calendar Period Begin(mm/yyyy) 01/2018 Period End(mm/yyyy) 12/2018

Check all that apply:

- [ ] Received financial assistance of $500,000 or more from TWDB
- [x] Have 3,300 or more retail connections
- [x] Have a surface water right with TCEQ

SYSTEM DATA

1. For this reporting period, provide the **total volume of wholesale water exported** (transferred or sold): 56,286,985,000 gallons

2. For this reporting period, does your billing/accounting system have the capability to classify customers into the Wholesale Customer Categories?

   ○ Yes ◉ No

Wholesale Customer Categories*
- Municipal
- Industrial
- Commercial
- Institutional
- Agricultural

**Recommended Customer Categories for classifying customer water use. For definitions, refer to Guidance and Methodology on Water Conservation and Water Use.*

3. For this reporting period, select the category(s) used to calculate wholesale customer water usage:

   ☐ Municipal
   ☐ Industrial
   ☐ Commercial
   ☐ Institutional
   ☐ Agricultural

4. For this reporting year, enter the gallons of **WHOLESALE water exported** (transferred or sold). Enter zero if a Customer Category does not apply.

Wholesale Customer Category	Gallons Exported (transferred or sold)	Number of Customers
Municipal	56,286,985,000	
Industrial		
Commercial		
Institutional		
Agricultural		
Total	56,286,982,144	0

Water Use Accounting

	Total Gallons During the Reporting Period
Water Produced: Water from permitted sources such as rivers, lakes, streams, and wells.	138,026,770,000
Wholesale Water Imported: Purchased wholesale water transferred into the system.	
System Input: Total water supplied to system and available for use.	138,026,762,240 Produced + Imported = System Input
Wholesale Water Exported: Wholesale water sold or transferred out of the system.	56,286,982,144
Gallons Per Day:	154,210,918 Wholesale Water Exported ÷ 365 = Gallons Per Day
Population: Estimated total population for municipal customers.	1,174,110
Municipal Gallons Per Capita Per Day:	131 Municipal Exported ÷ Municipal Population ÷ 365 = Municipal Gallons Per Capita Per Day

Provide the **specific and quantified five and ten-year targets** as listed in your most current Water Conservation Plan.

	Date to Achieve Target	Specified and Quantified Targets
Five-year target	2019	196
Ten-year target	2024	195

Water Conservation Programs and Activities

1. Water Conservation Plan

What year did your entity adopt or revise their most recent Water Conservation Plan? 2019

Does The Plan incorporate Best Management Practices? (●) Yes ( ) No

2. Water Conservation Programs

Has your entity implemented any type of water conservation activity or program?
(●) Yes ( ) No

If yes, select the type(s) of Best Management Practices or water conservation strategies implemented during this reporting period.

Wholesale Supplier Activities and Practices
☐ Agricultural Conservation Programs
☑ Conservation Analysis & Planning
☑ Conservation Rate Structures
☑ Conservation Technology
☑ Education & Public Awareness
☑ Industrial Conservation Programs
☑ Leak Detection/ Water Loss Program
☑ Rebate, Retrofit, and Incentive Programs
☑ Regulatory & Enforcement
☑ System Operations
☑ Water Efficient Landscape Programs
☑ Water Use Audits

Other activities, list or describe.

3. Recycle/Reuse (Water or Wastewater Effluent)

For this reporting period, provide direct and indirect reuse activities.

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	10,000
Plant wash down	2,700,000,000
Chlorination/de-chlorination	2,000,000,000
Industrial	
Landscape irrigation (parks, golf courses)	
Agricultural	
Other, please describe:	
Estimated Volume of Reuse	4,700,010,000

4. Water Savings

For this reporting period, estimate the savings that resulted from water conservation activities and programs.

Estimated Gallons Saved/Conserved	Estimated Gallons Recycled/Reused	Total Volume of Water Saved[1]	Dollar Value of Water Saved[2]
55,000,000,000	4,700,010,000	59,700,012,544	$ 57,059,658

1. Estimated Gallons Saved + Estimated Gallons Recycled/Reused = Total Volume Saved
2. Estimate this value by taking into account water savings, the cost of treatment or purchase of water, and deferred capital costs due to conservation.

5. Program Effectiveness

In your opinion, how would you rank the overall effectiveness of your conservation programs and activities?

Less Than Effective	Somewhat Effective	Highly Effective	Does Not Apply
○	○	●	○

6. What might your entity do to improve the effectiveness of your water conservation program?

7. Select the areas for which you would like to receive technical assistance:

- [ ] Agricultural Best Management Practices
- [ ] Wholesale Best Management Practices
- [ ] Industrial Best Management Practices
- [ ] Drought Contingency Plans
- [x] Landscape Efficient Systems
- [ ] Leak Detection and Equipment
- [ ] Educational Resources
- [ ] Water Conservation Plans
- [ ] Water IQ: Know Your Water
- [ ] Water Loss Audits
- [ ] Rainwater Harvesting Systems
- [x] Recycling and Reuse

SUBMIT

APPENDIX M:

WATER CONSERVATION FIVE-YEAR IMPLEMENTATION REPORT

Texas Commission on Environmental Quality

Water Conservation Implementation Report
Public Water Supplier

This five year report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288. Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Availability Division at (512) 239-4691.

CONTACT INFORMATION

Name of Entity: Dallas Water Utility

Public Water Supply Identification Number (PWS ID):TX057004
CCN numbers: P0001
Water Right Permit numbers: 173, 450, 1415, 1583, 2389, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 5176, 5280, 5414, 5448, 5464, 5496, 12110, 12468
Wastewater ID numbers: TX0047848, TX47830

Check all that apply:
- ☒ Retail Public Water Supplier
- ☒ Wholesale Public Water Supplier

Address: 1500 Marilla St City: Dallas Zip Code: 75201

Email: Click here to enter text. Telephone Number: Click here to enter text.

Regional Water Planning Group: C Map

Groundwater Conservation District: Click here to enter text.Map

Form Completed By: Holly R. Holt-Torres Title: Water Conservation Manager

Signature: Holly R. Holt-Torres Date: 4/29/2019

Contact information for the person or department responsible for implementing the water conservation plan:

Name: Holly R. Holt-Torres Phone: 214-243-1175 Email: [redacted]

Report Completed on Date: 4/29/2019

Reporting Period (**check only one**):
- ☐ Fiscal Period Begin:Click here to enter a date. Period End: Click here to enter a date.
- ☒ Calendar Period Begin:January 2018 Period End: December 2018

Please check all of the following that apply to your entity:

☒ A surface water right holder of 1,000 acre-feet/year or more for non-irrigation uses
☐ A surface water right holder of 10,000 acre-feet/year or more for irrigation uses

Important

If your entity meets the following description, please skip page 3 and go directly to page 4.

Your entity is a Wholesale Public Water Supplier that ONLY provides wholesale water services for public consumption. For example, you only provide wholesale water to other municipalities or water districts.

Water Use Accounting

Retail Water Sold: *All retail water sold for public use and human consumption.*

Helpful Hints: There are two options available for you to provide the requested information. Both options ask the same information, however, the level of detail and break down of information differs between the two options. Please select just one option that works best for your entity and fill in the fields as completely as possible.

Fields that are gray are entered by the user. Select fields that are white and press F9 to updated fields.

For the five-year reporting period, enter the gallons of **RETAIL water sold** in each major water use category. Use **only one** of the following options.

Option 1

Water Use Category*	**Gallons Sold**
Single Family Residential	
Multi-Family Residential	
TOTAL Residential Use[1]	0
Industrial	
Commercial	
Institutional	
TOTAL Retail Water Sold[2]	0

1. [SF Res +MF Res = Residential Use]
2. [Res +Ind +Com +Ins = Retail Water Sold]

Option 2

Water Use Category *	**Gallons Sold**
Residential Select all of the sectors that your account for as "Residential". ☒Single Family ☐ Multi-Family	119,977,350,531
Commercial Please select all of the sectors that your account for as "Commercial". ☒ Commercial ☒ Multi-Family ☐ Industrial ☐ Institutional	172,973,879,401
Industrial Please select all of the sectors that your account for as "Industrial". ☒Industrial ☐ Commercial ☐ Institutional	343,659,931
Other Please select all of the sectors that your account for as "Other". ☐Commercial ☐Multi-Family ☐ Industrial ☒ Institutional Includes Agricultural use (2014-2016)	23,081,448,008
TOTAL Retail Water Sold[1]	316,376,337,871

1. [Res +Com +Ind + Other = Retail Water Sold]

Wholesale Water Exported: *Wholesale water sold or transferred out of the distribution system.*

For the five-year reporting period, enter the gallons of **WHOLESALE water exported** to each major water use category.

Water Use Category*	Gallons of Exported Wholesale Water
Municipal Customers	289,810,198,354
Agricultural Customers	
Industrial Customers	
Commercial Customers	
Institutional Customers	
TOTAL Wholesale Water Exported [1]	**289,810,198,354.00**

1. [Mun +Agr +Ind +Com +Ins = Wholesale Water Exported]

System Data

Fields that are gray are entered by the user. Select fields that are white and hit F9 to updated fields.

	Total Gallons During the Five-Year Reporting Period
Water Produced: Volume produced from own sources	711,566,902,275
Wholesale Water Imported : Purchased wholesale water imported from other sources into the distribution system	0
Wholesale Water Exported: Wholesale water sold or transferred out of the distribution system (Insert Total Volume calculated on Page 4)	289,810,198,354
TOTAL System Input : Total water supplied to the infrastructure	421,756,703,921 [Produced + Imported – Exported = System Input]
Retail Water Sold : All retail water sold for public use and human consumption (Insert Total Residential Use from Option 1 or Option 2 calculated on Page 3)	316,376,337,871
Other Consumption Authorized for Use but not Sold: - back flushing water - line flushing - storage tank cleaning - golf courses - fire department use - parks - municipal government offices	61,918,997,042
TOTAL Authorized Water Use: All water that has been authorized for use or consumption.	378,295,334,913 [Retail Water Sold + Other Consumption = Total Authorized]
Apparent Losses – Water that has been consumed but not properly measured (Includes customer meter accuracy, systematic data discrepancy, un- authorized consumption such as theft)	1,717,287,021
Real Losses – Physical losses from the distribution system prior to reaching the customer destination (Includes physical losses from system or mains, reported breaks and leaks, storage overflow)	40,722,334,676
Unidentified Water Losses	1,021,747,311 [System Input- Total Authorized - Apparent Losses - Real Losses = Unidentified Water Losses]
TOTAL Water Loss	10,915,329,261 [Apparent + Real + Unidentified = Total Water Loss]

Targets and Goals

In the table below, please provide the **specific and quantified five and ten-year targets for water savings** listed in your water conservation plan.

Fields that are gray are entered by the user. Select fields that are white and hit F9 to update fields.

Date	Target for: Total GPCD	Target for: Water Loss (expressed in GPCD)	Target for: Water Loss Percentage (expressed in Percentage)
Five-year target date: dd/mm/2019	196	28	10%
Ten-year target date: dd/mm/2024	195	27	10%

Are targets in the water conservation plan being met? Yes ☒ No ☐

If these targets are not being met, provide an explanation as to why, including any progress on these targets: Click here to enter text.

Gallons per Capita per Day (GPCD) and Water Loss

Compare your current gpcd and water loss to the above targets and goals set in your previous water conservation plan.

Total System Input in Gallons	Permanent Population	Current GPCD
84351340784 (5 Year Average Input) [Produced + Imported – Exported = System Input]	1258182 (5 Year Average Population)	183.68 [(System Input ÷ Permanent Population) /5/ 365]

Permanent Population is the total permanent population of the service area. This includes single family, multi-family, and group quarter populations.

Total Residential Use	Permanent Population	Residential GPCD
23995470 (5 Year Average Residential Use)	1258182 (5 Year Average Population)	52.25 [(Residential Use ÷ Residential Population) / 5/ 365]

Residential Population is the total residential population of the service area including single & multi-family population.

Total Water Loss	Total System Input in Gallons	Permanent Population	Water Loss calculated in	
			GPCD [1]	Percent [2]
218306585.2 [Apparent + Real + Unidentified = Total Water Loss]	84351340784.2 [Water Produced + Wholesale Imported - Wholesale Exported]	1258182	18.6	9.66%

1. [Total Water Loss – Permanent Population] / 5/ 365 = Water Loss GPCD]
2. [Total Water Loss ÷ Total System Input] x 100 = Water Loss Percentage]

Water Conservation Programs and Activities

As you complete this section, please review your water conservation plan to see if you are making progress towards meeting your stated goals.

Fields that are gray are entered by the user. Select fields that are white and hit F9 to updated fields.

