Amendment #3
Update to the Trinity River Authority Clean Rivers Program FY 2020/2021 QAPP

Prepared by the Trinity River Authority in Cooperation with the Texas Commission on Environmental Quality (TCEQ)

Effective: Immediately upon approval by all parties

Questions concerning this QAPP should be directed to:
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Justification

This document details the changes made to the basin-wide Quality Assurance Project Plan to update Appendix B for fiscal year 2021. This document also includes staffing changes, address and phone number updates, updates to reflect the acquisition of Xenco Laboratories by Eurofins Scientific, acronym changes, a change to updated TNI reference material, CRWS Total Phosphorus method updates, and additional detail for how data is collected in the field by NTMWD and how data are received by TRA from NTMWD.

Summary of Changes

Section	Sub-section/ Figure/ Table	Page in Basin-Wide QAPP	Change	Justification	Affected Entity	Page in this Amendment
A1 Approval Page	Texas Commission on Environmental Quality	2	Update Sarah Eagle to Rebecca DuPont as Work Leader. Update Micalah Spenrath to Rebecca DuPont as CRP Project Manager. Update Sharon Coleman as Acting Lead CRP QAS to Dana Squires as Lead CRP QAS.	Staffing changes at TCEQ	TCEQ	6
	North Texas Municipal Water District	12	Change NTMWD Project Manager from Brooke Noack to Kristen Suprobo.	Staffing changes at NTMWD.	NTMWD	9
	North Texas Municipal Water District Laboratory	13	Change Ray Cotton as the NTMWD Laboratory Acting QA Officer to Kevin Frantz as the NTMWD QA Officer.	Staffing changes at NTMWD.	NTMWD Lab	9
	ALS Environmental – Life Sciences Division	16	Update Erica Howard to Erica Marinez for ALS Environmental.	Last name change.	ALS Environmental – Life Sciences Division	8
	City of Dallas	18	Change City of Dallas – Dallas Water Utilities RESWS SWTT Project Manager from Meigan Collins to Alfonso Morua and QA Officer from Robert Sewak to Jessica Staggs. Also update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA)	Staffing changes at City of Dallas For ease of acronym understanding and separation of departments.	City of Dallas	10
	City of Dallas	19	Update City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	For ease of acronym understanding and separation of departments.	City of Dallas	10
	Pace Analytical Services, Inc.	15	Replace Peggy Siegfried with Tim Gramling as Pace Analytical Lab Manager.	Staffing changes at Pace Analytical.	Pace Analytical Lab	11
A3 Distribution List	Texas Commission on Environmental Quality	27	Change TCEQ Project Manager from Micalah Spenrath to Rebecca DuPont and CRP Lead Quality Assurance Specialist from Sharon Coleman to Dana Squires.	Staffing changes at TCEQ.	TCEQ	12
	Laboratories	28	Replace Peggy Siegfried with Tim Gramling as Pace Analytical Lab Manager.	Staffing changes at Pace Analytical.	Pace Analytical Lab	13
		28	Change Ray Cotton as the NTMWD Laboratory Acting QA Officer to Kevin Frantz as the NTMWD QA Officer.	Staffing changes at NTMWD.	NTMWD	13
		28	Update Erica Howard to Erica Marinez for ALS Environmental.	Last name change.	ALS Environmental – Life Sciences Division	13

Section	Sub-section/ Figure/ Table	Page in Basin-Wide QAPP	Change	Justification	Affected Entity	Page in this Amendment
A3 Distribution List	Laboratories	28	Change lab name for Xenco Laboratories to Eurofins Xenco, LLC.	Acquisition of Xenco by Eurofins.	Eurofins Xenco, LLC	13
A3 Distribution List	WITHIN-BASIN PARTICIPATING AGENCIES TCEQ	29	Change NTMWD Project Manager from Brooke Noack to Kristen Suprobo.	Staffing changes at NTMWD.	NTMWD	14
		29	Change City of Dallas – Dallas Water Utilities RESWS SWTT Project Manager from Meigan Collins to Alfonso Morua and QA Officer from Robert Sewak to Jessica Staggs. Update address. Update phone number for Alfonso Morua. Also update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA) & City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	Staffing changes at City of Dallas. Office move for department and corrected phone number for Alfonso Morua. For ease of acronym understanding and separation of departments.	City of Dallas	14
A4 Project/Task Organization	TCEQ	31	Update Sarah Eagle to Rebecca DuPont as Work Leader. Update Micalah Spenrath to Rebecca DuPont as CRP Project Manager. Update Sharon Coleman as Acting Lead CRP QAS to Dana Squires as Lead CRP QAS.	Staffing changes at TCEQ	TCEQ	15
		32	Replace Kelly Rodibaugh with Rebecca DuPont as Acting TCEQ Project QA Specialist.	Staffing changes at TCEQ	TCEQ	16
A4 Project/Task Organization	WITHIN-BASIN PARTICIPATING AGENCIES	33	Change NTMWD Project Manager from Brooke Noack to Kristen Suprobo.	Staffing changes at NTMWD.	NTMWD	17
		33	Change City of Dallas – Dallas Water Utilities RESWS SWTT QA Officer from Robert Sewak to Jessica Staggs & Meigan Collins to Alfonso Morua as Project Manager.	Staffing changes at City of Dallas	City of Dallas	17
		33-34	Update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA) and City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	For ease of acronym understanding and separation of departments	City of Dallas	17-18
		34	Replace Peggy Siegfried with Tim Gramling as Pace Analytical Lab Manager.	Staffing changes at Pace Analytical.	Pace Analytical Lab	18
		34	Change Ray Cotton as the NTMWD Laboratory Acting QA Officer to Kevin Frantz as the NTMWD QA Officer.	Staffing changes at NTMWD.	NTMWD Lab	18
		34	Update Erica Howard to Erica Marinez for ALS Environmental.	Last name change.	ALS Environmental – Life Sciences Division	18
		34	Change lab name for Xenco Laboratories to Eurofins Xenco, LLC.	Acquisition of Xenco by Eurofins.	Eurofins Xenco, LLC	18
A4 Project/Task Organization	Figure A4.1. Organization Chart - Lines of Communication	35	Change lab name for Xenco Laboratories to Eurofins Xenco, LLC.	Acquisition of Xenco by Eurofins.	Eurofins Xenco, LLC	19
			Update Sarah Eagle to Rebecca DuPont as Work Leader. Update Micalah Spenrath to Rebecca DuPont as CRP Project Manager. Update Sharon Coleman as Acting Lead CRP QAS to Dana Squires as Lead CRP QAS.	Staffing changes at TCEQ	TCEQ	19

Section	Sub-section/ Figure/ Table	Page in Basin-Wide QAPP	Change	Justification	Affected Entity	Page in this Amendment
A4 Project/Task Organization	Figure A4.1. Organization Chart - Lines of Communication	35	Change City of Dallas – Dallas Water Utilities RESWS SWTT QA Officer from Robert Sewak to Jessica Staggs & Meigan Collins to Alfonso Morua as Project Manager.	Staffing changes at City of Dallas	City of Dallas	19
			Update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA) and City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	For ease of acronym understanding and separation of departments.	City of Dallas	19
			Update Erica Howard to Erica Marinez for ALS Environmental.	Last name change.	ALS Environmental – Life Sciences Division	19
			Replace Peggy Siegfried with Tim Gramling as Pace Analytical Lab Manager.	Staffing changes at Pace Analytical.	Pace Analytical Lab	19
			Replace Kelly Rodibaugh with Rebecca DuPont as Acting TCEQ Project QA Specialist.	Staffing changes at TCEQ	TCEQ	19
			Change NTMWD Project Manager from Brooke Noack to Kristen Suprobo and Ray Cotton as the NTMWD Laboratory Acting QA Officer to Kevin Frantz as the NTMWD QA Officer.	Staffing changes at NTMWD.	NTMWD	19
A8 Special Training/ Certification		40	Change reference to TNI Standard Volume 1 from 2009 version to 2016 version	Updated reference material	All labs	20
A9 Documents and Records	Laboratory Test Reports	41	Change reference to TNI Standard Volume 1 from 2009 version to 2016 version	Updated reference material	All labs	21
A9 Documents and Records	Electronic Data	42	Add a sentence to identify how NTMWD data is received by TRA.	Additional detail on data formats from partners.	NTMWD/TRA	22
B2 Sampling Methods	Sample Containers	43	Update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA) and City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	For ease of acronym understanding and separation of departments.	City of Dallas	23
B2 Sampling Methods	Recording Data	47	Add a sentence to identify how NTMWD data is recorded in the field.	Additional detail on field data collection procedures.	NTMWD	24
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.1 Measurement Performance Specifications for the Tarrant Regional Water District (continued)	71-73	Change lab name for Xenco Laboratories to Eurofins Xenco, LLC.	Acquisition of Xenco by Eurofins.	Eurofins Xenco, LLC	25-27
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.3 Measurement Performance Specifications for the City of Arlington (continued)	79	Update method for Total Phosphorus (parameter code 00665) analyzed at CRWS to EPA 365.1. This is the primary analytical method. SM 4500-P E will remain as a backup method to be used only as necessary. LOQs are the same for both methods.	New equipment and NELAP certification.	CRWS	28
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.4 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DA)	81-82	Update City of Dallas DWU RESWS SWTT to City of Dallas (Collecting Entity Code DA)	For ease of acronym understanding and separation of departments.	City of Dallas	29-30