1. Water Conservation Plan

What year did your entity adopt, or revise, their most recent water conservation plan: 2019

Does the plan incorporate Best Management Practices? Yes ☒ No ☐

2. Water Conservation Programs

For the reporting period, please select the types of activities and programs that have been actively administered, and estimate the expense and savings that incurred in implementing the conservation activities and programs for the past five years. Leave the field blank if unknown:

Program or Activity	Estimated Expenses	Estimated Gallons Saved
Conservation Analysis & Planning		
☒ Conservation Coordinator	$500,000	
☐ Water Survey for Single-Family and Multi-Family Customers		
Financial		
☐ Wholesale Agency Assistance Programs		
☒ Water Conservation Pricing/ Rate Structures		
System Operations		
☒ Water Loss Audits		
☒ Leak Detection		
☒ Universal Metering and Metering Repair		
Landscaping		

☒ Landscape Irrigation Conservation and Incentives	$750,000	
☐ Athletic Fields Conservation		
☐ Golf Course Conservation		
☐ Park Conservation		
Education & Public Awareness		
☒ School Education	$2,250,000	
☒ Public Information	$4,759,000	
Rebate, Retrofit, and Incentive Programs		
☒ Conservation Programs for ICI Accounts	$842,320	1,583,070
☐ Residential Clothes Washer Incentive Program		
☐ Water Wise Landscape Design and Conversion Programs		
☒ Showerhead, Aerator, and Toilet Flapper Retrofit	$2,000,000	22,298,360
☒ Residential Toilet Replacement Programs	$1,500,000	234,887,628
☐ Rainwater Harvesting Incentive Program		
☒ ICI Incentive Programs		
Conservation Technology		
☐ Recycling and Reuse Programs (Water or Wastewater Effluent)		
☐ Rainwater Harvesting and Condensate Reuse Programs		
Regulatory and Enforcement		
☒ Prohibition on Wasting Water		
TOTAL	$12,601,320	258,769,058

3. Reuse (Water or Wastewater Effluent)

For the reporting period, please provide the following data regarding the types of direct and indirect reuse activities that were administered for the past five years:

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	67,031,000
Plant wash down	30,900,000,000
Chlorination/de-chlorination	5,000,000,000
Industrial	
Landscape irrigation (parks, golf courses)	
Agricultural	
Other, please describe:	

Estimated Volume of Recycled or Reuse	35,967,031,000

4. Water Savings

For the five-year reporting period, estimate the total savings that resulted from your overall water conservation activities and programs?

Estimated Gallons Saved (Total from Conservation Programs Table) ***Includes our water savings estimates produced by our Time Series Model***	**Estimated Gallons Recycled or Reused** (Total from Reuse Table)	**Total Volume of Water Saved** [1]	**Dollar Value of Water Saved** [2]
285,502,277,330	3,596,7031,000	321,469,308,330	$308,610,536

1. [Estimated Gallons Saved + Estimated Gallons Recycled or Reused = Total Volume Saved]
2. Estimate this value by taking into account water savings, the cost of treatment or purchase of your water, and any deferred capital costs due to conservation.

5. Conservation Pricing / Conservation Rate Structures

During the five-year reporting period, have your rates or rate structure changed? Yes ☐ No ☐

Please indicate the type of rate pricing structures that you use:

☐ Uniform rates	☐ Water Budget Based	☐ Surcharge - seasonal
☐ Flat rates	☐ Excess Use Rates	☐ Surcharge - drought
☒ Inclining/ Inverted Block	☐ Drought Demand rates	☐ Surcharge - usage demand
☐ Declining Block rates	☐ Tailored rates	
☐ Seasonal rates		

6. Public Awareness and Education Program

For the five-year reporting period, please check the appropriate boxes regarding any public awareness and educational activities that your entity has provided:

	Implemented	**Number/Unit**
Example: Brochures Distributed	☐	*10,000/year*
Example: Educational School Programs	☐	*50 students/month*
Brochures Distributed	☒	79,699
Messages Provided on Utility Bills	☒	11,258,064

Press Releases	☒	409
TV Public Service Announcements	☒	7296
Radio Public Service Announcements	☒	5417
Educational School Programs	☒	59,050
Displays, Exhibits, and Presentations	☒	213
Community Events	☒	154
Social Media campaigns	☒	4,963,494,946
Facility Tours	☒	4
Other :	☒	

7. Leak Detection

During the five-year reporting period, how many leaks were repaired in the system or at service connections: Click here to enter text.

Please check the appropriate boxes regarding the main cause of water loss in your system during the reporting period:

☒ Leaks and breaks
☒ Un-metered utility or city uses
☒ Master meter problems
☒ Customer meter problems
☒ Record and data problems
☐ Other: Click here to enter text.
☐ Other: Click here to enter text.

8. Universal Metering and Meter Repair

For the five-year reporting period, please provide the following information regarding meter repair:

	Total Number	Total Tested	Total
Production Meters	96,091	28,723	106,171
Meters larger than 1 ½"	21,880	16,174	50,603
Meters 1 ½ or smaller	76,774	21,246	92,948

Does your system have automated meter reading? Yes ☒ No ☐

	Do not have activities or programs that target this type customer.	Less Than Effective	Somewhat Effective	Highly Effective
Residential Customers	☐	☐	☐	☒
Industrial Customers	☐	☐	☐	☒
Institutional Customers	☐	☐	☐	☒
Commercial Customers	☐	☐	☐	☒
Agricultural Customers	☐	☐	☐	☐

9. Conservation Communication Effectiveness

In your opinion, how would you rank the effectiveness of your conservation activities in reaching the following types of customers for the past five years?

10. Drought Contingency and Emergency Water Demand Management

During the five-year reporting period, did you implement your Drought Contingency Plan?

Yes ☐ No ☒

If yes, indicate the number of days that your water use restrictions were in effect: Click here to enter text.

If yes, please check all the appropriate reasons for your drought contingency efforts going into effect.

☐ Water Supply Shortage	☐ Equipment Failure
☐ High Seasonal Demand	☐ Impaired Infrastructure
☐ Capacity Issues	☐ Other:

If you have any questions on how to fill out this form or about the Water Conservation program, please

contact us at 512/239-4691.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

Worksheet 6.0 (Conti.)

6.0 (2) Drought Contingency Plan

Dallas City Council Resolution 190608 dated April 24, 2019 is on the file at TCEQ.

dallas water utilities
city of dallas

City of Dallas
2019 Drought Contingency Plan

Dallas Water Utilities
1500 Marilla, 4AN
Dallas, Texas 75201

Table of Contents

2019 DROUGHT CONTINGENCY PLAN

FOR THE CITY OF DALLAS
and the
DALLAS WATER UTILITIES

Section I: Declaration of Policy, Purpose, and Intent

This Drought Contingency Plan describes the conditions that require short-term water demand management in the City of Dallas and establishes policies and procedures that offer strategies for a timely and effective response. In general, such a response would be needed when water use in the area served by Dallas Water Utilities (DWU) approaches the system's supply, treatment, or delivery capacity. Examples include drought conditions, unusually high-water demands, unforeseen equipment or system failure, or contamination of a water supply source.

To conserve the available water supply and protect the integrity of water supply facilities, with regard to domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the Dallas City Council adopted this Drought Contingency Plan (the Plan), by City Council resolution No. 190680 as presented in Appendix A.

The strategies offered in the Plan are based on current projected water availability. It should be noted that the effectiveness of the Plan is impacted by the availability and allocation of the raw water supply during drought conditions and the level of customer compliance with the strategies offered in the Plan. The raw water supply availability is dependent upon the water usage by current and future users of the raw water in the reservoirs. These factors are dynamic and, if circumstances warrant, modifications to the strategies offered in the Plan may be necessary. Therefore, this plan as approved by the City Council on April 24, 2019, gives the Director of the Water Department the authority to modify the strategies in the Plan as conditions warrant.

Water uses regulated or prohibited under this Drought Contingency Plan are non-essential and continuation of such uses during times of water shortage or other emergency water supply conditions is deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section X of this Plan.

This Drought Contingency Plan meets Texas Commission on Environmental Quality (TCEQ) rules of development and minimum requirements for the drought contingency plans for municipal water suppliers and wholesale water suppliers contained in Texas Administrative Code (TAC) Title 30, Part 1, Chapter 288, Subchapter B, Rules 288.20 and 288.22, respectively. Refer to Appendix B for the TAC, Title 30, Chapter 288, Subchapter B.

Section II: Public Involvement

Opportunity for the public and the wholesale water customers to provide input into the preparation of the Plan was provided by the City of Dallas by means of:

- Providing written public notice that a drought contingency plan is being prepared.
- Notifying all wholesale customers of the proposed plan.
- Providing a copy of the draft version of this plan to any person who requested it, making the Draft Plan available for download on the Dallas Water Utilities webpage.
- Convening a public meeting to accept input on the Plan.

The valuable contributions of the participants helped to create a Drought Contingency Plan that is fair and equitable to all citizens of Dallas and its wholesale customer cities.

Section III: Public Education

The City of Dallas will periodically provide the public with bilingual information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information may be provided by means of, but not limited to, an appropriate combination of the following items:

- Public service announcements on radio, television, and City of Dallas on-line News Channels
- Newspaper and magazine articles and announcements
- Interviews on radio and television programs
- Press releases, media alerts and social media
- Billboards
- Dallas 311 Customer Service Center
- Water Conservation / SaveDallasWater.com Website
- Water Conservation / Drought Contingency Hotline
- Email and telephone notifications to customers
- Mailed water bill inserts
- Distribution of fact sheets, brochures, and pamphlets
- Mass mailings of notification letters
- DWU customer service representatives
- Public meetings and hearings
- Public education seminars
- Stakeholder Advisory Committee Meetings
- Commercial, industrial and institutional employee education seminars

Effective communication will be maintained with all wholesale water customers or entities through periodic wholesale water customer meetings and mailings.

Section IV: Coordination with Regional Water Planning Groups

The service area of Dallas Water Utilities is located within Region C Water Planning Group and the City of Dallas will provide a copy of this Plan to the Region C Water Planning Group. Refer to Appendix C for a copy of the transmittal letter to the Region C Water Planning Group.

Section V: Authorization

The City Manager, or the properly appointed designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The City Manager, or the properly appointed designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan. The authority to implement and enforce the Drought Contingency Plan is established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-20, EMERGENCY AUTHORITY available in Appendix D.

Section VI: Application

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the City of Dallas. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Definitions

For the purposes of this Plan, the following definitions shall apply:

(1) ***Aesthetic water use:*** water use for ornamental or decorative purposes, including but not limited to fountains, reflecting pools, and water gardens.

(2) ***Allowed watering hours:*** as established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-21.1 (Available in Appendix E).

(3) ***Automatic Irrigation System:*** means a site-specific system of delivering water, generally for landscape irrigation, via a system of pipes or other conduits installed below ground that will automatically cycle water using landscape sprinklers according to a preset program, whether on a designated timer or through manual operation.

(4) ***Aquatic Life:*** a vertebrate organism dependent upon an aquatic environment to sustain its life.

(5) ***City Manager:*** The City Manager for the City of Dallas.

(6) ***Commercial water use:*** the use of water by a place of business such as retail establishments, hotels and motels, restaurants, and office buildings.

(7) ***Conservation:*** those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve efficiency in the use of water, or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

(8) ***Contamination:*** a naturally occurring or man-made element which compromises the safety of the water supply.

(9) ***Customer:*** any person, company, entity or organization using water supplied by the City of Dallas.

(10) ***Delivery capacity:*** refers to the maximum amount of water that can be delivered to customers when considering the limitation of the system components such as sources, treatment, storage, transmission, or distribution, individually and in combination with each other when operating at their designed capacity.

(11) ***The Director:*** Director of the Water Department for City of Dallas Water Utilities.

(12) ***Domestic water use:*** water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

(13) ***Drip Irrigation:*** micro irrigation with low volume and low-pressure release of water through point source emitters or pressure compensating in-line drip emitters.

(14) ***Drought Contingency Plan:*** a strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. This document is the Drought Contingency Plan for the City of Dallas.

(15) ***Drought of Record:*** the worst drought recorded in the north central/north-east Texas area.

(16) ***Eastern Lakes:*** The Eastern Lakes for the City of Dallas consist of Lake Ray Hubbard, Lake Tawakoni, and Lake Fork.

(17) ***Even number address:*** street addresses (e.g. 120 Magnolia St.), box numbers, or rural postal route numbers (e.g. RR 2 Box 9802) ending in 0, 2, 4, 6, or 8 and locations without addresses.

(18) ***Foundation Watering:*** the application of water using a hand-held hose, soaker hose or drip irrigation system placed within 24 inches of the foundation, which does not produce a spray above ground or result in water run-off.

(19) ***Golf Course:*** a commercial or governmental property made up of greens, tees, fairways and related areas which are irrigated and landscaped for the purposes of playing golf

(20) ***Hand watering:*** the application of water for irrigation purposes through a hand-held water hose, watering can or bucket.

(21) ***Hose-end Sprinkler:*** a device through which water flows from a hose to a sprinkler to water any lawn or landscape.

(22) ***Industrial water use:*** the use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value.

(23) ***Institutional use:*** the use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

(24) ***Interruptible Customer:*** a customer with an interruptible service contract, as established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-1.

(25) ***Landscape irrigation use:*** water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

(26) ***Non-essential water use:*** water uses that are not essential or required for the protection of public, health, safety, and welfare, including:

a. irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Plan;

b. use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;

c. use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;

d. use of water to wash down buildings or structures for purposes other than immediate fire protection;

e. flushing street gutters or permitting water to run or accumulate in any gutter or street;

f. use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, hot tubs or Jacuzzi-type pools;

g. use of water in a human made water feature, including but not limited to a fountain or pond for aesthetic or scenic purposes except as necessary to support aquatic life;

h. failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and

i. use of water from hydrants for construction purposes or any other purposes other than firefighting and flushing of lines for regulatory required testing and/or to maintain a potable water supply.

(27) ***Non-Potable Water:*** water that is not intended or suitable for drinking and has not been approved for human consumption.

(28) ***Ornamental Fountain:*** an artificially created structure from which a jet, stream, valves and emission devices or flow of water emanates and is not typically utilized for the preservation of aquatic life.

(29) ***Odd Numbered Address:*** street addresses (e.g. 121 Magnolia St.), box numbers, or rural postal route numbers (e.g. RR 2 Box 9803) ending in 1, 3, 5, 7, or 9.

(30) ***Potable Water:*** water that is suitable for drinking by the public.

(31) ***Recreational Water Use:*** water used for leisure and entertainment purposes. Examples include but are not limited to swimming pools, Jacuzzi-type pools, water theme parks, wading pools and water toys.

(32) ***Reduced Delivery Capacity:*** refers to the maximum amount of water that can be delivered to customers when considering reductions of delivery capacity based on scheduled shutdowns of infrastructure and/or unforeseen shutdowns of infrastructure, such as line breaks, equipment failure, etc.

(33) ***Retail Customers:*** non-wholesale customers.

(34) ***Run-off:*** a stream of water which overflows from a lawn or landscape onto a street, sidewalk, parking lot or other impervious area for a distance of more than 50 feet; or forms a puddle or pond to a depth greater than one-quarter of an inch.

(35) ***Soaker Hose:*** a permeable garden-type hose that is laid above ground that provides irrigation at a slow and constant rate.

(36) ***Swimming Pool:*** a structure that is used for swimming, bathing, or water play, including all equipment and appurtenant facilities.

(37) ***TCEQ:*** The Texas Commission of Environmental Quality

(38) ***Vehicle Wash Facility:*** a permanently-located business that washes vehicles or other mobile equipment with water or water-based products, including but not limited to self-service car washes, full service car washes, roll-over/in-bay style car washes, and facilities managing vehicle fleets or vehicle inventory.

(39) ***Water Supply System:*** DWU water supply sources (lakes) and all infrastructure related to the delivery of water to customers.

(40) ***Water Supply Sub-system:*** DWU water supply sources (lakes) and all related infrastructure required for delivery of water to a specific section of the service area.

(41) ***Western Lakes:*** The Western Lakes for the City of Dallas consist of Lake Ray Roberts, Lake Lewisville, and Lake Grapevine. (In the future, Lake Palestine may be connected to the City of Dallas' Western Lakes via the Integrated Pipeline.)

(42) ***Wholesale Treated Water Customer:*** any water supplier that receives all or a portion of its treated water supply directly or indirectly from DWU.

(43) ***Untreated water customer:*** any person, company, organization or water supplier buying non-potable water from DWU.

Section VIII: Triggering Criteria and Rationale for Initiation & Termination of Drought Response Stages

The Director of the Water Department or authorized designee shall monitor water supply and/or demand conditions, at a minimum, on a weekly basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified "triggers" are reached. The Director of the Water Department reserves the authority to recommend that a Stage be or not be initiated based on:

- weather conditions;
- total water supply availability, or water sub-system supply availability;
- rate of water supply decline or replenishment; or
- anticipation of change in water supply/treatment/distribution capacity.

Upon recommendation of the Director of the Water Department, the City Manager may initiate, upgrade or downgrade a stage when the conditions triggering that stage occur. Retail customer notification of the initiation or termination of drought response stages will be made by the Director of the Water Department or the Director of the Water Department's designee, as established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-20, EMERGENCY AUTHORITY available in Appendix D.

Wholesale water customer notification of the initiation or termination of drought response stages will be made by the Director of the Water Department or Director of the Water Department's designee directly by fax, mail, email, telephone, or other means of communication that allows for a confirmation of receipt by the customer.

- **Additional Notification:**

The Director of the Water Department or authorized designee shall notify directly, or cause to be notified directly by fax, mail, email, or telephone, the following individuals and entities as appropriate to the respective drought stages:

A. Mayor and members of the City Council

B. City and/or County Emergency Management Coordinator(s)

C. County Judge & Commissioner(s)

D. State Disaster District / Department of Public Safety

E. Executive Director of the TCEQ (required within five (5) business days of the implementation of any mandatory restrictions)

F. Critical water users (e.g., hospitals)

G. Parks/street superintendents & public facilities managers

The triggering criteria described below are based on the ability of the City to deliver treated water to the customers. Modeling of the reservoir system shows how supplies would be diminished during a drought equal to the drought of record. Each water supply sub-system was modelled separately. To set trigger conditions, DWU also examined water demand and the system's delivery capacity. The

trigger levels were selected to provide adequate supply for each critical sub-system throughout the drought of record. The trigger conditions for short-term deficiencies limiting water supply capability are based on how much water supply or delivery capacity remains available relative to water demand, for all or part of the system.

❁ **Stage 1 Triggers**

A. Requirements for Initiation:

Customers shall be requested to adhere to voluntary measures and shall be required to comply with the requirements and mandatory restrictions on certain non-essential water uses provided in Section IX of this Plan when:

- Either: (1) the total raw water supply in connected lakes (east and west); or, (2) the western lakes; or, (3) the eastern lakes have dropped below 65% (35% depleted) of DWU's share of the total conservation storage of the lakes; or
- Water demand has reached or exceeded 85% of delivery capacity for 4 consecutive days; or
- Water demand approaches a reduced delivery capacity for all or part of the system, as determined by DWU; or
- Water line breaks or pump or system failures, which impact the ability of DWU to provide treated water service; or
- Natural or man-made contamination of the water supply source(s) occurs.

B. Requirements for Termination:

- Stage 1 may be terminated when Stage 1 conditions no longer exist and would be unlikely to recur upon termination.

❁ **Stage 2 Triggers**

A. Requirements for Initiation:

Customers shall be requested to adhere to voluntary measures and shall be required to comply with the requirements and mandatory restrictions on certain non-essential water uses provided in Section IX of this Plan when:

- Either: (1) the total raw water supply in connected lakes (east and west); or, (2) the western lakes; or, (3) the eastern lakes have dropped below 50% (50% depleted) of DWU's share of the total conservation storage of the lakes; or
- Water demand has reached or exceeded 90% of delivery capacity for 3 consecutive days; or
- Water demand **equals** a reduced delivery capacity for all or part of the system, as determined by DWU; or
- Water line breaks or pump or system failures occur, which impact the ability of DWU to provide treated water service; or
- Natural or man-made contamination of the water supply source(s) occurs.

B. Requirements for Termination

- Stage 2 may be terminated when Stage 2 conditions no longer exist and would be unlikely to recur upon termination.

❁ **Stage 3 Triggers**

A. Requirements for Initiation

Customers shall be required to comply with the requirements and mandatory restrictions on certain non-essential water uses provided in Section IX of this Plan when:

- Either (1) the total raw water supply in connected lakes (east and west) or (2) the western lakes or (3) the eastern lakes have dropped below 35% (65% depleted) of DWU's share of the total conservation storage; or
- Water demand has reached or exceeded 95% of delivery capacity for 2 consecutive days; or
- Water demand exceeds a reduced delivery capacity for all or part of the system, as determined by DWU; or
- Water line breaks or pump or system failures occur, which impact the ability of DWU to provide treated water service; or
- Natural or man-made contamination of the water supply source(s) occurs

B. Requirements for Termination

- Stage 3 of the Plan may be terminated when the Stage 3 conditions no longer exist and would be unlikely to recur upon termination.

Section IX: Drought Response Stages

The Director of the Water Department, or appointed designee, shall monitor water supply and/or demand conditions on a weekly basis and, in accordance with the triggering criteria set forth in Section VIII of this Plan, shall determine if conditions exist that would trigger any of the designated drought stages, and if so, shall implement the following actions:

❁ **Stage 1 Response**

Target: Achieve a 5 percent reduction in total gallons per capita per day (GPCD).

Water Use Restrictions for Demand Reduction:

Following is a menu of possible actions. Specific actions taken during any drought situation will be determined by the Director of the Water Department. The Director of the Water Department may also take other actions not listed, if deemed necessary.

All Water Users

Landscape Uses:

A. All water customers are reminded to observe all requirements of the Water Conservation Ordinance, as established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-21, which includes a **mandatory** maximum 2-days-per-week landscape watering schedule and require watering only during

allowed watering hours as defined in Section VII. Irrigation of landscaped areas with hose-end sprinklers and automatic irrigation systems is limited to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8) and for locations without addresses and limited to Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9). Apartments, office building complexes or other properties containing multiple addresses may be identified by the lowest address number.

B. Encourage reduction of water use through **voluntary** maximum 1-day-per-week landscape watering schedule.

C. Discourage planting of new landscapes, including lawns, hydro-seeding and sod.

Swimming Pools and Other Recreational Uses:

A. Encourage reduction in frequency in draining and refilling of swimming pools.

B. Prohibit recreational water usage, including the use of faucets, hoses or hydrants, which results in water run-off or other prohibited waste of water.

Foundations:

Foundations may be watered on any day of the week and at any time. Foundations may be watered with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shutoff nozzle.

Vehicle Washing:

Restrict washing of any motor vehicle, motorbike, boat, trailer, airplane or other vehicle to the use of a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial vehicle wash facility or commercial service station. Companies with an automated on-site vehicle washing facility may wash vehicles at any time.

City Government:

A. Initiate public education campaign teaching and encouraging reduced water use practices.

B. Intensify normal leak detection and repair activities on water pipes and mains.

C. Require reduction of water use through mandatory maximum twice weekly landscape watering schedule for city parks and golf courses.

D. Encourage reduction of water use in city-owned ornamental fountains.

E. Encourage additional reduction in landscape uses for parks.

F. Encourage 25 percent reduction in frequency of wet street sweeping and city vehicle washing and rinsing.

G. Increase enforcement efforts through proactive code enforcement.

Commercial Customers:

A. Identify and encourage voluntary reduction measures by high-volume water users through water use audits.

B. Require reduction of water use through mandatory maximum twice weekly landscape watering schedule for private parks and golf courses.

C. Encourage additional reduction in landscape uses for parks.

D. Encourage reduction in water use for landscape nursery stock.

E. Encourage area restaurants to serve customers water by request only.

F. Encourage hotel/motels to request multiple day patrons to reuse linens instead of changing every day.

Wholesale Untreated Water Customers:

Require implementation of like procedures by wholesale water customers in accordance with their water contracts, state mandated drought and conservation plans, State law and TCEQ regulations.

Wholesale Water Customer:

Require implementation of like procedures by wholesale water customers in accordance with their water contracts, state mandated drought and conservation plans, state law and TCEQ regulations.

Interruptible Water Customers:

Reduce usage for interruptible customers per contract terms.

❄ Stage 2 Response

Target: Achieve a 15 percent reduction in total gallons per capita per day (GPCD).

Water Use Restrictions for Demand Reduction:

Following is a menu of possible actions. Specific actions taken during any drought situation will be determined by the Director of the Water Department. The Director of the Water Department may also take other actions not listed, if deemed necessary. All requirements of Stage 1 shall remain in effect during Stage 2, and the following additional measures will be required:

All Water Users:

Landscape Uses:

A. All water customers are reminded to observe all requirements of the Water Conservation Ordinance, as established in the Dallas City Code, Chapter 49, Water and Wastewater, Section 49-21. Additionally, require reduction of water use through **mandatory** maximum 1-day-per-week landscape watering schedule and require watering only during allowed watering hours as defined in Section VII. Irrigation of landscaped areas with hose-end sprinklers and automatic irrigation systems will be limited to trash pick-up days for residential customers and Wednesdays for commercial customers. Strongly discourage planting of new landscapes, including lawns, hydro-seeding and sod.

Swimming Pools and Other Recreational Uses:

A. Encourage further reduction in frequency in draining and refilling of swimming pools.

B. Continue to prohibit recreational water usage, including the use of faucets, hoses or hydrants, which results in water run-off or other prohibited waste of water.

Foundations:

Foundations may be watered on any day of the week and at any time. Foundations may be watered with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shut-off nozzle.

Vehicle Washing:

Restrict washing of any motor vehicle, motorbike, boat, trailer, airplane or other vehicle to the use of a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial vehicle wash facility or commercial service station. Companies with an automated on-site vehicle washing facility may wash vehicles at any time.

High Demand Surcharge:

A. Residential Customers
A 25 percent rate increase for high water demand users (greater than 15,000 gallons per month per account) shall be initiated to discourage non-essential use.

B. Commercial Customers
A 25 percent rate increase for high water demand users (greater than 10,000 gallons and 1.4 times annual average monthly usage per account) shall be initiated to discourage non-essential use.

City Government:

A. Initiate engineering studies to evaluate alternatives to mitigate drought conditions should conditions worsen.

B. Accelerate public education campaign teaching and encouraging reduced water use practices.

C. Continue intensified leak detection and repair activities on water pipes and mains.

D. Prohibit flushing of new mains not immediately required to provide service.

E. City government restricted to mandatory maximum once weekly landscape watering schedule.

F. Require reduction of water use through mandatory once weekly landscape watering schedule for city parks and golf courses.