Section	Sub-section/ Figure/ Table	Page in Basin-Wide QAPP	Change	Justification	Affected Entity	Page in this Amendment
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.5 Measurement Performance Specifications for Trinity River Authority (continued)	85	Update method for Total Phosphorus (parameter code 00665) analyzed at CRWS to EPA 365.1. This is the primary analytical method. SM 4500-P E will remain as a backup method to be used only as necessary. LOQs are the same for both methods.	New equipment and NELAP certification.	CRWS	31
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.6 Measurement Performance Specifications for the City of Grand Prairie (continued)	97	Update method for Total Phosphorus (parameter code 00665) analyzed at CRWS to EPA 365.1. This is the primary analytical method. SM 4500-P E will remain as a backup method to be used only as necessary. LOQs are the same for both methods.	New equipment and NELAP certification.	CRWS	32
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.8 Measurement Performance Specifications for the City of Irving (continued)	102	Update method for Total Phosphorus (parameter code 00665) analyzed at CRWS to EPA 365.1. This is the primary analytical method. SM 4500-P E will remain as a backup method to be used only as necessary. LOQs are the same for both methods.	New equipment and NELAP certification.	CRWS	33
Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)	TABLE A7.9 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DT)	104-105	Update City of Dallas RESWS WETT to City of Dallas (Collecting Entity Code DT)	For ease of acronym understanding and separation of departments.	City of Dallas	34-35
Appendix B Sampling Process Design and Monitoring Schedule (plan)	Sample Design Rationale FY 2021 and Changes from the FY 2020 Monitoring Schedule	116-117	Updated sample design rationale for FY2021, description of changes from FY2020 monitoring, and additional notes for TRA monitoring.	Describes changes to monitoring design for FY2021 based on the FY2020 Coordinated Monitoring Meetings	All Within Basin Participating Agencies	36-358
Appendix B Sampling Process Design and Monitoring Schedule (plan)	Table B1.1 Sample Design and Schedule, FY 2021	118-138	Updated Table B1.1 for FY2021 monitoring.	Describes changes to monitoring design for FY2021 based on the FY2020 Coordinated Monitoring Meetings	All Within Basin Participating Agencies	39-61
Appendix C: Station Location Maps	Station Location Maps	139-156	Updated maps of monitoring stations for FY2021 monitoring.	Describes changes to monitoring design for FY2021 based on the FY2020 Coordinated Monitoring Meetings	All Within Basin Participating Agencies	62-79

Detail of Changes

Details of the changes listed above are shown on the following pages. These pages are intended as direct replacements for existing pages in the QAPP. Changes are noted in red text. Appendix B and C of this Amendment replace the corresponding sections of Appendix B and C of the basin-wide QAPP in their entirety.

Distribution

QAPP Amendments and Revisions to Appendices will be distributed to all personnel on the distribution list maintained by the Planning Agency.

These changes will be incorporated into the QAPP document and TCEQ and the Trinity River Authority will acknowledge and accept these changes by signing this amendment.

Texas Commission on Environmental Quality

Water Quality Planning Division

Electronically Approved ***10/01/2020***

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Work Leader & Project Manager
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Electronically Approved ***10/01/2020***

Rebecca DuPont Date
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Electronically Approved 09/25/2020

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Pace Analytical Laboratory Manager

Electronically Approved 09/25/2020

Elizabeth Turner Date
Pace Analytical Laboratory QA Officer

Sub-tier participants (e.g., subcontractors, subparticipants, or other units of government) will sign the QAPP, indicating the organization's awareness of, and commitment to requirements contained in this quality assurance project plan and any amendments or added appendices of this plan. Signatures in section A1 will eliminate the need for adherence letters to be maintained.

Replaces Page 27 of the FY 2020-2021 Basin-Wide QAPP

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Description of Responsibilities

TCEQ

Rebecca DuPont

CRP Work Leader

Responsible for Texas Commission on Environmental Quality (TCEQ) activities supporting the development and implementation of the Texas Clean Rivers Program (CRP). Responsible for verifying that the TCEQ Quality Management Plan (QMP) is followed by CRP staff. Supervises TCEQ CRP staff. Reviews and responds to any deficiencies, corrective actions, or findings related to the area of responsibility. Oversees the development of Quality Assurance (QA) guidance for the CRP. Reviews and approves all QA audits, corrective actions, reports, work plans, contracts, QAPPs, and TCEQ Quality Management Plan. Enforces corrective action, as required, where QA protocols are not met. Ensures CRP personnel are fully trained.

Dana Squires

CRP Lead Quality Assurance Specialist

Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Assists program and project manager in developing and implementing quality system. Serves on planning team for CRP special projects. Coordinates the review and approval of CRP QAPPs. Prepares and distributes annual audit plans. Conducts monitoring systems audits of Planning Agencies. Concurs with and monitors implementation of corrective actions. Conveys QA problems to appropriate management. Recommends that work be stopped in order to safeguard programmatic objectives, worker safety, public health, or environmental protection. Ensures maintenance of QAPPs and audit records for the CRP.

Rebecca DuPont

CRP Project Manager

Responsible for the development, implementation, and maintenance of CRP contracts. Tracks, reviews, and approves deliverables. Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Assists CRP Lead QA Specialist in conducting Basin Planning Agency audits. Verifies QAPPs are being followed by contractors and that projects are producing data of known quality. Coordinates project planning with the Basin Planning Agency Project Manager. Reviews and approves data and reports produced by contractors. Notifies QA Specialists of circumstances which may adversely affect the quality of data derived from the collection and analysis of samples. Develops, enforces, and monitors corrective action measures to ensure contractors meet deadlines and scheduled commitments.

Cathy Anderson

Team Leader, Data Management and Analysis (DM&A) Team

Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Ensures DM&A staff perform data management-related tasks.

Sarah Kirkland

CRP Data Manager, DM&A Team

Responsible for coordination and tracking of CRP data sets from initial submittal through CRP Project Manager review and approval. Ensures that data are reported following instructions in the Data Management Reference Guide, December 2016 or most current version (DMRG). Runs automated data validation checks in the Surface Water Quality Management Information System (SWQMIS) and coordinates data verification and error correction with CRP Project Managers. Generates SWQMIS summary reports to assist CRP Project Managers' data review. Identifies data anomalies and inconsistencies. Provides training and guidance to CRP and Planning Agencies on technical data issues to ensure that data are submitted according to documented procedures. Reviews QAPPs for valid stream monitoring stations. Checks validity of parameter codes, submitting entity code(s), collecting entity code(s), and monitoring type code(s). Develops and maintains data management-related SOPs for CRP data management. Coordinates and processes data correction requests. Participates in the development, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP).

Replaces Page 32 of the FY 2020-2021 Basin-Wide QAPP, Section A4, Project/Task Organization

Rebecca DuPont

Acting CRP Project Quality Assurance Specialist

Serves as liaison between CRP management and TCEQ QA management. Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Serves on planning team for CRP special projects and reviews QAPPs in coordination with other CRP staff. Coordinates documentation and implementation of corrective action for the CRP.