G. Prohibit operation of city-owned ornamental fountains and water features.

H. Reduce frequency of wet street sweeping and city vehicle washing or rinsing by 50 percent.

I. Increase enforcement efforts through proactive code enforcement.

Commercial Customers:

Require reduction of water use through mandatory maximum once weekly landscape watering schedule for private parks and golf courses.

Wholesale Water Customer

Require water demand reductions in accordance with contract obligations for wholesale water customers.

Wholesale Water Contracts:

Every offer for a new wholesale contract shall be reviewed. An assessment of the current and future water delivery capacity of DWU for the contract terms will be performed to ensure the sustainability of DWU's commitments to current customers.

❁ Stage 3 Response

Target: Achieve a 20 percent reduction in total gallons per capita per day (GPCD).

Water Use Restrictions for Reducing Demand:

Following is a menu of possible actions. Specific actions taken during any drought situation will be determined by the Director of the Water Department. The Director of the Water Department may also take other actions not listed, if deemed necessary. All requirements of Stages 1 and 2 shall remain in effect during Stage 3, and the following additional measures will be required:

All Water Users

Landscape Uses:

A. Irrigation of turf, shrubs, perennials, annuals, ground covers and any other landscaped area by any method is absolutely prohibited. Trees may be irrigated with drip irrigation system, soaker hoses or with a hand-held hose one day per week on the Stage 2 watering schedule and within the permitted watering hours.

B. Installation of new landscapes or turf areas is prohibited.

C. Operation of any water feature, ornamental fountain or pond that uses potable water is prohibited except where supporting aquatic life or water quality.

Swimming Pools and Other Recreational Uses:

A. Prohibit the filling, draining and refilling of existing swimming pools, wading pools, Jacuzzi and hot tubs except to maintain structural integrity, proper operation and maintenance or alleviate a public safety risk. Existing pools may add water to replace losses from normal use and evaporation.

B. Permitting of new swimming pools, wading pools, water features, Jacuzzi and hot tubs is prohibited.

C. Continue to prohibit recreational water usage, including the use of faucets, hoses or hydrants, which results in water run-off or other prohibited waste of water.

Foundations:

Foundations may be watered one day per week on the Stage 2 watering schedule within the permitted watering hours. Foundations may be watered with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shutoff nozzle. Water run-off is absolutely prohibited.

Vehicle washing:

Use of water to wash any motor vehicle, motorbike, boat, trailer or other vehicle not occurring on the premises of a commercial vehicle wash facility or commercial service stations is prohibited. Companies with an automated on-site vehicle washing facility may wash its vehicles at any time. Further, such washing may be exempt from these requirements if the health, safety and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and commercial vehicles used to transport food and perishables.

Impervious surface cleaning:

Hosing and washing of paved areas, buildings, structures, windows or other surfaces is prohibited except by variance and performed by a professional service using high efficiency equipment.

High Demand Surcharge:

A. Residential Customers
A 50 percent rate increase for high water demand users (greater than 15,000 gallons per month per account) shall be initiated to discourage non-essential use.

B. Commercial Customers
A 50 percent rate increase for high water demand users (greater than 10,000 gallons and 1.4 times annual average monthly usage per account) shall be initiated to discourage non-essential use.

New Service:

No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.

City Government:

A. Wet street sweeping and city vehicle washing or rinsing is prohibited except for reasons of public health, safety and welfare.

B. Municipal landscape watering prohibited except golf courses (see below).

C. Watering of golf course greens and tee boxes are restricted to the allowed watering hours as defined in Section VII; watering of other golf course areas and parks is prohibited.

Commercial Customers:

Watering of golf course greens and tee boxes are restricted to the allowed watering hours as defined in Section VII; watering of other golf course areas or parks is prohibited unless the golf course uses a water source other than that provided by the City of Dallas.

Wholesale Water Contracts:

No new wholesale contracts shall be entertained unless there is an emergency situation. Every request for a new wholesale contract shall be reviewed. An assessment of the current and future water delivery capacity of DWU for the contract terms will be performed to ensure the sustainability of DWU's commitments to current customers.

Water Allocation

Wholesale Water Customers- In the event that the triggering criteria specified in Section VIII of the Plan for Stage 3 have been met, the Director of the Water Department is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with the latest revision of Texas Water Code Section 11.039, which states:

§11.039. Distribution of Water During Shortage:

(a) If a shortage of water in a water supply not covered by a water conservation plan prepared in compliance with Texas Commission on Environmental Quality or Texas Water Development Board rules results from drought, accident, or other cause, the water to be distributed shall be divided among all customers pro rata, according to the amount each may be entitled to, so that preference is given to no one and everyone suffers alike.

(b) If a shortage of water in a water supply covered by a water conservation plan prepared in compliance with Texas Commission on Environmental Quality or Texas Water Development Board rules results from drought, accident, or other cause, the person, association of persons, or corporation owning or controlling the water shall divide the water to be distributed among all customers pro rata, according to:

(1) the amount of water to which each customer may be entitled; or

(2) the amount of water to which each customer may be entitled, less the amount of water the customer would have saved if the customer had operated its water system in compliance with the water conservation plan.

(c) Nothing in Subsection (a) or (b) precludes the person, association of persons, or corporation owning or controlling the water from supplying water to a person who has a prior vested right to the water under the laws of this state.

DWU may curtail water deliveries or reduce diversions in accordance with the terms and conditions of its wholesale water supply contracts. If necessary, or if specific contract provisions are not provided for, DWU may curtail water deliveries or reduce diversions in accordance with Texas Water Code Section 11.039. DWU will have authority to restrict flow to its wholesale water customers through the rate-of-flow controllers.

Pro rata water allocations, determined as a percentage reduction of the wholesale customer's water usage, will be established by the Director of the Water Department at the time of implementation. The total volume reduction for each wholesale customer will be calculated on a monthly basis, based on average water usage for the previous three years. The Director of the Water Department will establish the percentage reduction based on an assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries, and the percentage reduction may be adjusted periodically by the Director of the Water Department. Once pro rata allocation is in effect, water diversions by or deliveries to each wholesale water customer will be limited to the allocation established for each month.

Section X: Enforcement

No person shall knowingly or intentionally allow the use of water from the City of Dallas for residential, commercial, industrial, agricultural, governmental, or any other purposes in a manner contrary to any provision of this Plan, or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by the Director of the Water Department, or his/her designee, in accordance with provisions of this Plan.

Fines and Fees:

Any person who violates this Plan is guilty of a misdemeanor and, upon conviction, shall be punished by a fine of not less than $250 and not more than $2,000. Violations of this Plan may also be enforced as an administrative offense using the alternative administrative adjudication procedure set forth in the City of Dallas Code of Ordinances, as amended. Each day that one or more of the provisions in this Plan is violated shall constitute a separate offense. If a person is convicted of two or more distinct violations of this Plan, upon due notice to the customer, DWU may: (1) install a flow restrictor in the line to limit the amount of water that will pass through the meter in a 24-hour period; or (2) discontinue water served to the premises. Services discontinued under such circumstances shall be restored only upon payment of a re-connection charge, hereby established at an amount not to exceed $135.00 (or as adjusted by City ordinance), and any other costs incurred by the Dallas Water Utilities in discontinuing service. In addition, suitable assurance must be given to the Director of the Water Department that the same action will not be repeated while the Plan is in effect. Compliance with this Plan may also be sought through injunctive relief in the district court.

Violators:

Any person, including a person classified as a water customer of the Dallas Water Utilities, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children and proof that a violation, committed by a child, occurred on property within the parents' control shall constitute a rebuttable presumption that the parent committed the violation, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this Plan and that the parent could not have reasonably known of the violation.

Enforcement Officers:

Any employee of the Dallas Water Utilities, police officer, or other employee designated by the City Manager, may issue a citation to a person he/she reasonably believes to be in violation of this Ordinance. The citation shall be prepared in duplicate and shall contain the name and address of the alleged violator, if known, the offense charged, and shall direct him/her to appear in the municipal court on the date shown on the citation for which the date shall not be less than 3 days nor more than 15 days from the date the citation was issued. The alleged violator shall be served a copy of the citation. Service of the citation shall be complete upon delivery of the citation to the alleged violator, to an agent or employee of a violator, or to a person over 14 years of age who is a member of the violator's immediate family or is a resident of the violator's residence. The alleged violator shall appear in municipal court to enter a plea of guilty or not guilty for the violation of this Plan. If the alleged violator fails to appear in municipal court, a warrant for his/her arrest may be issued. A summons to appear may be issued in lieu of an arrest warrant. These cases shall be expedited and given preferential setting in municipal court before all other cases.

Section XI: Variances

The Director of the Water Department, or the Director of the Water Department's designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this Plan if it is

determined that failure to grant such variance would cause an emergency condition adversely affecting the health, safety or welfare for the public or the person requesting such variance and if all of the following conditions are met:

- Granting of a variance must not cause an immediate significant reduction in the city's water supply.
- The health, safety, or welfare of other persons will not be adversely affected by granting of the variance.
- The applicant must demonstrate that the extreme hardship or need is related to the health, safety, or welfare of the person requesting it.
- Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
- Alternative methods can be implemented which will achieve the same level of reduction in water use.
- All variances are only in effect during the Drought Plan Stage for which the variance was issued.

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the Director of the Water Department. All petitions for variances shall be reviewed by the Director of the Water Department, or the Director of the Water Department's designee, and shall include the following:

- Name and address of the petitioner(s).
- Purpose of water use.
- Specific provision(s) of the Plan from which the petitioner is requesting relief.
- Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Plan.
- Description of the relief requested.
- Period of time for which the variance is sought.
- Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
- Other pertinent information.

Variances granted by the City of Dallas shall be subject to the following conditions, unless waived or modified by the City of Dallas or its designee:

- Variances granted shall include a timetable for compliance.
- Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

- The Director of the Water Department may revoke a variance granted when the Director of the Water Department determines that the conditions are not being met or are no longer applicable.

Section XII: Wholesale Water Contracts

Every wholesale water contract, (treated and untreated water) entered into or renewed after the adoption of this Plan, including any contract extensions, will contain language notifying parties to the contract, that in a case of shortage of water resulting from a drought, the water to be distributed shall be divided in accordance with Texas Water Code Section 11.039.

Section XIII: Severability

It is hereby declared to be the intention of the City of Dallas that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, since the same would have been enacted by the City of Dallas without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

Section XIV: Review and Update of the Drought Contingency Plan

DWU will review and update the Plan consistent with State law requirements. If the plan is implemented during a water shortage, data obtained during the plan implementation will be used to make any necessary modifications to the plan. Additionally, the plan will be updated as appropriate based on new or updated information regarding the system's delivery capacity.

APPENDIX A
Documentation of Adoption of the Drought Contingency Plan by the City of Dallas City Council

190608

April 24, 2019

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) requires municipal and wholesale water suppliers to submit an updated Drought Contingency Plan approved by the City Council every five years; and

WHEREAS, Section 49.20 of the Dallas City Code requires the Director of Dallas Water Utilities to promulgate and submit a Drought Contingency Plan to the City Council for approval; and

WHEREAS, the updates for the Drought Contingency Plan have been completed and meet all of the requirements of the TCEQ.

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. That the 2019 Drought Contingency Plan is hereby approved and adopted.

SECTION 2. That the City Manager is hereby authorized to submit the 2019 Drought Contingency Plan to the TCEQ as required by state law.

SECTION 3. That the City Manager is hereby authorized to undertake the necessary actions to implement the adopted 2019 Drought Contingency Plan.

SECTION 4. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL

APR 24 2019

CITY SECRETARY

APPENDIX B
Title 30 Chapter 288, Subchapter B of the Texas Administrative Code

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.20[1]	Drought Contingency Plans for Municipal Uses by Public Water Suppliers

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

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

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

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

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

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

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

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

(ii) water production or distribution system limitations;

(iii) supply source contamination; or

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1 http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=288&rl=20; **Source Note:** The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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

(F) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

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

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

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

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

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

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

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

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

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

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

Texas Administrative Code

Next Rule>>

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.21[2]	Drought Contingency Plans for Irrigation Use

(a) A drought contingency plan for an irrigation use, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans for irrigation water suppliers must include policies and procedures for the equitable and efficient allocation of water on a pro rata basis during times of shortage in accordance with Texas Water Code, §11.039. Such plans shall include the following elements as a minimum.

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

(B) The drought contingency plan must document coordination with the regional water planning groups to ensure consistency with the appropriate approved regional water plans.

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

(D) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

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

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

[2]http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=288&rl=20; **Source Note:** The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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

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

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

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

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

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

Texas Administrative Code

Next Rule>>

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.22[3]	Drought Contingency Plans for Wholesale Water Suppliers

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

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

(2) The drought contingency plan must document coordination with the regional water planning groups for the service area of the wholesale public water supplier to ensure consistency with the appropriate approved regional water plans.

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

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

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

(6) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this paragraph are not enforceable.

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

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3 http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=288&rl=22; **Source Note:** The provisions of this §288.22 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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

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

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

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

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

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

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

APPENDIX C
Transmittal Letter to the Regional Planning Group

dallas water utilities
city of dallas

Mr. Kevin Ward, Chair
Region C Water Planning Group
c/o Trinity River Authority
P.O. Box 60
Arlington, TX 76004

Dear Mr. Ward:

In accordance with Texas Administrative Code, Title 30, Chapter 288, the City of Dallas respectfully submits the attached Water Conservation and Drought Contingency Plans as required. The plans were approved by the Dallas City Council on April 24, 2019 and will be summited to the Texas Commission on Environmental Quality.

Please let me know if you have any questions regarding the attached plans.

Sincerely,

Terry Lowery
Director
City of Dallas Water Utilities

Attachments

1500 Marilla, 4AN, Dallas, Texas 75201
Telephone: (214) 670-3146 • Fax: (214) 670-3154

APPENDIX D
Dallas City Code, Chapter 49, Water and Wastewater Section 49-20, Emergency Authority

SEC. 49-20. EMERGENCY AUTHORITY[4].

(a) Purpose and scope. The purpose of this section is to establish the city's policy in the event of shortages or delivery limitations in the city's water supply. This section applies to:

(1) all persons and premises within the city using water from the water system;

(2) all retail customers who live in unincorporated areas within the city's extraterritorial jurisdiction and are served by the water system; and

(3) all wholesale service customers outside the city to the extent provided in Subsection (i).

(b) Emergency water management plan. The director shall promulgate and submit an emergency water management plan to the city council for approval, the guidelines of which should include:

(1) the conditions under which a particular stage of emergency will be implemented or terminated; and

(2) provisions defining specific events that will trigger an emergency.

(c) Authority. The city manager is authorized to implement measures prescribed when required by this section and by the emergency water management plan approved by the city council. The director is authorized to enforce the measures implemented and to promulgate regulations, not in conflict with this section or state and federal laws, in aid of enforcement.

(d) Implementation of emergency order. The director, upon determination that the conditions of a water emergency exist, shall advise the city manager. The city manager may order that the appropriate stage of emergency response, as detailed in the emergency water management plan, be implemented. To be effective, the order must be:

(1) made by public announcement; and

(2) published in a newspaper of general circulation in the city within 24 hours after the public announcement, which order becomes immediately effective upon publication.

(e) Duration of order; change; extension. The order can be made effective for up to, but not more than, 60 days from the date of publication. Upon recommendation of the director, the city manager may upgrade or downgrade the stage of emergency when the conditions triggering that stage occur. Any change in the order must be made in the same manner prescribed in Subsection (d) for implementing an emergency order. The city council may, upon the recommendation of the city manager and the director, extend the duration of the emergency order for additional time periods, not to exceed 120 days each. The city manager shall terminate the order in the manner prescribed in Subsection (d) for implementing an emergency order when the director determines that the conditions creating the emergency no longer exist.

(f) Violation of section. A person commits an offense if he knowingly makes, causes or permits a use of water contrary to the measures implemented by the city manager as prescribed in the emergency water management plan. For purposes of this subsection, it is presumed that a person has knowingly made, caused or permitted a use of water contrary to the measures implemented if the mandatory measures have been formally ordered consistent with the terms of Subsection (d) and:

(1) the manner of use has been prohibited by the emergency water management plan;

[4]http://library.amlegal.com/nxt/gateway.dll/Texas/dallas/cityofdallastexascodeofordinances?f=templates$fn=default.htm$3.0$vid=amlegal:dallas_tx

(2) the amount of water used exceeds that allowed by the emergency water management plan; or

(3) the manner or amount used violates the terms and conditions of a compliance agreement made pursuant to a variance granted by the director under Subsection (g).

(g) Variances. During the times the emergency order is operative, the director may grant variances in special cases to persons demonstrating extreme hardship and need. The director may grant variances only under the following circumstances and conditions:

(1) the applicant must sign a compliance agreement on forms provided by the director, and approved by the city attorney, agreeing to use the water only in the amount and manner permitted by the variance;

(2) granting of a variance must not cause an immediate significant reduction in the city's water supply;

(3) the extreme hardship or need requiring the variance must relate to the health, safety or welfare of the person requesting it; and

(4) the health, safety and welfare of other persons must not be adversely affected by granting of the variance.

(h) Revocation of variances. The director may revoke a variance granted when he determines that:

(1) the conditions of Subsection (g) are not being met or are no longer applicable;

(2) the terms of the compliance agreement are being violated; or

(3) the health, safety or welfare of other persons requires revocation.

(i) Wholesale service to customers outside the city. The director shall advise customers receiving wholesale water service from the city of actions taken under the emergency water management plan. The director may restrict service to customers outside the city as permitted under the contract and state law.

(j) Authority under other laws. Nothing in this section shall be construed to limit the authority of the mayor, the city council or the city manager to seek emergency relief under the provisions of any state or federal disaster relief act. (Ord. 19201)

APPENDIX E
Dallas City Code, Chapter 49, Water and Wastewater
Section 49-21.1, Conservation Measures Relating to Lawn & Landscape Irrigation

SEC. 49-21.1[5]. CONSERVATION MEASURES RELATING TO LAWN AND LANDSCAPE IRRIGATION.

(a) Purpose. Lawn and landscape irrigation practices within the city, especially during the summer months, can cause a waste of valuable water resources. The purpose of this section is to mandate that water be used for lawn and landscape irrigation in a manner that prevents waste, conserves water resources for their most beneficial and vital uses and protects the public health.

(b) Lawn and landscape irrigation restrictions.

(1) A person commits an offense if, during the period from April 1 through October 31 of any year and between the hours of 10:00 a.m. and 6:00 p.m. on any day during that period, the person irrigates, waters, or causes or permits the irrigation or watering of any lawn or landscape located on premises owned, leased, or managed by the person. It is a defense to prosecution under this paragraph that the person was only using water from a source other the city's water or wastewater system.

(2) A person commits an offense if, at any time during the year, the person irrigates, waters, or causes or permits the irrigation or watering of any lawn or landscape located on premises owned, leased, or managed by the person with a hose-end sprinkler or automatic irrigation system on a day other than a designated outdoor water use day for the property address. It is a defense to prosecution under this paragraph that the person was:

(A) using a hand-held hose, drip irrigation device, soaker hose, or hand-held bucket;

(B) irrigating during the repair or testing of a new or existing automatic irrigation system;

(C) irrigating nursery stock at a commercial plant nursery; or

(D) only using water from a source other than the city's water or wastewater system.

(3) A person commits an offense if the person knowingly or recklessly irrigates, waters, or causes or permits the irrigation or watering of a lawn or landscape located on premises owned, leased, or managed by the person in a manner that causes:

(A) a substantial amount of water to fall upon impervious areas instead of upon the lawn or landscape, such that a constant stream of water overflows from the lawn or landscape onto a street or other drainage area; or

(B) an automatic irrigation system or other lawn or landscape watering device to operate during any form of precipitation.

(4) A person commits an offense if, on premises owned, leased, or managed by the person, the person operates a lawn or landscape automatic irrigation system or device that:

(A) has any broken or missing sprinkler head; or

(B) has not been properly maintained in a manner that prevents the waste of water.

(c) Rain and freeze sensing devices.

[5]http://library.amlegal.com/nxt/gateway.dll/Texas/dallas/cityofdallastexascodeofordinances?f=templates$fn=default.htm$3.0$vid=amlegal:dallas_tx

(1) Any automatic irrigation system installed or operated within the city must be equipped with a working rain and freeze sensing device.

(2) A person commits an offense if, on premises owned, leased, or managed by the person, the person:

(A) installs, or causes or permits the installation of, an automatic irrigation system in violation of Subsection (c)(1); or

(B) operates, or causes or permits the operation of, an automatic irrigation system that does not comply with Subsection (c)(1).

(d) Variances. The director may, in special cases, grant variances from the provisions of Subsections (b)(1), (b)(2), or (c) to persons demonstrating extreme hardship and need. The director may grant variances only under all of the following circumstances and conditions:

(1) The applicant must sign a compliance agreement on forms provided by the director, and approved by the city attorney, agreeing to irrigate or water a lawn or landscape only in the amount and manner permitted by the variance.

(2) Granting of a variance must not cause an immediate significant reduction in the city's water supply.

(3) The extreme hardship or need requiring the variance must relate to the health, safety, or welfare of the person requesting it.

(4) The health, safety, and welfare of other persons must not be adversely affected by granting the variance.

(e) Revocation of variances. The director may revoke a variance granted when the director determines that:

(1) the conditions of Subsection (d) are not being met or are no longer applicable;

(2) the terms of the compliance agreement are being violated; or

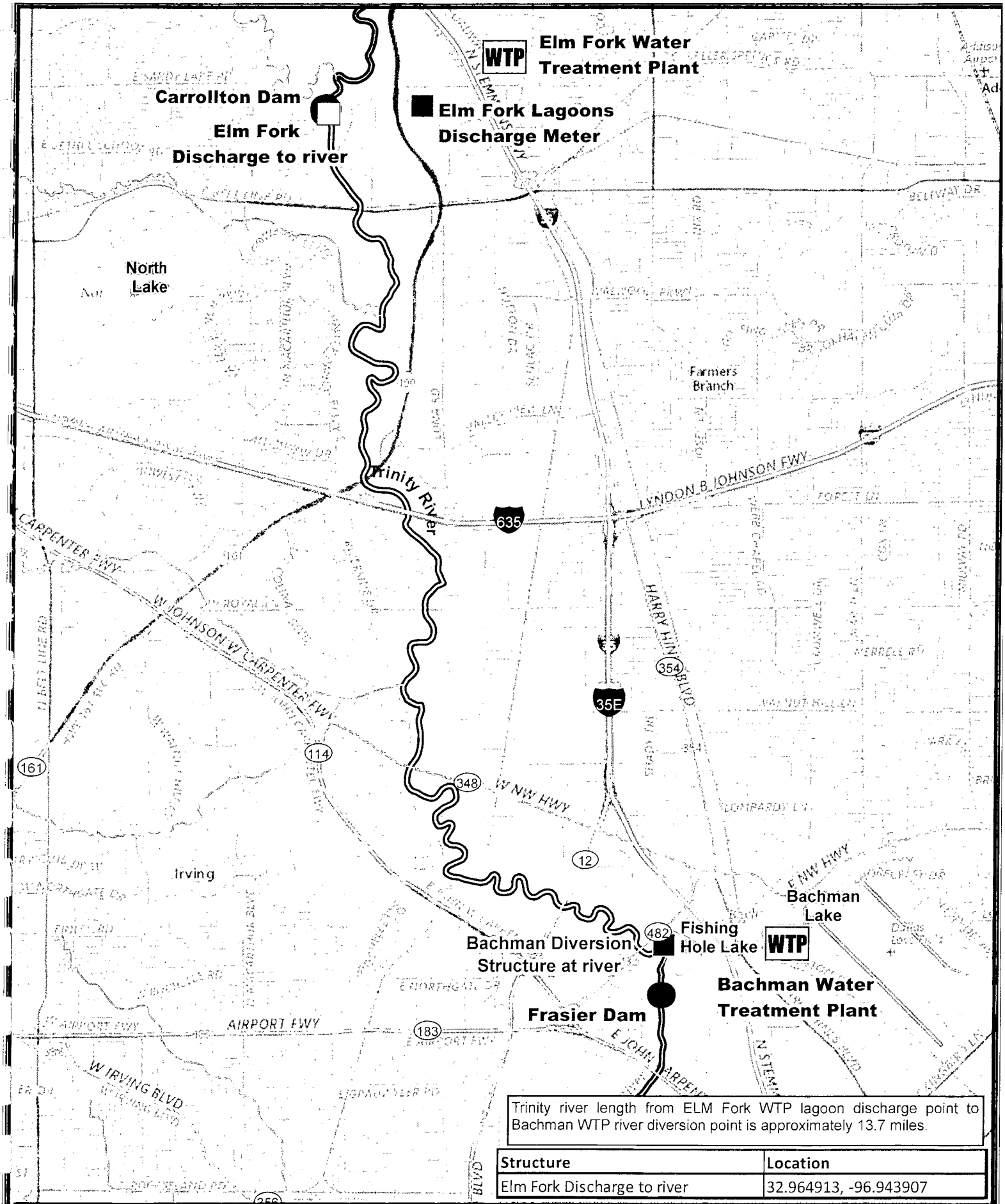
(3) the health, safety, or welfare of other persons requires revocation. (Ord. Nos. 24745; 26518; 28622)

Worksheet 7.0

Accounting Plan

WORKSHEET 7.0 (Conti.)

Accounting Plan
7.0 (1) Map - Discharge Point to Diversion Point



Trinity river length from ELM Fork WTP lagoon discharge point to Bachman WTP river diversion point is approximately 13.7 miles.

Structure	Location
Elm Fork Discharge to river	32.964913, -96.943907

Watershed	Area in Square Mile
Frasier	2557

0 0.5 1 2 3 4 Miles

N W E S

City of Dallas
Water Utilities Automation & Integration

Elm Fork WTP Discharge to Bachman WTP

Date: 9/19/2019

Worksheet 7.0 (Conti)

Accounting Plan

7.0(2) Estimation of Channel Loss

Memorandum

CITY OF DALLAS

DATE August 27, 2019

TO File

SUBJECT **Estimated Channel Losses from Elm Fork Water Treatment Plant to Bachman Water Treatment Plant**

Dallas Water Utilities is applying for a water use permit for the reuse of the discharges authorized in Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0010060005. The water use permit will also request authorization for the bed and banks from Dallas' Elm Fork Water Treatment Plant (WTP) return flows discharge downstream at Dallas's Bachman WTP intake.