TRINITY RIVER AUTHORITY

Angela Kilpatrick

TRA Project Manager

Responsible for implementing and monitoring CRP requirements in contracts, QAPPs, and QAPP amendments and appendices. Coordinates basin planning activities and work of basin partners. Conducts monitoring systems audits or oversees a qualified TRA CRP staff member who may conduct monitoring systems audits to ensure QAPPs are followed by WBPAs and that projects are producing data of known quality, issues written reports, and follows through on findings. Ensures that subparticipants are qualified to perform contracted work. Ensures CRP project managers and/or QA Specialists are notified of deficiencies and corrective actions, and that issues are resolved. Responsible for coordinating and directing the implementation of the QA program. Responsible for writing and maintaining the QAPP and monitoring its implementation. Responsible for maintaining records of QAPP distribution, including appendices and amendments. Responsible for maintaining written records of sub-tier commitment to requirements specified in this QAPP. Responsible for identifying, receiving, and maintaining project QA records. Responsible for coordinating with the TCEQ QAS to resolve QA-related issues. Coordinates and monitors deficiencies and corrective action in cooperation with the TRA Quality Assurance Officer. Coordinates the research and review of technical QA material and data related to water quality monitoring system design and analytical techniques. Ensures that TRA field staff is properly trained and that training records are maintained.

Hong Wu

TRA Quality Assurance Officer

Responsible for coordinating with the TCEQ QAS to resolve QA-related issues. Notifies the TRA Project Manager of particular circumstances which may adversely affect the quality of data. Responsible for coordinating the implementation of the QA program under the direction of the TRA Project Manager. Coordinates and monitors deficiencies and corrective action under the direction of the TRA Project Manager. Responsible for validating that data collected are acceptable for reporting to the TCEQ. Coordinates and maintains records of data verification and validation under the direction of the TRA Project Manager. Responsible for ensuring that field and lab data are properly reviewed and verified and oversees the TRA Data Manager in conducting these duties. Converts TRA CRWS LIMS data for TRA and WBPAs into the data submittal template or oversees the work of the TRA Data Manager in conducting these duties. Oversees the work of the TRA Data Manager for field and lab data review and verification. Responsible for the transfer of basin quality-assured water quality data to the TCEQ in a format compatible with SWQMIS. Maintains quality-assured data on TRA internet sites.

Carion Taylor

TRA Data Manager

Responsible for TRA CRP field data entry and conversion of TRA CRWS LIMS data for TRA and WBPAs into the data submittal template under the supervision of the TRA QAO. Works under the direction of the TRA Quality Assurance Officer to ensure that field and lab data are properly reviewed and verified. Works under the direction of the TRA Quality Assurance Officer to coordinate and maintain records of data verification and validation.

Kelly McKnight

TRA Field Team Leader

Responsible for ensuring that field samples and measurements are collected and recorded according to methodologies detailed in this QAPP. Field team leaders will be instructed on appropriate sampling methodologies, and will ensure that such methodologies are followed. They will have primary responsibility for initiating corrective actions in the field in support of data completeness goals of 90%. Field team leaders will ensure proper use of field notebooks, field electronic data entry equipment, proper calibration of equipment, and that chain of custody forms are correctly completed and delivered to the laboratory with analytical samples. Responsible for ensuring that the electronic field data geodatabase schema is maintained and that all electronically collected field data are compliant with TCEQ requirements. Responsible for ensuring that all

electronically collected field data are properly formatted for delivery to the TRA Quality Assurance Officer. Responsible for documenting any nonconforming field activities and submitting the information to the TRA Quality Assurance Officer and TRA Project Manager.

WITHIN-BASIN PARTICIPATING AGENCIES (WBPA)

Field Team Leaders

TRA LLP, Tarrant Regional Water District, City of Arlington, City of Dallas (Collecting Entity Code DA), City of Fort Worth, City of Grand Prairie, City of Irving, City of Dallas (Collecting Entity Code DT), North Texas Municipal Water District, DFW Airport EAD (To Remain Unnamed)

Field team leaders are responsible for ensuring that field samples and measurements are collected and recorded according to methodologies detailed in this QAPP. Field team leaders will be instructed on appropriate sampling methodologies, and will ensure that such methodologies are followed. They will have primary responsibility for initiating corrective actions in the field in support of data completeness goals of 90%. Field team leaders will ensure proper use of field notebooks, proper calibration of equipment, and that chain of custody forms are correctly completed and delivered to the laboratory with analytical samples. Field team leaders will be responsible for documenting any nonconforming field activities and submitting the information to the WBPA Project Manager and/or WBPA QAO.

Field Team Members

TRA LLP, Tarrant Regional Water District, City of Arlington, City of Dallas (Collecting Entity Code DA), City of Fort Worth, City of Grand Prairie, City of Irving, City of Dallas (Collecting Entity Code DT), North Texas Municipal Water District, DFW Airport EAD (To Remain Unnamed)

Field team members will work under the direction of field team leaders as necessary to ensure field samples and measurements are collected and recorded according to methodologies detailed in this QAPP.

Project Managers

Mike Knight, TRA LLP
Mark Ernst, Tarrant Regional Water District
Brigette Gibson, City of Arlington
Alfonso Morua, City of Dallas (Collecting Entity Code DA)
Nixalis Benitez, City of Fort Worth
Cindy Mendez, City of Grand Prairie
Jeffrey Shiflet, City of Irving
Nusrat Munir, City of Dallas (Collecting Entity Code DT)
Kristen Suprobo, North Texas Municipal Water District
Chris Hughes, DFW Airport EAD

The project managers are responsible for all CRP-related activities conducted by their respective agencies. The project managers will oversee field teams, assuring that all are properly trained by either TRA staff or trained WBPA personnel and that CRP-related sampling activities are conducted in manners consistent with procedures detailed in this QAPP. The project managers also supervise submittal of water quality samples to contract laboratories as appropriate and will be responsible for confirming that requested analyses are carried out. Ensures that field staff are properly trained and that training records are maintained in accordance with their entity's policies and/or are sent to the TRA QAO. The project managers are responsible for ensuring that the TRA QAO and/or PM are informed of any nonconformances and for working with the TRA QAO and/or PM to implement corrective actions. Project managers are responsible for notifying the TRA QAO and PM of any monitoring or laboratory changes to ensure that QAPP amendments are completed in a timely fashion.

Quality Assurance Officers

Sheryl Hanks, TRA LLP
Jennifer Owens, Tarrant Regional Water District
Dylan Tissue, City of Arlington
Jessica Staggs, City of Dallas (Collecting Entity Code DA)
Kayla Miller, City of Fort Worth
Chandani Rana, City of Grand Prairie

Jeffrey Shiflet, City of Irving
Jonathan Pasley, City of Dallas (Collecting Entity Code DT)
Katie McElroy, North Texas Municipal Water District
Tammie Walters, DFW Airport EAD

The quality assurance officers are responsible for ensuring their respective agencies meet all quality control and quality assurance requirements as specified in this QAPP. Responsible for coordinating with the TRA DM and QAO to resolve QA-related issues. Works under the guidance of the WBPA Project Manager to notify the TRA Project Manager and/or Quality Assurance Officer of particular circumstances which may adversely affect the quality of data including nonconformances. Ensures that field staff is properly trained and that training records are transmitted to the TRA Project Manager. Responsible for ensuring that data submittals to the TRA Data Manager are complete and verified.

Laboratory Managers

Craig Harvey, TRA CRWS Laboratory
Tim Gramling, Pace Analytical Services, Inc.
Ann Lawson, City of Arlington Laboratory
Mike Kimmel, Eurofins Xenco, LLC - Dallas
Julian Martinez, Eurofins Xenco, LLC - Houston
David Nelson, City of Fort Worth Water Department Centralized Water and Wastewater Laboratory
Ray Cotton, North Texas Municipal Water District
Randy Rushin, Water Monitoring Solutions, Inc.
Hoai Van, ALS Environmental – Life Sciences Division

The laboratory managers will oversee all analytical work performed at their respective laboratories to assure that proper and appropriate clean analytical techniques are utilized, all QA/QC requirements are met, documentation is complete and adequately maintained, and results are reported accurately. When quality assurance issues arise or deviations from this QAPP or related SOPs occur in the laboratory, the laboratory managers will be responsible for initiating corrective actions and for notifying the TRA QAO of any such issues either by email or phone call. The laboratory managers will also maintain the laboratory's QA records and analysts' training records and ensure that analysts have adequate training and a thorough knowledge of this QAPP and related SOPs.