TPDES Permit No. WQ0010060005 authorizes Dallas to treat and discharge an average of 5 MGD of Elm Fork WTP return flow discharges to the Elm Fork Trinity River in segment No.0822 of the Trinity River Basin. The return flow comes through a 54-inch pipe to a disposal lagoon. The effluent is then conveyed from the disposal lagoon through a 36-inch discharge pipe to the Elm Fork Trinity River.

Dallas' Elm Fork WTP is located along the Elm Fork of the Trinity River, approximately 13.7 miles upstream of Dallas Bachman WTP (Attachment A)

As described in the HDR Memo dated March 14, 2001 (Attachment B) the carriage loss calculation utilized the USGS gage records on Denton Creek, a tributary of the Elm Fork of the Trinity River, and the Elm Fork of the River above Carrollton Dam (14.7-stream miles), the channel loss above Carrollton Dam amounted to 0.95 percent of the annual average flow. Converting this 0.95 percent channel loss to loss per stream mile for the 14.7-mile stream segment results in (0.95 percent channel loss / 14.7 miles) 0.065 percent channel loss per stream mile.

Applying the percent channel loss to the Elm Fork of the Trinity between the Elm Fork WTP filter backwash and wastes from flocculation and sedimentation basin effluent discharge downstream to Dallas's Bachman WTP intake, the estimated channel loss (0.065 percent loss per stream mile x 13.7 mile) is 0.89 percent.

Denis Qualls, P.E., D.WRE
Senior Program Manager

To: Larry Brown, P.E.

From: Ken Choffel, P.E.

Date: March 14, 2001

HDR Memorandum

Subject: Channel Losses on Return Flows from City of Lewisville and Town of Flower Mound

This memorandum summarizes our analyses concerning the determination of a reasonable estimate of channel losses for return flows discharged by the City of Lewisville and the Town of Flower Mound. Return flows for Lewisville are discharged into Prairie Creek, a tributary of the Elm Fork of the Trinity River, at a location just downstream of Lewisville Lake (refer to Figure 1). Return flows for Flower Mound are discharged into Bakers Branch a tributary of Denton Creek, at a location about 2 miles northeast of Grapevine Lake Dam. Under Dallas' proposed permit amendment, return flows from both of these cities would flow downstream and be diverted by Dallas at either of their two Water Treatment Plants (i.e., Dallas' Elm Fork Water Treatment Plant located near Carrollton Dam and/or Dallas' Bachman Water Treatment Plant located near Frasier Dam as shown in Figure 1).

Our analyses rely on a report entitled "A Report on Investigation of Elm Fork of the Trinity River Channel Loss or Gain" prepared for Dallas by Mr. Isom H. Hale for Forrest and Cotton, Consulting Engineers. This report was prepared in the late 1950s in connection with the City of Dallas' Long-Range Water Supply Study. The report concludes that the stream segments of interest are normally gaining streams. However, the report also shows there are periods of time when losses do occur. The report considers two methods for the determination of channel losses. Under Method 1 (Evaporation Method), the report computes combined evaporation losses from the following stream segments at less than 700 acft/yr.

Elm Fork, Bachman intakes to Carrollton Dam	-	14.1 river miles
Elm Fork, Carrollton Dam to Garza-Little Elm Dam	-	11.9 river miles
Denton Creek, Elm Fork confluence to Grapevine Dam	-	11.7 river miles
Total	-	37.7 river miles

The report also shows that using a second method (Method 2), that losses occurred about 11 percent of the time during a 4.58 year time frame (March 1949-September 1953). On the basis of this second method, which utilized USGS gage records on both Denton Creek and the Elm Fork above Carrolton (14.7 stream miles), channel losses during the 4.58 year period averaged about 500 acft/yr or 0.12 percent of the average annual flow of the two streams. During the year with the highest loss rate (i.e., October 1951-September 1952), channel losses above Carrollton amounted to less than 1,300 acft or about 0.95 percent of the average annual flow of the two streams. Considering a combined stream length of 14.7 miles, this results in a loss rate of 0.065 percent per mile. Extending this loss rate to include the additional stream segments between the upstream gages and the discharge points (a total of 18.4 miles) results in a total loss of 1.2 percent between the discharge locations and Carrollton.

We recommend a conservative loss factor of 2.0 percent be used for either discharge location when the water is diverted near Carrollton Dam (i.e., Dallas Elm Fork Water Treatment Plant). Considering the Frasier Dam diversion location (which includes a total stream length of 32.5 miles) we recommend a loss factor of 3.0 percent be used for either discharge location.

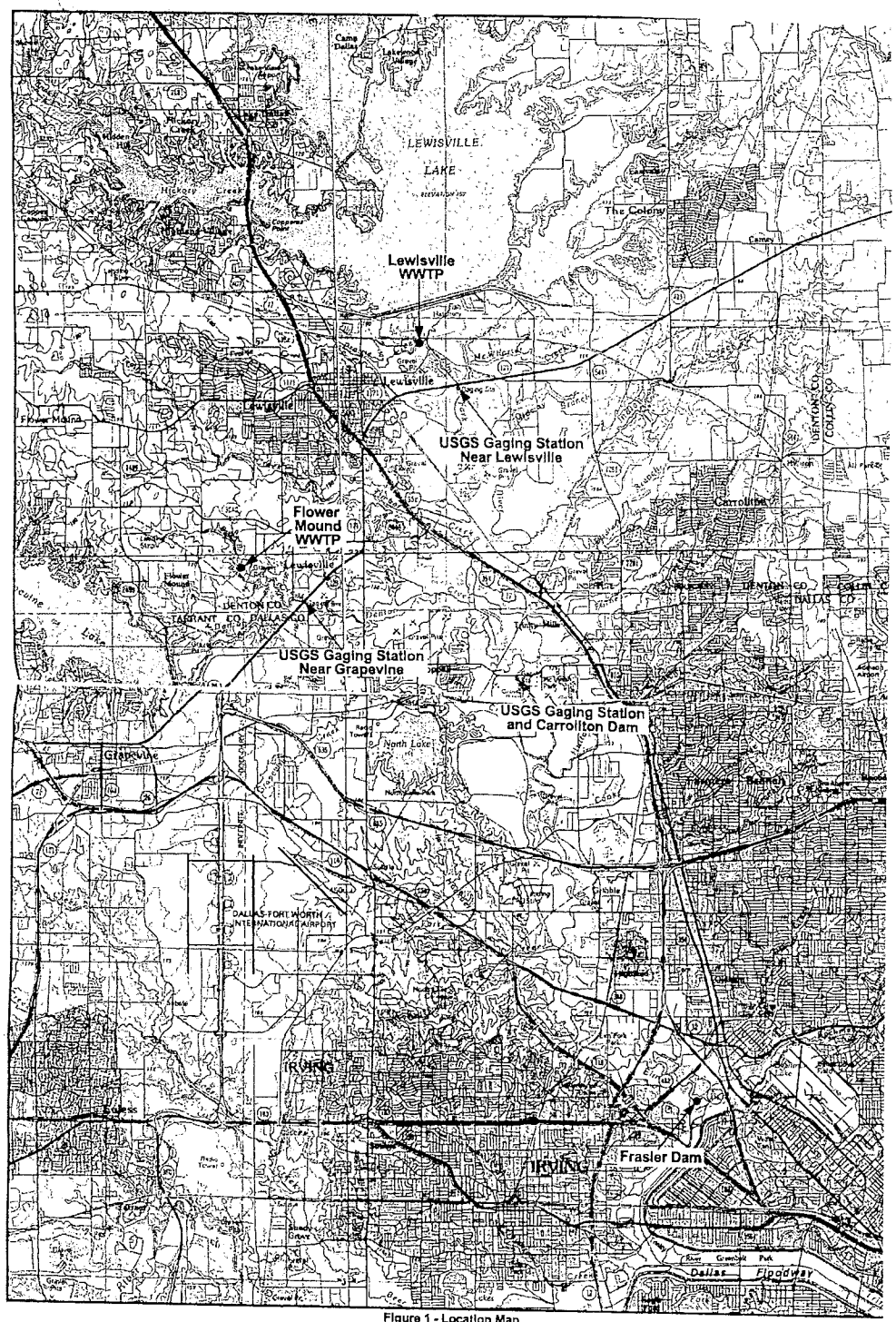


Figure 1 - Location Map
Dallas Water Utilities

Scale - 1:100,000
0 1 2 Miles

HDR
HDR Engineering, Inc

Worksheet 7.0 (Conti)

Accounting Plan
7.0 (3) An electronic version of the Accounting Plan spreadsheet and supporting narrative is attached to this application for TCEQ review.

INDIRECT WATER REUSE ACCOUNTING PLAN

CITY OF DALLAS ELM FROK WTP RETURN FLOW ACCOUNTING PLAN

1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
Year	Month	Day	MG	MG	MG	MG	MG
			City of Dallas Elm Fork WTP Return Flow Discharge	Elm Fork WTP Return Flow Discharge Carriage Losses	Net Elm Fork WTP Return Flow Discharge Carriage Losses	Bachman WTP Diversion	Elm Fork WWTP Effluent Diverted at Bachman Plant
			Effluent Input	Col (1.4*0.0089)	Col(1.4-1.5)	Bachman WTP Daily Diversion (Input)	Bachman Effluent Reuse
2018	JAN	1	1.00	0.01	0.99	61.17	0.99
2018	JAN	2	2.00	0.02	1.98	87.2	1.98
2018	JAN	3	1.00	0.01	0.99	99.45	0.99
2018	JAN	4	4.00	0.04	3.96	90.14	3.96
2018	JAN	5	1.00	0.01	0.99	81.33	0.99
2018	JAN	6	1.00	0.01	0.99	85.24	0.99
2018	JAN	7	5.00	0.04	4.96	79.86	4.96
2018	JAN	8	1.00	0.01	0.99	112.67	0.99
2018	JAN	9	3.00	0.03	2.97	137.63	2.97
2018	JAN	10	1.00	0.01	0.99	122.49	0.99
2018	JAN	11	5.00	0.04	4.96	104.42	4.96
2018	JAN	12	1.00	0.01	0.99	87.47	0.99
2018	JAN	13	1.00	0.01	0.99	64.82	0.99
2018	JAN	14	1.00	0.01	0.99	64.29	0.99
2018	JAN	15	1.00	0.01	0.99	66.77	0.99
2018	JAN	16	1.00	0.01	0.99	0	0.00
2018	JAN	17	1.00	0.01	0.99	0	0.00
2018	JAN	18	1.00	0.01	0.99	0	0.00
2018	JAN	19	1.00	0.01	0.99	0	0.00
2018	JAN	20	1.00	0.01	0.99	0	0.00
2018	JAN	21	1.00	0.01	0.99	0	0.00
2018	JAN	22	1.00	0.01	0.99	127.28	0.99
2018	JAN	23	1.00	0.01	0.99	127.5	0.99
2018	JAN	24	1.00	0.01	0.99	124.25	0.99
2018	JAN	25	1.00	0.01	0.99	85.83	0.99
2018	JAN	26	1.00	0.01	0.99	65.46	0.99
2018	JAN	27	1.00	0.01	0.99	64.95	0.99
2018	JAN	28	1.00	0.01	0.99	64.49	0.99
2018	JAN	29	1.00	0.01	0.99	95.69	0.99
2018	JAN	30	1.00	0.01	0.99	118.48	0.99
2018	JAN	31	1.00	0.01	0.99	136.12	0.99
2018	FEB	1	1.00	0.01	0.99	138.07	0.99
2018	FEB	2	1.00	0.01	0.99	89.64	0.99

2018	FEB	3	1.00	0.01	0.99	107.32	0.99
2018	FEB	4	1.00	0.01	0.99	112.95	0.99
2018	FEB	5	1.00	0.01	0.99	111.37	0.99
2018	FEB	6	1.00	0.01	0.99	102.53	0.99
2018	FEB	7	1.00	0.01	0.99	102.67	0.99
2018	FEB	8	1.00	0.01	0.99	111.8	0.99
2018	FEB	9	1.00	0.01	0.99	116.4	0.99
2018	FEB	10	1.00	0.01	0.99	102.47	0.99
2018	FEB	11	1.00	0.01	0.99	116.37	0.99
2018	FEB	12	1.00	0.01	0.99	121.83	0.99
2018	FEB	13	1.00	0.01	0.99	132.46	0.99
2018	FEB	14	1.00	0.01	0.99	132.4	0.99
2018	FEB	15	1.00	0.01	0.99	134.75	0.99
2018	FEB	16	1.00	0.01	0.99	134.53	0.99
2018	FEB	17	1.00	0.01	0.99	114.01	0.99
2018	FEB	18	1.00	0.01	0.99	115.63	0.99
2018	FEB	19	1.00	0.01	0.99	130.13	0.99
2018	FEB	20	1.00	0.01	0.99	124.7	0.99
2018	FEB	21	1.00	0.01	0.99	124.35	0.99
2018	FEB	22	1.00	0.01	0.99	129.87	0.99
2018	FEB	23	1.00	0.01	0.99	133.61	0.99
2018	FEB	24	1.00	0.01	0.99	133.71	0.99
2018	FEB	25	1.00	0.01	0.99	133.35	0.99
2018	FEB	26	1.00	0.01	0.99	131.06	0.99
2018	FEB	27	1.00	0.01	0.99	130.93	0.99
2018	FEB	28	1.00	0.01	0.99	130.77	0.99
2018	FEB	29					
2018	MAR	1	1.00	0.01	0.99	96.62	0.99
2018	MAR	2	1.00	0.01	0.99	96.44	0.99
2018	MAR	3	1.00	0.01	0.99	106.44	0.99
2018	MAR	4	1.00	0.01	0.99	127.04	0.99
2018	MAR	5	1.00	0.01	0.99	128.09	0.99
2018	MAR	6	1.00	0.01	0.99	99.48	0.99
2018	MAR	7	1.00	0.01	0.99	86.07	0.99
2018	MAR	8	1.00	0.01	0.99	65.05	0.99
2018	MAR	9	1.00	0.01	0.99	84.04	0.99
2018	MAR	10	1.00	0.01	0.99	96.74	0.99
2018	MAR	11	1.00	0.01	0.99	73.84	0.99
2018	MAR	12	1.00	0.01	0.99	62.24	0.99
2018	MAR	13	1.00	0.01	0.99	62.36	0.99
2018	MAR	14	1.00	0.01	0.99	62.41	0.99
2018	MAR	15	1.00	0.01	0.99	62.25	0.99
2018	MAR	16	1.00	0.01	0.99	62.06	0.99
2018	MAR	17	1.00	0.01	0.99	62.28	0.99
2018	MAR	18	1.00	0.01	0.99	57.32	0.99
2018	MAR	19	1.00	0.01	0.99	58.03	0.99
2018	MAR	20	1.00	0.01	0.99	77.79	0.99

2018	MAR	21	1.00	0.01	0.99	61.3	0.99
2018	MAR	22	1.00	0.01	0.99	61.51	0.99
2018	MAR	23	1.00	0.01	0.99	64.72	0.99
2018	MAR	24	1.00	0.01	0.99	81.65	0.99
2018	MAR	25	1.00	0.01	0.99	72.06	0.99
2018	MAR	26	1.00	0.01	0.99	81.35	0.99
2018	MAR	27	1.00	0.01	0.99	63.79	0.99
2018	MAR	28	1.00	0.01	0.99	60.68	0.99
2018	MAR	29	1.00	0.01	0.99	61.44	0.99
2018	MAR	30	1.00	0.01	0.99	61.51	0.99
2018	MAR	31	1.00	0.01	0.99	76.87	0.99
2018	Apr	1	1.00	0.01	0.99	66.3	0.99
2018	Apr	2	1.00	0.01	0.99	71.42	0.99
2018	Apr	3	1.00	0.01	0.99	61.09	0.99
2018	Apr	4	1.00	0.01	0.99	61.31	0.99
2018	Apr	5	1.00	0.01	0.99	61.18	0.99
2018	Apr	6	1.00	0.01	0.99	61.5	0.99
2018	Apr	7	1.00	0.01	0.99	61.6	0.99
2018	Apr	8	1.00	0.01	0.99	66.48	0.99
2018	Apr	9	1.00	0.01	0.99	61.22	0.99
2018	Apr	10	1.00	0.01	0.99	69.92	0.99
2018	Apr	11	1.00	0.01	0.99	75.33	0.99
2018	Apr	12	1.00	0.01	0.99	61.07	0.99
2018	Apr	13	1.00	0.01	0.99	60.85	0.99
2018	Apr	14	1.00	0.01	0.99	61.33	0.99
2018	Apr	15	1.00	0.01	0.99	61.17	0.99
2018	Apr	16	1.00	0.01	0.99	91.55	0.99
2018	Apr	17	1.00	0.01	0.99	100.09	0.99
2018	Apr	18	1.00	0.01	0.99	61.4	0.99
2018	Apr	19	1.00	0.01	0.99	61.14	0.99
2018	Apr	20	1.00	0.01	0.99	61.37	0.99
2018	Apr	21	1.00	0.01	0.99	51.62	0.99
2018	Apr	22	1.00	0.01	0.99	50.85	0.99
2018	Apr	23	1.00	0.01	0.99	50.53	0.99
2018	Apr	24	1.00	0.01	0.99	50.96	0.99
2018	Apr	25	1.00	0.01	0.99	51.31	0.99
2018	Apr	26	1.00	0.01	0.99	51.43	0.99
2018	Apr	27	1.00	0.01	0.99	60.17	0.99
2018	Apr	28	1.00	0.01	0.99	80.93	0.99
2018	Apr	29	1.00	0.01	0.99	80.51	0.99
2018	Apr	30	1.00	0.01	0.99	72.35	0.99
2018	May	1	1.00	0.01	0.99	70.06	0.99
2018	May	2	1.00	0.01	0.99	53.68	0.99
2018	May	3	1.00	0.01	0.99	49.03	0.99
2018	May	4	1.00	0.01	0.99	45.27	0.99
2018	May	5	1.00	0.01	0.99	62.32	0.99
2018	May	6	1.00	0.01	0.99	100.58	0.99

2018	May	7	1.00	0.01	0.99	100.73	0.99
2018	May	8	1.00	0.01	0.99	100.45	0.99
2018	May	9	1.00	0.01	0.99	100.23	0.99
2018	May	10	1.00	0.01	0.99	100.4	0.99
2018	May	11	1.00	0.01	0.99	100.95	0.99
2018	May	12	1.00	0.01	0.99	126.98	0.99
2018	May	13	1.00	0.01	0.99	127.35	0.99
2018	May	14	1.00	0.01	0.99	100.87	0.99
2018	May	15	1.00	0.01	0.99	119.62	0.99
2018	May	16	1.00	0.01	0.99	105.94	0.99
2018	May	17	1.00	0.01	0.99	82.68	0.99
2018	May	18	1.00	0.01	0.99	110.09	0.99
2018	May	19	1.00	0.01	0.99	99.56	0.99
2018	May	20	1.00	0.01	0.99	77.85	0.99
2018	May	21	1.00	0.01	0.99	124.56	0.99
2018	May	22	1.00	0.01	0.99	116.44	0.99
2018	May	23	1.00	0.01	0.99	100.79	0.99
2018	May	24	1.00	0.01	0.99	90.11	0.99
2018	May	25	1.00	0.01	0.99	81.46	0.99
2018	May	26	1.00	0.01	0.99	88.54	0.99
2018	May	27	1.00	0.01	0.99	89.99	0.99
2018	May	28	1.00	0.01	0.99	77.27	0.99
2018	May	29	1.00	0.01	0.99	79.3	0.99
2018	May	30	1.00	0.01	0.99	120.5	0.99
2018	May	31	1.00	0.01	0.99	101.38	0.99
2018	Jun	1	1.00	0.01	0.99	125.26	0.99
2018	Jun	2	1.00	0.01	0.99	110.57	0.99
2018	Jun	3	1.00	0.01	0.99	75.18	0.99
2018	Jun	4	1.00	0.01	0.99	67.17	0.99
2018	Jun	5	1.00	0.01	0.99	75.17	0.99
2018	Jun	6	1.00	0.01	0.99	75.26	0.99
2018	Jun	7	1.00	0.01	0.99	64.16	0.99
2018	Jun	8	1.00	0.01	0.99	88.69	0.99
2018	Jun	9	1.00	0.01	0.99	99.11	0.99
2018	Jun	10	1.00	0.01	0.99	74.91	0.99
2018	Jun	11	1.00	0.01	0.99	87.38	0.99
2018	Jun	12	1.00	0.01	0.99	101.44	0.99
2018	Jun	13	1.00	0.01	0.99	100.76	0.99
2018	Jun	14	1.00	0.01	0.99	104.67	0.99
2018	Jun	15	1.00	0.01	0.99	100.04	0.99
2018	Jun	16	1.00	0.01	0.99	100.11	0.99
2018	Jun	17	1.00	0.01	0.99	129.48	0.99
2018	Jun	18	1.00	0.01	0.99	112.28	0.99
2018	Jun	19	1.00	0.01	0.99	100.98	0.99
2018	Jun	20	1.00	0.01	0.99	101.25	0.99
2018	Jun	21	1.00	0.01	0.99	101.11	0.99
2018	Jun	22	1.00	0.01	0.99	100.53	0.99

2018	Jun	23	1.00	0.01	0.99	79.77	0.99
2018	Jun	24	1.00	0.01	0.99	90.77	0.99
2018	Jun	25	1.00	0.01	0.99	75.76	0.99
2018	Jun	26	1.00	0.01	0.99	134.28	0.99
2018	Jun	27	1.00	0.01	0.99	146.48	0.99
2018	Jun	28	1.00	0.01	0.99	135.82	0.99
2018	Jun	29	1.00	0.01	0.99	125.07	0.99
2018	Jun	30	1.00	0.01	0.99	137.53	0.99
2018	July	1	1.00	0.01	0.99	121.34	0.99
2018	July	2	1.00	0.01	0.99	127.51	0.99
2018	July	3	1.00	0.01	0.99	147.15	0.99
2018	July	4	1.00	0.01	0.99	120.85	0.99
2018	July	5	1.00	0.01	0.99	110.57	0.99
2018	July	6	1.00	0.01	0.99	120.01	0.99
2018	July	7	1.00	0.01	0.99	107.32	0.99
2018	July	8	1.00	0.01	0.99	81.02	0.99
2018	July	9	1.00	0.01	0.99	81.16	0.99
2018	July	10	1.00	0.01	0.99	80.5	0.99
2018	July	11	1.00	0.01	0.99	75.92	0.99
2018	July	12	1.00	0.01	0.99	66.21	0.99
2018	July	13	1.00	0.01	0.99	87.22	0.99
2018	July	14	1.00	0.01	0.99	100.13	0.99
2018	July	15	1.00	0.01	0.99	102.94	0.99
2018	July	16	1.00	0.01	0.99	120.89	0.99
2018	July	17	1.00	0.01	0.99	120.6	0.99
2018	July	18	1.00	0.01	0.99	109.72	0.99
2018	July	19	1.00	0.01	0.99	84.35	0.99
2018	July	20	1.00	0.01	0.99	97.7	0.99
2018	July	21	1.00	0.01	0.99	92.08	0.99
2018	July	22	1.00	0.01	0.99	81.19	0.99
2018	July	23	1.00	0.01	0.99	88.99	0.99
2018	July	24	1.00	0.01	0.99	114.07	0.99
2018	July	25	1.00	0.01	0.99	113.64	0.99
2018	July	26	1.00	0.01	0.99	101.61	0.99
2018	July	27	1.00	0.01	0.99	103.38	0.99
2018	July	28	1.00	0.01	0.99	120.53	0.99
2018	July	29	1.00	0.01	0.99	101.52	0.99
2018	July	30	1.00	0.01	0.99	100.88	0.99
2018	July	31	1.00	0.01	0.99	110.86	0.99
2018	Aug	1	1.00	0.01	0.99	100.75	0.99
2018	Aug	2	1.00	0.01	0.99	100.62	0.99
2018	Aug	3	1.00	0.01	0.99	90.89	0.99
2018	Aug	4	1.00	0.01	0.99	101.25	0.99
2084	Aug	5	1.00	0.01	0.99	101.46	0.99
2085	Aug	6	1.00	0.01	0.99	100.65	0.99
2086	Aug	7	1.00	0.01	0.99	100.75	0.99
2087	Aug	8	1.00	0.01	0.99	100.32	0.99

2088	Aug	9	1.00	0.01	0.99	101.09	0.99
2089	Aug	10	1.00	0.01	0.99	101.76	0.99
2090	Aug	11	1.00	0.01	0.99	80.75	0.99
2091	Aug	12	1.00	0.01	0.99	93.11	0.99
2092	Aug	13	1.00	0.01	0.99	104.33	0.99
2093	Aug	14	1.00	0.01	0.99	120.15	0.99
2094	Aug	15	1.00	0.01	0.99	87.62	0.99
2095	Aug	16	1.00	0.01	0.99	97.71	0.99
2096	Aug	17	1.00	0.01	0.99	95.27	0.99
2097	Aug	18	1.00	0.01	0.99	77.63	0.99
2098	Aug	19	1.00	0.01	0.99	60.33	0.99
2018	Aug	20	1.00	0.01	0.99	90.59	0.99
2018	Aug	21	1.00	0.01	0.99	119.7	0.99
2018	Aug	22	1.00	0.01	0.99	101.96	0.99
2018	Aug	23	1.00	0.01	0.99	91.14	0.99
2018	Aug	24	1.00	0.01	0.99	79.86	0.99
2018	Aug	25	1.00	0.01	0.99	102.77	0.99
2018	Aug	26	1.00	0.01	0.99	101.59	0.99
2018	Aug	27	1.00	0.01	0.99	94.38	0.99
2018	Aug	28	1.00	0.01	0.99	111.49	0.99
2018	Aug	29	1.00	0.01	0.99	113.34	0.99
2018	Aug	30	1.00	0.01	0.99	86.75	0.99
2018	Aug	31	1.00	0.01	0.99	89.81	0.99
2018	Sept	1	1.00	0.01	0.99	106.68	0.99
2018	Sept	2	1.00	0.01	0.99	81.47	0.99
2018	Sept	3	1.00	0.01	0.99	101.98	0.99
2018	Sept	4	1.00	0.01	0.99	120.49	0.99
2018	Sept	5	1.00	0.01	0.99	102.93	0.99
2018	Sept	6	1.00	0.01	0.99	79.87	0.99
2018	Sept	7	1.00	0.01	0.99	59.83	0.99
2018	Sept	8	1.00	0.01	0.99	60.21	0.99
2018	Sept	9	1.00	0.01	0.99	60.09	0.99
2018	Sept	10	1.00	0.01	0.99	60.96	0.99
2018	Sept	11	1.00	0.01	0.99	60.34	0.99
2018	Sept	12	1.00	0.01	0.99	63.71	0.99
2018	Sept	13	1.00	0.01	0.99	84.8	0.99
2018	Sept	14	1.00	0.01	0.99	79.65	0.99
2018	Sept	15	1.00	0.01	0.99	79.84	0.99
2018	Sept	16	1.00	0.01	0.99	81.52	0.99
2018	Sept	17	1.00	0.01	0.99	114.09	0.99
2018	Sept	18	1.00	0.01	0.99	90.96	0.99
2018	Sept	19	1.00	0.01	0.99	99.89	0.99
2018	Sept	20	1.00	0.01	0.99	75.04	0.99
2018	Sept	21	1.00	0.01	0.99	53.34	0.99
2018	Sept	22	1.00	0.01	0.99	55.02	0.99
2018	Sept	23	1.00	0.01	0.99	78.58	0.99
2018	Sept	24	1.00	0.01	0.99	80.92	0.99