Laboratory Quality Assurance Officers

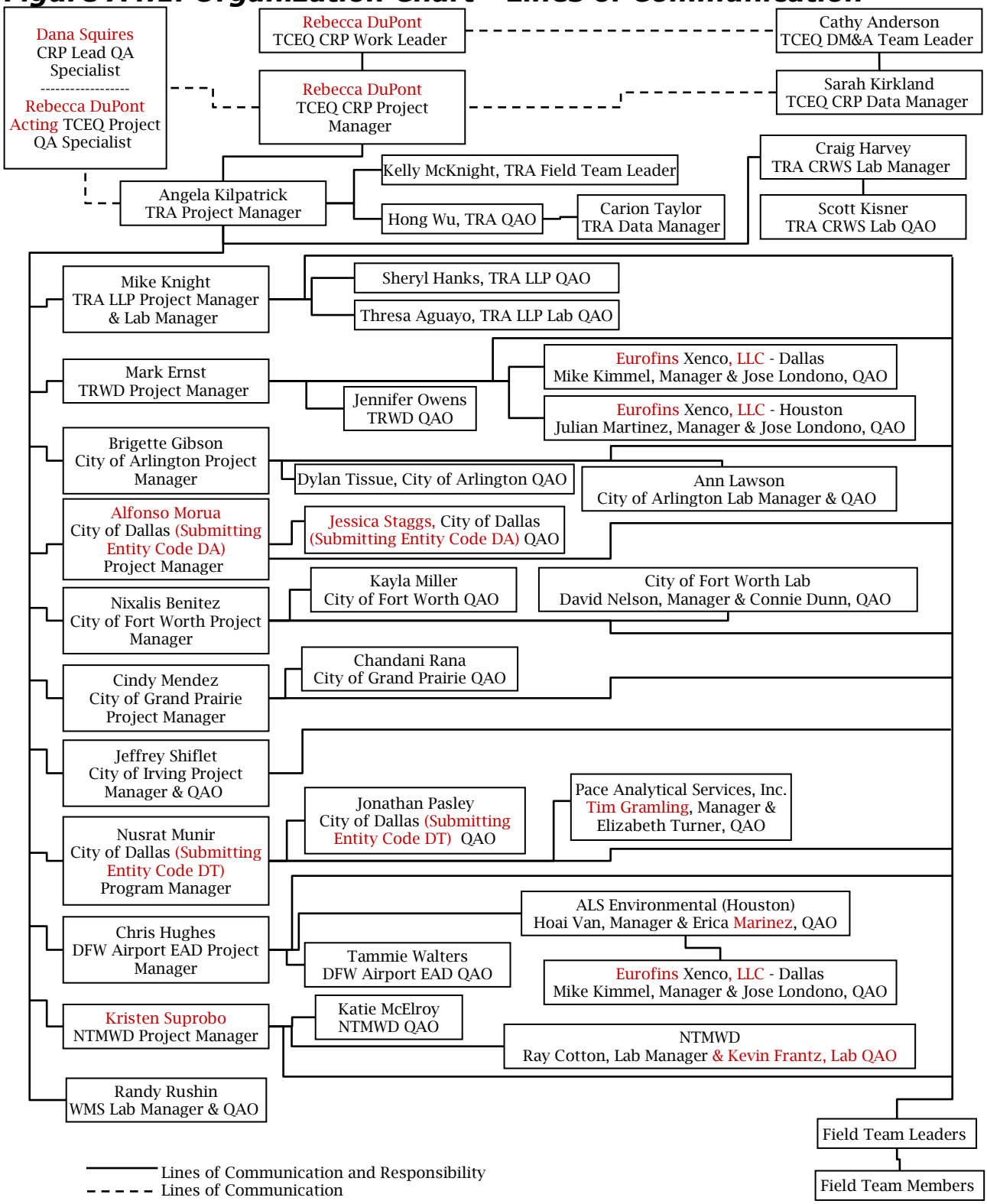
Scott Kisner, TRA CRWS Laboratory
Thresa Aguayo, TRA LLP Laboratory
Elizabeth Turner, Pace Analytical Services, Inc.
Ann Lawson, City of Arlington Laboratory
Jose Londono, Eurofins Xenco, LLC – Dallas & Houston
Connie Dunn, City of Fort Worth Water Department Centralized Water and Wastewater Laboratory
Kevin Frantz, North Texas Municipal Water District
Randy Rushin, Water Monitoring Solutions, Inc.
Erica Marinez, ALS Environmental – Life Sciences Division

The laboratory quality assurance officers, in cooperation with the laboratory managers, are responsible for ensuring the data produced by each lab meets the quality control and quality assurance requirements as specified in this QAPP. Ensures compliance with this QAPP, lab quality manuals, and related SOPs through data review and internal audits as needed. If compliance issues are found, the laboratory QAO is responsible for notifying the laboratory manager. Data should be verified and approved prior to submittal to the WBPA QAO or TRA DM.

Replaces Page 35 of the FY 2020-2021 Basin-Wide QAPP, Section A4, Project/Task Organization

Project Organization Chart

Figure A4.1. Organization Chart - Lines of Communication



data sets will not be biased toward unusual conditions of flow, runoff, or season. The goal for meeting maximum representation of the water body will be tempered by funding availability.

Biological monitoring sites will be selected that best represent conditions (both biological and water quality) of the entire water body. The chosen sites will have a good variety of microhabitats to sample, including a mixture of riffles, runs, and pools. Sampling will be avoided in reaches where water quality conditions and hydrology change dramatically over the reach, such as areas with a major tributary or contaminant source. Accessibility of sample locations will also be taken into consideration when choosing reaches – reaches that are too deep to wade and those where transportation of sampling equipment is excessively difficult (such as steep incised banks with impassable vegetation) will be avoided.

See Sample Design Rationale and Site Selection Criteria in section B1 for details about site selection.

Comparability

Confidence in the comparability of routine data sets for this project and for water quality assessments is based on the commitment of project staff to use only approved sampling and analysis methods and QA/QC protocols in accordance with quality system requirements as described in this QAPP and in TCEQ guidance. Comparability is also guaranteed by reporting data in standard units, by using accepted rules for rounding figures, and by reporting data in a standard format as specified in the Data Management Plan in Section B10.

Completeness

The completeness of the data describes how much of the data are available for use compared to the total potential data. Ideally, 100% of the data should be available. However, the possibility of unavailable data due to accidents, insufficient sample volume, broken or lost samples, etc. is to be expected. Therefore, it will be a general goal of the project(s) that 90% data completion is achieved.

A8 Special Training/Certification

New field personnel receive training in proper sampling and field analysis from either TRA staff or WBPA personnel that have had previous training. This training will include instruction on how to properly calibrate field equipment and perform field sampling. Field personnel training conducted by TRA staff is documented and retained in the TRA Project Manager's files and will be available during a monitoring systems audit.

Field staff training forms will be sent to all subcontractor and WBPA Project Managers at the beginning of each biennium. These forms will be filled out and returned to the TRA Project Manager and maintained by TRA. Field staff training records may also be maintained by the subcontractor or WBPA at their discretion.

Contractors and subcontractors must ensure that laboratories analyzing samples under this QAPP meet the requirements contained in The NELAC Institute Standard (2016) Volume 1, Module 2, Section 4.5.5 (concerning Subcontracting of Environmental Tests).

Collection of habitat, benthics, and fish will be in accordance with the *Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, Revised May 2014* (or most recent version). Individuals conducting identification of benthic macroinvertebrates and fish have adequate training and education to accurately identify species. These individuals have attended at least one Texas Fish Identification course offered by Texas State University, continuing education at conferences and workshops, and specialized Trinity River specific fish identification field classes taught by Bio-West.

A9 Documents and Records

The documents and records that describe, specify, report, or certify activities are listed. The list below is limited to documents and records that may be requested for review during a monitoring systems audit.

Replaces Page 41 of the FY 2020-2021 Basin-Wide QAPP, Section A9, Documents and Records

Table A9.1 Project Documents and Records

Document/Record	Location	Retention (yrs)	Format
QAPPs, amendments and appendices	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Field SOPs	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Laboratory Quality Manuals	Laboratories	7 years	Paper or Electronic
Laboratory SOPs	Laboratories	7 years	Paper or Electronic
QAPP distribution documentation	TRA	7 years	Paper or Electronic
Field staff training records	TRA (WBPA or Subcontractor – at their discretion)	7 years	Paper or Electronic
Field equipment calibration/maintenance logs	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Field instrument printouts	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Field notebooks, data sheets, or electronic field data collection tables	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Chain of custody records (See Appendix H for Tracking Logs for Benthics and Fish for TRA ALM Sampling)	TRA, WBPA, Subcontractor	7 years	Paper or Electronic
Laboratory calibration records	Laboratories	7 years	Paper or Electronic
Laboratory instrument printouts	Laboratories	7 years	Paper or Electronic
Laboratory data reports/results	Laboratories, WBPA, TRA	7 years	Paper or Electronic
Laboratory equipment maintenance logs	Laboratories	7 years	Paper or Electronic
Corrective Action Documentation	TRA, WBPA, Subcontractor, Laboratories	7 years	Paper or Electronic

Laboratory Test Reports

Test/data reports from the laboratory must document the test results clearly and accurately. Routine data reports should be consistent with the TNI Standard (2016), Volume 1, Module 2, Section 5.10 and include the information necessary for the interpretation and validation of data. The requirements for reporting data and the procedures are provided. At a minimum, test reports should include the following (for labs that serve outside customers):

- Sample results
- Units of measurement
- Sample matrix (if other than water or not identified in sample name)
- Dry weight or wet weight (as applicable)
- Station information
- Date and time of collection
- Holding time for *E. coli* (generally calculated as the difference between the sample collection date/time and the sample processing or analysis date/time)
- LOQ and limit of detection (LOD) (formerly referred to as the reporting limit and the method detection limit, respectively), and qualification of results outside the working range (if applicable)
    - This may be listed under other field names based on the nomenclature for the standard reports generated by each lab (ALS Environmental Laboratory lists under the MQL field, Xenco lists under the RL field, the City of Arlington Water Utilities Laboratory lists under the MRL field, and the NTMWD laboratory lists under the AQL field)
- Certification of NELAP compliance
- A statement of compliance/non-compliance with requirements and/or specifications

- Title of report and unique identifiers on each page
- Name/address of the laboratory
- Name/address of the client (if report is sent to an outside customer)
- A clear indication of the sample(s) analyzed
- Date and time of sample receipt
- Identification of method used
- Identification of samples that did not meet QA requirements and why (e.g. holding times exceeded)
- Clearly identified subcontract laboratory results (as applicable)
- Name/title of person accepting responsibility for the report
- Project-specific quality control results to include field split results (as applicable); equipment, trip, and field blank results (as applicable); and precision, bias, and LOQ check standard results
- Narrative information on QC failures or deviations from requirements that may affect the quality of results or is necessary for verification and validation of data

The TRA Lake Livingston Project does not produce laboratory test reports as described above for CRP samples. LLP field staff run the laboratory analyses and LLP analytical results are entered into electronic logs or hardcopy logs depending on the parameter being analyzed. Samples are identified by parameter, station, sample date, and a unique lab sample ID which are tied to combination field data sheets and chain of custody forms. All batch quality control results are associated with the ambient water samples by the batch analytical run date. All analyses and QC for each parameter satisfy current TNI Standard requirements (or CRP requirements, whichever is more stringent). Analytical results and any associated QC failure narratives are entered directly into the data submittal form (that is sent to the TRA DM) by field/laboratory staff. The CRP data set is delivered quarterly from LLP to the TRA DM via electronic database.

Electronic Data

Data will be submitted electronically to the TCEQ in the Event/Result file format described in the most current version of the DMRG, which can be found at https://www.tceq.texas.gov/waterquality/data-management/dmrg_index.html. A completed Data Review Checklist and Data Summary (see Appendix F) will be submitted with each data submittal. Portions of the Biological Monitoring Reporting Packet (Appendix H) will be submitted by TRA to TCEQ in the required BLOB format as described in the Surface Water Quality Monitoring Data Management Reference Guide.

Data from WBPAs will be received in Excel that will then be converted by the TRA to the Event/Result file format specified in the TCEQ's SWQM DMRG. Data from NTMWD is received in the Event/Result file format and is then reviewed by the TRA QA officer prior to submittal to TCEQ.

Replaces Page 43 of the FY 2020-2021 Basin-Wide QAPP, Section B2, Sampling Methods

B1 Sampling Process Design

See Appendix B for sampling process design information and monitoring tables associated with data collected under this QAPP.

B2 Sampling Methods

Field Sampling Procedures

Field sampling will be conducted in accordance with the latest versions of the TCEQ *Surface Water Quality Monitoring Procedures Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue, 2012 (RG-415)* and *Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416)*, collectively referred to as "SWQM Procedures" with an exception for vertical profiles in rivers and streams. Vertical profiles will not be collected in rivers and streams by TRA or WBPAs under this QAPP. Updates to SWQM Procedures are posted to the Surface Water Quality Monitoring Procedures website (https://www.tceq.texas.gov/waterquality/monitoring/swqm_guides.html), and shall be incorporated into the TRA's procedures, QAPP, SOPs, etc., within 60 days of any final published update. Additional aspects outlined in Section B below reflect specific requirements for sampling under CRP and/or provide additional clarification.

Sample Containers

WBPAs may obtain sample containers in two ways: they can purchase them from contract labs and/or they may receive them from TRA. TRA maintains certificates from sample container manufacturers for those sample containers that TRA has purchased from CRWS or an outside vendor. The sample containers that TRA has purchased are stored at TRA. Certificates from sample container manufacturers are also maintained by the CRWS lab or the WBPA contract lab. Records of cleaning and confirmation of cleanliness for labs that provide reusable sample containers are maintained by that lab. Details for sample containers used by each WBPA are listed below.

- LLP purchases all their own sample containers new with the exception of amber chlorophyll bottles (glass) which are washed in the laboratory dishwasher and tested for detergent residue after. Sample containers used for bacteriological samples are purchased sterilized and have 1% sodium thiosulfate added. The sample containers for metals are new, certified plastic bottles. Plastic containers are used for conventional parameters.
- The City of Arlington receives all their sample containers from TRA who purchases them from the CRWS laboratory with the exception of metals bottles. Sample containers used for bacteriological samples are purchased sterilized and have 1% sodium thiosulfate added. The sample containers for metals are new, certified plastic bottles. Amber plastic bottles are used for chlorophyll-a samples. Cubitainers are used for conventional parameters. Metals bottles are new, certified plastic bottles and purchased from an outside vendor. .
- The City of Fort Worth receives sample containers from their lab. Sample containers used for bacteriological samples are purchased sterilized and have 1% sodium thiosulfate added.
- NTMWD uses new, certified-clean plastic containers for TOC and metals and new, sterilized 100 mL bottles with sodium thiosulfate for bacteria. All other parameters collected by NTMWD are in reusable plastic containers that have been cleaned to standards specified in NTMWD Labware Cleaning Procedures 36-084. Amber plastic bottles are used for chlorophyll-a samples.
- TRWD receives all sample containers from their contract lab. All containers are purchased certified Level 1 precleaned. Sample containers used for bacteriological samples are purchased sterilized and have 1% sodium thiosulfate added.
- The City of Dallas (Collecting Entity DA) receives metals sample containers from TRA which are new, certified plastic bottles and purchased from an outside vendor.
- The City of Dallas (Collecting Entity DT) receives bacteriological sample containers from their contract lab which are purchased sterilized and have 1% sodium thiosulfate added.
- DFW International Airport EAD receives all of their sample containers prepreserved from their contract lab. Sample containers used for bacteriological samples are purchased sterilized and have 1% sodium thiosulfate added. Total petroleum hydrocarbon sample containers are glass vials. The sample containers for metals are new, certified plastic bottles. Sample containers for conventional parameters

- Sample Collector's name
- Values for all field parameters collected
- Notes containing detailed observational data not captured by field parameters, including;
    - Water appearance
    - Weather
    - Biological activity
    - Recreational activity
    - Unusual odors
    - Pertinent observations related to water quality or stream uses (e.g., exceptionally poor water quality conditions/standards not met; stream uses such as swimming, boating, fishing, irrigation pumps, etc.)
    - Watershed or instream activities (events impacting water quality, e.g., bridge construction, livestock watering upstream, etc.)
    - Specific sample information
    - Missing parameters (i.e., when a scheduled parameter or group of parameters is not collected)

Examples of Field Data Sheets to be used in biological monitoring are shown in Appendix H. The Discharge Measurement Summary Report is from a SonTek FlowTracker. The Stream Flow (Discharge) Measurement Form is for flow measurements conducted with a Marsh McBirney or equivalent flow meter. The instrument used for flow measurement will be determined in the field based on flow conditions and the appropriate flow measurement report or form will be included in the data packet. Additional forms for biological monitoring data reporting as described in Appendix C of the *TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416)*, are also located in Appendix H. Nekton samples will be identified and separated by collection type – seining and/or electroshocking – and will include associated metadata.

Recording Data

For the purposes of this section and subsequent sections, all field and laboratory personnel follow the basic rules for recording information as documented below:

- Write legibly, in indelible ink
- Make changes by crossing out original entries with a single line strike-out, entering the changes, and initialing and dating the corrections.
- Close-out incomplete pages with an initialed and dated diagonal line.