2018	Sept	25	1.00	0.01	0.99	83.29	0.99
2018	Sept	26	1.00	0.01	0.99	67.7	0.99
2018	Sept	27	1.00	0.01	0.99	80.05	0.99
2018	Sept	28	1.00	0.01	0.99	79.84	0.99
2018	Sept	29	1.00	0.01	0.99	80.31	0.99
2018	Sept	30	1.00	0.01	0.99	81.04	0.99
2018	Oct	1	1.00	0.01	0.99	80.85	0.99
2018	Oct	2	1.00	0.01	0.99	83.93	0.99
2018	Oct	3	1.00	0.01	0.99	79.78	0.99
2018	Oct	4	1.00	0.01	0.99	80.21	0.99
2018	Oct	5	1.00	0.01	0.99	79.97	0.99
2018	Oct	6	1.00	0.01	0.99	80.3	0.99
2018	Oct	7	1.00	0.01	0.99	74.63	0.99
2018	Oct	8	1.00	0.01	0.99	74.2	0.99
2018	Oct	9	1.00	0.01	0.99	70.05	0.99
2018	Oct	10	1.00	0.01	0.99	75.33	0.99
2018	Oct	11	1.00	0.01	0.99	68.83	0.99
2018	Oct	12	1.00	0.01	0.99	54.09	0.99
2018	Oct	13	1.00	0.01	0.99	49.88	0.99
2018	Oct	14	1.00	0.01	0.99	49.57	0.99
2018	Oct	15	1.00	0.01	0.99	49.82	0.99
2018	Oct	16	1.00	0.01	0.99	49.55	0.99
2018	Oct	17	1.00	0.01	0.99	49.5	0.99
2018	Oct	18	1.00	0.01	0.99	49.52	0.99
2018	Oct	19	1.00	0.01	0.99	24.74	0.99
2018	Oct	20	1.00	0.01	0.99	24.5	0.99
2018	Oct	21	1.00	0.01	0.99	6.88	0.99
2018	Oct	22	1.00	0.01	0.99	0	0.00
2018	Oct	23	1.00	0.01	0.99	0	0.00
2018	Oct	24	1.00	0.01	0.99	0	0.00
2018	Oct	25	1.00	0.01	0.99	0	0.00
2018	Oct	26	1.00	0.01	0.99	0	0.00
2018	Oct	27	1.00	0.01	0.99	0	0.00
2018	Oct	28	1.00	0.01	0.99	0	0.00
2018	Oct	29	1.00	0.01	0.99	0	0.00
2018	Oct	30	1.00	0.01	0.99	0	0.00
2018	Oct	31	1.00	0.01	0.99	0	0.00
2018	Nov	1	1.00	0.01	0.99	0	0.00
2018	NOv	2	1.00	0.01	0.99	0	0.00
2018	Nov	3	1.00	0.01	0.99	0	0.00
2018	Nov	4	1.00	0.01	0.99	0	0.00
2018	Nov	5	1.00	0.01	0.99	0	0.00
2018	Nov	6	1.00	0.01	0.99	0	0.00
2018	Nov	7	1.00	0.01	0.99	0	0.00
2018	Nov	8	1.00	0.01	0.99	0	0.00
2018	Nov	9	1.00	0.01	0.99	0	0.00
2018	Nov	10	1.00	0.01	0.99	0	0.00

2018	Nov	11	1.00	0.01	0.99	0	0.00
2018	Nov	12	1.00	0.01	0.99	0	0.00
2018	Nov	13	1.00	0.01	0.99	0	0.00
2018	Nov	14	1.00	0.01	0.99	0	0.00
2018	Nov	15	1.00	0.01	0.99	0	0.00
2018	Nov	16	1.00	0.01	0.99	0	0.00
2018	Nov	17	1.00	0.01	0.99	0	0.00
2018	Nov	18	1.00	0.01	0.99	31.35	0.99
2018	Nov	19	1.00	0.01	0.99	50.03	0.99
2018	Nov	20	1.00	0.01	0.99	59.94	0.99
2018	Nov	21	1.00	0.01	0.99	49	0.99
2018	Nov	22	1.00	0.01	0.99	46.9	0.99
2018	Nov	23	1.00	0.01	0.99	81.66	0.99
2018	Nov	24	1.00	0.01	0.99	68.82	0.99
2018	Nov	25	1.00	0.01	0.99	61.06	0.99
2018	Nov	26	1.00	0.01	0.99	52.13	0.99
2018	Nov	27	1.00	0.01	0.99	60.68	0.99
2018	Nov	28	1.00	0.01	0.99	60.73	0.99
2018	Nov	29	1.00	0.01	0.99	62.48	0.99
2018	Nov	30	1.00	0.01	0.99	64.05	0.99
2018	Dec	1	1.00	0.01	0.99	61.03	0.99
2018	Dec	2	1.00	0.01	0.99	60.86	0.99
2018	Dec	3	1.00	0.01	0.99	53.06	0.99
2018	Dec	4	1.00	0.01	0.99	59.63	0.99
2018	Dec	5	1.00	0.01	0.99	74.54	0.99
2018	Dec	6	1.00	0.01	0.99	50.29	0.99
2018	Dec	7	1.00	0.01	0.99	75.57	0.99
2018	Dec	8	1.00	0.01	0.99	80.23	0.99
2018	Dec	9	1.00	0.01	0.99	72.93	0.99
2018	Dec	10	1.00	0.01	0.99	58.05	0.99
2018	Dec	11	1.00	0.01	0.99	51.4	0.99
2018	Dec	12	1.00	0.01	0.99	51.41	0.99
2018	Dec	13	1.00	0.01	0.99	51.36	0.99
2018	Dec	14	1.00	0.01	0.99	51.39	0.99
2018	Dec	15	1.00	0.01	0.99	51.34	0.99
2018	Dec	16	1.00	0.01	0.99	51.21	0.99
2018	Dec	17	1.00	0.01	0.99	63.19	0.99
2018	Dec	18	1.00	0.01	0.99	107.91	0.99
2018	Dec	19	1.00	0.01	0.99	73.8	0.99
2018	Dec	20	1.00	0.01	0.99	51	0.99
2018	Dec	21	1.00	0.01	0.99	53.47	0.99
2018	Dec	22	1.00	0.01	0.99	72.39	0.99
2018	Dec	23	1.00	0.01	0.99	60.24	0.99
2018	Dec	24	1.00	0.01	0.99	50.91	0.99
2018	Dec	25	1.00	0.01	0.99	59.95	0.99
2018	Dec	26	1.00	0.01	0.99	51.05	0.99
2018	Dec	27	1.00	0.01	0.99	43.44	0.99

2018	Dec	28	1.00	0.01	0.99	41.45	0.99
2018	Dec	29	1.00	0.01	0.99	49.68	0.99
2018	Dec	30	1.00	0.01	0.99	60.12	0.99
2018	Dec	31	1.00	0.01	0.99	61.12	0.99

Filter Backwash Use - January	38.65
Filter Backwash Use -February	27.75
Filter Backwash Use -March	30.72
Filter Backwash Use -April	29.73
Filter Backwash Use - May	30.72
Filter backwash Use -June	29.73
Filter Backwash Use - July	30.72
Filter Backwash Use -August	30.72
Filter Backwash Use - September	29.73
Filter Backwash Use -October	20.81
Filter Backwash Use - November	12.88
Filter Backwash Use - December	30.72
TOTAL FILTER BACKWASH USE	342.92

CITY OF DALLAS
INDIRECT WATER REUSE ACCOUNTING PLAN SUMMARY

CITY OF DALLAS ELM FORK WTP RETURN FLOW

The City of Dallas Elm Fork Water Treatment Plant (EFWTP) upgrade allows the discharge of return flows from the disposal lagoon cells of the plant to the Elm Fork of the Trinity River of the Trinity River Basin. The bed and banks authorization enables the diversion of the released water the same day at Dallas's Bachman Water Treatment Plant.

Column 1.1,1.2,1.3: These columns represent the year, month, and day when the data was logged.

Column 1.4: EFWTP return flows effluent Discharge (MGD) - EFWTP return flows measured and discharged daily into Elm Fork Trinity River, Segment 822 of the Trinity River Basin.

Column 1.5: EFWTP Return Flows Discharge Carriage losses (MG)
Estimated losses of EFWTP return flows daily discharge of treated effluent in million gallons, occurring while the treated effluent is flowing down the Elm Fork of the Trinity River channel to the Bachman diversion point. The return flow carriage loss is calculated by multiplying effluent discharge in column 1.4 by 0.89% carriage loss.

Column 1.6: Net EFWTP Return Flows Effluent Discharge Available for Bachman WTP Use (MG) - Amount of EFWTP daily return flows of treated effluent, in million gallons available for diversion at the Bachman WTP after carriage losses.

Column 1.7: Bachman WTP Daily Diversion (MG): This column represents Bachman WTP daily diversion and verifies the Bachman WTP operation.

Column 1.8: Net EFWTP Return Flows Backwash Effluent Discharge Diverted at Bachman Plant (MG): This column identifies the usage of EFWTP return flows discharge at Bachman WTP daily diversion.

Documentation of Signature Authority

[1] http://dallascityhall.com/government/pages/city-codes.aspx

This attachment provides documentation evidencing that Terry S. Lowery, Director of Dallas Water Utilities, has the authority to sign for the City of Dallas pursuant to Title 30 Texas Administrative Code §295.15(5)

Terry Lowery is a duly authorized official, empowered by the City Charter and City Code to sign and pursue water use permit applications and amendments. The Director of Dallas Water Utilities is empowered to pursue water rights at the TCEQ pursuant to Dallas' City Code, a pertinent portion of which is set out below.

Dallas City Code

ARTICLE V-d. WATER UTILITIES DEPARTMENT.

SEC. 2-50. CREATED; DIRECTOR OF WATER UTILITIES.

There is hereby created the water utilities department of the city of Dallas, at the head of which shall be the director of water utilities who shall be appointed by the manager. The department shall be composed of the director of water utilities and such other assistants and employees as the council may provide by ordinance upon recommendation of the city manager (Ord. 142215)

SEC. 2-51. DUTIES OF THE DIRECTOR OF THE WATER UTILITIES.

The director of the water utilities shall perform the following duties:

(a) Supervise the water and waste (municipal and industrial) water collection systems, mains, filtration plants, sanitary waste water treatment plants, reservoirs and all plants, properties, and appliances incident to the operation of the water and municipal and industrial waste water utilities of the city;

(b) Make recommendations to the city manager concerning the need for acquisition of additional water rights, ***appear before the Water Rights Commission, legislative committees and such other bodies as may be necessary for the acquisition of water rights; negotiate with the proper departments of the federal and state governments for the maintenance and acquisition of additional water rights;*** plan and program a waterworks system for the future growth of the city; conduct negotiations with customer cities, other public entities and industries for the furnishing of raw water and treated water; conduct negotiations with customer cities, other public entities and industries for the furnishing of treated waste water for irrigation and

[1] http://dallascityhall.com/government/pages/city-codes.aspx

industrial use; and conduct negotiations with federal, state and local agencies for obtaining supplies of raw water;

(c) *Make recommendation to the city manager concerning the need for expansion and improvements of the waste water collection and treatment system; and conduct negotiations with customer cities for the treatment of waste water.*

(d) *Make recommendations to the city manager as to rates and connection charges for the water utilities department necessary to defray the costs of proper maintenance, operation, expansion and extension of the water or municipal and industrial waste water systems and facilities, treatment plants, reservoirs, appurtenances, facilities, and land owned and operated by the water utilities departments.*

(e) *Supervise and administer special collections.*

(f) *Supervise and administer vital statistics*

(g) *Perform other duties as may be required by the city manager or by ordinance of the city council (Ord. Nos. 14215; 27697)*

[1] http://dallascityhall.com/government/pages/city-codes.aspx