Exceptions to this include electronic field data collection conducted by TRA. Data are entered into an electronic form as shown in Appendix D. The data are stored in the Esri Cloud and then downloaded to the TRA SQL server. Changes are tracked via a series of auto-archived tables that tag changed records with the log-on information of the editor and the date and time the edits were made. NTMWD used electronic data capture in the field and delivers data to TRA in the event/result file format described in the DMRG.

Sampling Method Requirements or Sampling Process Design Deficiencies, and Corrective Action

Examples of sampling method requirements or sample design deficiencies include but are not limited to such things as inadequate sample volume due to spillage or container leaks, failure to preserve samples appropriately, contamination of a sample bottle during collection, storage temperature and holding time exceedance, sampling at the wrong site, etc. Any deviations from the QAPP, SWQM Procedures, or appropriate sampling procedures may invalidate data, and require documented corrective action. Corrective action may include for samples to be discarded and re-collected. Deviations will be communicated from the WBPA or TRA field or laboratory staff to the WBPA or TRA Project Managers. WBPA Project Managers will forward information about deviations to the TRA Project Manager. It is the responsibility of the TRA Project Manager, in consultation with the TRA QAO, to ensure that the actions and resolutions to the problems are documented and that records are maintained in accordance with this QAPP. In addition, these actions and resolutions will be conveyed to the CRP Project Manager both verbally and in writing in the project progress reports and by completion of a CAP.

The definition of and process for handling deficiencies and corrective action are defined in Section C1.

Replaces Page 71 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.1 Measurement Performance Specifications for Tarrant Regional Water District (continued)										
Bacteriological Parameters in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Log Difference of Duplicates**	**Bias %Rec. of LCS**	**Lab**
E. COLI, COLILERT, IDEXXMETHOD, MPN/100ML	MPN/100 mL	water	SM 9223 B	31699	1	1	NA	0.50****	NA	Eurofins Xenco-Dallas
Conventional Parameters in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
ALKALINITY, TOTAL (MG/L AS CACO3)	mg/L	water	SM 2320 B	00410	20	4	NA	20	NA	Eurofins Xenco-Houston
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	2.5	NA	NA	NA	Eurofins Xenco-Houston
RESIDUE, VOLATILE NONFILTRABLE (MG/L)	mg/L	water	EPA 160.4	00535	5	2	NA	NA	NA	Eurofins Xenco-Houston
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	EPA 350.1 Rev. 2.0 (1993)	00610	0.1	0.1	70-130	20	80-120	Eurofins Xenco-Houston
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	EPA 351.2	00625	0.2	0.2	70-130	20	80-120	Eurofins Xenco-Houston
NITRITE PLUS NITRATE, TOTAL ONE LAB DETERMINED VALUE (MG/L AS N)	mg/L	water	EPA 353.2	00630	0.05	0.02 (lake) 0.05 (tribs *****	70-130	20	80-120	Eurofins Xenco-Houston
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1	00665	0.06	0.02	70-130	20	80-120	Eurofins Xenco-Houston
CARBON, TOTAL ORGANIC, NPOC (TOC), MG/L	mg/L	water	SM 5310 C	00680	2	1	NA	NA	NA	Eurofins Xenco-Houston
CARBON, DISSOLVED ORGANIC, DNPC (DOC), MG/L	mg/L	water	SM 5310 C	00681	NA	1	70-130	20	80-120	Eurofins Xenco-Houston
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00940	5	0.5	70-130	20	80-120	Eurofins Xenco-Houston
SULFATE (MG/L AS SO4)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00945	5	0.5	70-130	20	80-120	Eurofins Xenco-Houston
SILICA, DISSOLVED (MG/L AS SIO2)	mg/L	water	EPA 200.7 Rev 4.4 (1994)	00955	NA	0.05	70-130	20	80-120	Eurofins Xenco-Houston
SILICA, TOTAL (MG/L AS SI02)	mg/L	water	EPA 200.7 Rev 4.4 (1994)	00956	NA	0.05	70-130	20	80-120	Eurofins Xenco-Houston
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	µg/L	water	SM 10200 H	32211	3	1	NA	20	80-120	Eurofins Xenco-Dallas
RESIDUE,TOTAL FILTRABLE (DRIED AT 180C) (MG/L)	mg/L	water	SM 2540 C	70300	10	5	NA	20	80-120	Eurofins Xenco-Houston

Replaces Page 72 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.1 Measurement Performance Specifications for Tarrant Regional Water District (continued)										
Conventional Parameters in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
ORTHOPHOSPHATE PHOSPHORUS,DISS,MG/L,FILTER >15MIN	mg/L	water	EPA 365.1	70507	0.04	0.005 (lake) 0.02 (tribs) *****	70-130	20	80-120	Eurofins Xenco-Houston
BROMIDE (MG/L AS BR)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	71870	NA	0.1	70-130	20	80-120	Eurofins Xenco-Houston
Metals in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
CALCIUM, TOTAL (MG/L AS CA)	mg/L	water	EPA 200.7 Rev 4.4 (1994)	00916	0.5	0.1	70-130	20	80-120	Eurofins Xenco-Houston
MAGNESIUM, TOTAL (MG/L AS MG)	mg/L	water	EPA 200.8 Rev 5.4 (1998)	00927	0.5	0.1	70-130	20	80-120	Eurofins Xenco-Houston
SODIUM, TOTAL (MG/L AS NA)	mg/L	water	EPA 200.8 Rev 5.4 (1998)	00929	NA	0.1	70-130	20	80-120	Eurofins Xenco-Houston
POTASSIUM, TOTAL (MG/L AS K)	mg/L	water	EPA 200.7 Rev 4.4 (1994)	00937	NA	0.1	70-130	20	80-120	Eurofins Xenco-Houston
ARSENIC, DISSOLVED (UG/L AS AS)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01000	5	4	70-130	20	80-120	Eurofins Xenco-Houston
ARSENIC, TOTAL (UG/L AS AS)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01002	NA	2	70-130	20	80-120	Eurofins Xenco-Houston
CHROMIUM, DISSOLVED (UG/L AS CR)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01030	10	4	70-130	20	80-120	Eurofins Xenco-Houston
IRON, TOTAL (UG/L AS FE)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01045	300	20	70-130	20	80-120	Eurofins Xenco-Houston
MANGANESE, TOTAL (UG/L AS MN)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01055	50	2	70-130	20	80-120	Eurofins Xenco-Houston

Replaces Page 73 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.1 Measurement Performance Specifications for Tarrant Regional Water District (continued)

* Reporting to be consistent with SWQM guidance and based on measurement capability.
** To be routinely reported when collecting data from perennial pools.
*** As published by the Texas Water Development Board on their website https://www.waterdatafortexas.org/reservoirs/statewide
**** This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.
***** Tribs are defined as any stream or river site.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 23rd Edition, 2017.
TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

Replaces Page 79 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.3 Measurement Performance Specifications for the City of Arlington (continued)

Bacteriological Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Log Difference of Duplicates	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/ 100 mL	water	IDEXX Laboratories Colilert®/ Colilert®-18	31699	1	1	NA	0.50***	NA	CRWS
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/ 100 mL	water	SM 9223 B	31699	1	1	NA	0.50***	NA	AR

Conventional Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
NITRITE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00615	0.05	0.05	70-130	20	80-120	CRWS
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.05	70-130	20	80-120	CRWS
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	EPA 351.2	00625	0.2	0.2	70-130	20	80-120	CRWS
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1 (Primary Method) SM 4500-P E (Backup Method)	00665	0.06	0.02	70-130	20	80-120	CRWS
HARDNESS, TOTAL (MG/L AS CACO3)****	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	CRWS
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	µg/L	water	SM 10200 H	32211	3	3	NA	20	80-120	CRWS
ORTHOPHOSPHATE PHOSPHORUS,DISS,MG/L,FILTER >15MIN	mg/L	water	SM 4500-P F	70507	0.04	0.02	70-130	20	80-120	CRWS

Metals in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
CADMIUM, DISSOLVED (UG/L AS CD)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01025	0.1 for waters <50mg/L hardness ------- 0.3 for waters >50mg/L hardness	0.3	70-130	20	80-120	AR

Replaces Page 81 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.4 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DA)

Field Parameters										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD of LCS/LCSD)**	**Bias %Rec. of LCS**	**Lab**
TEMPERATURE, WATER (DEGREES CENTIGRADE)*	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TEMPERATURE, AIR (DEGREES CENTIGRADE)	DEG C	air	SM 2550 B and TCEQ SOP V1	00020	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE,FIELD (US/CM @ 25C)*	µs/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)*	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)*	s.u	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
Flow Parameters										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD of LCS/LCSD)**	**Bias %Rec. of LCS**	**Lab**
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	NA	NA	NA	NA	NA	Field
Metals in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
ARSENIC, DISSOLVED (UG/L AS AS)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01000	5	5	70-130	20	80-120	CRWS
BARIUM, DISSOLVED (UG/L AS BA)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01005	1000	1	70-130	20	80-120	CRWS
CADMIUM, DISSOLVED (UG/L AS CD)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01025	0.1 for waters <50mg/L hardness ------- 0.3 for waters >50mg/L hardness	0.3	70-130	20	80-120	CRWS
CHROMIUM, DISSOLVED (UG/L AS CR)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01030	10	5	70-130	20	80-120	CRWS

Replaces Page 82 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.4 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DA) (continued)

Metals in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
COPPER, DISSOLVED (UG/L AS CU)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01040	1 for waters < 50mg/L hardness ------- 3 for waters >= 50mg/L hardness	1	70-130	20	80-120	CRWS
LEAD, DISSOLVED (UG/L AS PB)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01049	0.1 for waters < 85 mg/L hardness ------- 1 for waters >= 85 mg/L hardness	1	70-130	20	80-120	CRWS
NICKEL, DISSOLVED (UG/L AS NI)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01065	10	1	70-130	20	80-120	CRWS
SILVER, DISSOLVED (UG/L AS AG)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01075	0.5	0.3	70-130	20	80-120	CRWS
ZINC, DISSOLVED (UG/L AS ZN)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01090	5	5	70-130	20	80-120	CRWS
ALUMINUM, DISSOLVED (UG/L AS AL)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01106	200	50	70-130	20	80-120	CRWS
SELENIUM, DISSOLVED (UG/L AS SE)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01145	NA	5	70-130	20	80-120	CRWS

* Reporting to be consistent with SWQM guidance and based on measurement capability.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 23rd Edition, 2017.

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

Replaces Page 85 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.5 Measurement Performance Specifications for Trinity River Authority (continued)

Bacteriological Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Log Difference of Duplicates	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert®/Colilert®-18	31699	1	1	NA	0.50****	NA	CRWS

Conventional Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
ALKALINITY, TOTAL (MG/L AS CACO3)	mg/L	water	SM 2320 B	00410	20	20	NA	20	NA	CRWS
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	2	NA	NA	NA	CRWS
RESIDUE, VOLATILE NONFILTRABLE (MG/L)	mg/L	water	EPA 160.4	00535	5	2	NA	NA	NA	CRWS
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500-NH3 H	00610	0.1	0.02	70-130	20	80-120	CRWS
NITRITE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00615	0.05	0.05	70-130	20	80-120	CRWS
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.05	70-130	20	80-120	CRWS
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	EPA 351.2	00625	0.2	0.2	70-130	20	80-120	CRWS
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1 (Primary Method) SM 4500-P E (Backup Method)	00665	0.06	0.02	70-130	20	80-120	CRWS
CARBON, TOTAL ORGANIC, NPOC (TOC), MG/L	mg/L	water	SM 5310 C	00680	2	0.5	NA	NA	NA	CRWS
HARDNESS, TOTAL (MG/L AS CACO3)*****	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	CRWS
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00940	5	2	70-130	20	80-120	CRWS
SULFATE (MG/L AS SO4)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00945	5	2	70-130	20	80-120	CRWS
FLUORIDE, TOTAL (MG/L AS F)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00951	0.5	0.1	70-130	20	80-120	CRWS
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	µg/L	water	SM 10200 H	32211	3	3	NA	20	80-120	CRWS

Replaces Page 97 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.6 Measurement Performance Specifications for the City of Grand Prairie (continued)

Bacteriological Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Log Difference of Duplicates	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert®/ Colilert®-18	31699	1	1	NA	0.50***	NA	CRWS

Conventional Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
BIOCHEMICAL OXYGEN DEMAND (MG/L, 5 DAY - 20DEG C	mg/L	water	SM 5210 B	00310	2	2	NA	NA	NA	CRWS
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500-NH3 H	00610	0.1	0.02	70-130	20	80-120	CRWS
NITRITE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00615	0.05	0.05	70-130	20	80-120	CRWS
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.05	70-130	20	80-120	CRWS
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	EPA 351.2	00625	0.2	0.2	70-130	20	80-120	CRWS
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1 (Primary Method) SM 4500-P E (Backup Method)	00665	0.06	0.02	70-130	20	80-120	CRWS
HARDNESS, TOTAL (MG/L AS CACO3)****	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	CRWS
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00940	5	2	70-130	20	80-120	CRWS
SULFATE (MG/L AS SO4)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00945	5	2	70-130	20	80-120	CRWS
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	µg/L	water	SM 10200 H	32211	3	3	NA	20	80-120	CRWS
RESIDUE,TOTAL FILTRABLE (DRIED AT 180C) (MG/L)	mg/L	water	SM 2540 C	70300	10	10	NA	20	80-120	CRWS
ORTHOPHOSPHATE PHOSPHORUS,DISS,MG/L,FILTER >15MIN	mg/L	water	SM 4500-P F	70507	0.04	0.02	70-130	20	80-120	CRWS

Replaces Page 102 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.8 Measurement Performance Specifications for the City of Irving (continued)										
Bacteriological Parameters in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Log Difference of Duplicates**	**Bias %Rec. of LCS**	**Lab**
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert®/ Colilert®-18	31699	1	1	NA	0.50***	NA	CRWS
Conventional Parameters in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500-NH3 H	00610	0.1	0.02	70-130	20	80-120	CRWS
NITRITE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00615	0.05	0.05	70-130	20	80-120	CRWS
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.05	70-130	20	80-120	CRWS
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	EPA 351.2	00625	0.2	0.2	70-130	20	80-120	CRWS
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1 (Primary Method) SM 4500-P E (Backup Method)	00665	0.06	0.02	70-130	20	80-120	CRWS
HARDNESS, TOTAL (MG/L AS CACO3)****	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	CRWS
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	µg/L	water	SM 10200 H	32211	3	3	NA	20	80-120	CRWS
ORTHOPHOSPHATE PHOSPHORUS,DISS,MG/L,FILTER >15MIN	mg/L	water	SM 4500-P F	70507	0.04	0.02	70-130	20	80-120	CRWS
Metals in Water										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD)**	**Bias %Rec. of LCS**	**Lab**
CADMIUM, DISSOLVED (UG/L AS CD)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01025	0.1 for waters <50mg/L hardness ------- 0.3 for waters >50mg/L hardness	0.3	70-130	20	80-120	CRWS

Replaces Page 104 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.9 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DT)

Field Parameters										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD of LCS/LCSD)**	**Bias %Rec. of LCS**	**Lab**
TEMPERATURE, WATER (DEGREES CENTIGRADE)*	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TEMPERATURE, AIR (DEGREES CENTIGRADE)	DEG C	air	SM 2550 B and TCEQ SOP V1	00020	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)*	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE,FIELD (US/CM @ 25C)*	µs/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)*	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)*	s.u	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)**	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)**	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS**	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH**	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
Flow Parameters										
Parameter	**Units**	**Matrix**	**Method**	**Parameter Code**	**TCEQ AWRL**	**LOQ**	**LOQ Check Sample %Rec**	**Precision (RPD of LCS/LCSD)**	**Bias %Rec. of LCS**	**Lab**
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High, 6=Dry	NU	water	TCEQ SOP V1	01351	NA	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA	NA	NA	NA	NA	Field

Replaces Page 105 of the FY 2020-2021 Basin-Wide QAPP, Appendix A: Measurement Performance Specifications (Table A7.1-A7.11)

TABLE A7.9 Measurement Performance Specifications for the City of Dallas (Collecting Entity Code DT) (continued)

Bacteriological Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Log Difference of Duplicates	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert®/ Colilert®-18	31699	1	1	NA	0.50***	NA	CRWS
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert®	31699	1	1	NA	0.50***	NA	Pace-Dallas

* Reporting to be consistent with SWQM guidance and based on measurement capability.
** To be routinely reported when collecting data from perennial pools.
*** This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

References:
United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 23rd Edition, 2017.
TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

Appendix B Sampling Process Design and Monitoring Schedule (plan)

Sample Design Rationale FY 2021

The sample design is based on the legislative intent of CRP. Under the legislation, the Basin Planning Agencies have been tasked with providing data to characterize water quality conditions in support of the Texas Water Quality Integrated Report, and to identify significant long-term water quality trends. Based on Steering Committee input, achievable water quality objectives and priorities and the identification of water quality issues are used to develop work plans which are in accord with available resources. As part of the Steering Committee process, the TRA coordinates closely with the TCEQ and other participants to ensure a comprehensive water monitoring strategy within the watershed.

Changes from the FY 2020 Monitoring Schedule

The following changes were made for the FY 2021 Monitoring Schedule as a result of the FY 2020 Coordinated Monitoring Meeting.

- City of Arlington – no changes to station locations.
    - Comment fields for six stations have been updated with lat/longs of exact sample collection points. All are within 94 meters of the lat/long previously associated with the station ID. New comments field language listed below. These comments have been added to the CMS as a record to more accurately represent where Arlington is collecting the sample.
        - 10723 - Arlington Metals Only, sample taken on west side of bridge at 32.709363, -97.053578
        - 10719 - Arlington Metals And Nutrients, sample taken slightly NW at 32.764260, -97.062342
        - 10722 - Arlington Metals And Nutrients, sample taken about 50 meters east at 32.724998, -97.050098
        - 10791 - Arlington Metals Only, sample taken slightly west at 32.649188, -97.146144
        - 17191 - Arlington Metals And Nutrients, sample taken about 94 meters downstream at 32.731932, -97.169324
        - 17189 - Arlington Metals Only, sample taken about 88 meters downstream at 32.760434, -97.149754
- City of Dallas (Submitting Entity Code DA) – no changes.
- DFW Airport EAD – no changes.
- City of Dallas (Submitting Entity Code DT) – no changes.
- City of Fort Worth – no changes.
    - Staff have noted that they would like to move/add some sites in the near future. They are working on determining where new sites will be located.
- City of Grand Prairie – no changes.
- City of Irving – no changes.
- Lake Livingston Project
    - Station 20771 in Keechi Creek 0804H_01 has been added for 24-hour DO monitoring in response to TCEQ requests to address the Integrated Report.
    - Other notes: These are intended as a record of intent for future monitoring schedule updates and do not apply to the current monitoring schedule. This information is included here as a matter of record.
        - 24-hour DO monitoring at station 20771 will be conducted twice a year for 5 years.
- North Texas Municipal Water District – no changes.
- Tarrant Regional Water District – no changes.

- Trinity River Authority
    - Sampling frequencies for 24 hr DO and Flow at stations 22054 (Cedar Creek 0836B), 22055 (Grape Creek 0836C), and 22053 (Post Oak Creek 0836D) have been updated from "5" to "1". Only one more sample is needed to complete the two full years of diurnal sampling at these sites. Sampling will be complete after one more sample is conducted early in FY 2021 and will no longer be sampled for the remainder of FY 2021. These sites will not appear on the FY 2022 monitoring schedule.
    - Station 22096 (Big Bear Creek 0841D) has been added for a single event in FY 2021. Critical period Aquatic Life Monitoring was completed at this station in FY 2020. Index period sampling was not possible in FY 2020 and will be conducted in October 2020.
    - Aquatic Life Monitoring on Low Branch (station 22135 Segment 0838) has been added for FY 2021. This site was monitored for the Joe Pool Lake Watershed Protection Plan and was determined to be a good location for conducting an ALM.
    - Quarterly monitoring of conventionals has been added to station 13621 (Walnut Creek 0838C). Sampling at this station was previously conducted by TCEQ Region 4 from 2010 to 2012 then TRA took over sampling 2018. For June 2019 to May 2020, this site was monitored as part of the Joe Pool Lake WPP. Starting in FY 2021, TRA will bring this site back under CRP indefinitely.
    - Quarterly monitoring of conventionals, *E. coli*, and field parameters has been added for stations 11071, 11072, and 11073 in Joe Pool Lake (0838). Joe Pool Lake has no current data available for assessment in the integrated report. Sampling was conducted at these sites from June 2019 to May 2020 as part of the Joe Pool Lake WPP. Starting in FY 2021, TRA will bring these sites under CRP indefinitely.
    - Quarterly monitoring of conventionals, *E. coli*, flow, and field parameters has been added for stations 16434 (Mountain Creek 0838), 22133 (Bowman Branch 0838), 16433 (Hollings Branch 0838D), and 22134 (Soap Creek 0838E). Sampling was conducted at these sites from June 2019 to May 2020 as part of the Joe Pool Lake WPP. Additionally, these 4 sites and 13621 (Walnut Creek 0838C) were part of a pre-existing sampling program within TRA and these tributaries provide data on inputs into Joe Pool Lake. Starting in FY 2021, TRA will bring these sites under CRP indefinitely.
    - Quarterly monitoring of conventionals, *E. coli*, and field parameters has been added for stations 22234 and 16114 in Grapevine Lake (segment 0826) to address gaps in monitoring coverage. Station 22234 is a new station in AU 0826_07 that was added at the request of TCEQ to address the carryforward pH listing in this AU.
    - Quarterly monitoring of conventionals, *E. coli*, and field parameters has been added for stations 22235 and 14041 in Ray Roberts Lake (segment 0840) to address gaps in monitoring coverage. Station 22234 is a new station in AU 0840_08.
    - Quarterly monitoring of conventionals, *E. coli*, and field parameters has been added for stations 14002 and 17839 in Lewisville Lake (segment 0823) to address gaps in monitoring coverage.
    - Quarterly monitoring of conventionals, *E. coli*, and field parameters has been added for stations 11005, 11010, and 11016 in Lake Ray Hubbard (segment 0820) to address gaps in monitoring coverage.
    - TCEQ requests
        - 24-hour DO monitoring in Clear Fork above Strickland Creek 0833A_01 – Resources for diurnal monitoring are at capacity for FY 2021. Diurnals on Mountain Creek at stations 10815 (0841o) and 17681 (0841W) will be completed in FY 2021 and will free up some resources. TRA will plan to add a diurnal station on 0833A_01 in FY 2022.
    - Other notes: These are intended as a record of intent for future monitoring schedule updates and do not apply to the current monitoring schedule. This information is included here as a matter of record.
        - A site on Segment 0825 Denton Creek below Grapevine Lake (station 11034) was added by TRA for quarterly monitoring of *E. coli*, flow, and field parameters in FY 2020. This site will be sampled for at least 5 years (through

FY 2024) to address *E. coli* concerns. It is anticipated to be removed from the sampling schedule in FY 2025.

- A site in AU 0805_01 (site 10924) was added by TRA for quarterly monitoring of *E. coli*, conventionals, flow, and field parameters in FY 2020. This site will be sampled for at least 3 years (through FY 2022) to address nutrient concerns. It is anticipated to be removed from the sampling schedule in FY 2023.
- 21423 in segment 0841 was added by TRA in FY 2018 for quarterly monitoring of conventionals, *E. coli*, field and flow for five years (through FY 2022) in response to findings in the Integrated Report. This site will be removed in FY 2023.
- 17129 in segment 0806F was added by TRA in FY 2018 for quarterly monitoring of *E. coli*, field and flow for five years (through FY 2022) in response to findings in the Integrated Report. This site will be removed in FY 2023.
- Station 10815 in Segment 0841O (Mountain Creek downstream of Mountain Creek Lake) and station 17681 in Segment 0841W (Mountain Creek downstream of Joe Pool Lake) were added by TRA for diurnal monitoring 5 times a year for two years (FY 2020 and FY 2021) to address dissolved oxygen concerns identified by the Integrated Report. These sites will be removed in FY 2022.
- Sites upstream of the WWTPs on Red Oak Creek (Segment 0805A station 10842) and Ten Mile Creek (unclassified Segment in 0805 station 21287) were added by TRA to the monitoring schedule in FY 2020 for quarterly monitoring of *E. coli*, conventionals, flow, and field because they were not previously assessed. Sampling will take place for a minimum of 5 years (through FY 2024). Continuation of sampling after FY 2024 will be reassessed at a later date.
- 10756 in segment 0820B will remain on the monitoring schedule until further notice. TRA is monitoring this station. It is providing data that is useful for the Watershed Characterization and future Watershed Protection Plan for Rowlett Creek.
- 13686 in segment 0815A was added by TRA in FY 2017 for quarterly monitoring of conventionals, *E. coli*, flow, and field parameters in response to findings in the Integrated Report. This site was originally planned to be removed in FY 2020. However, due to stakeholder input, it has been determined that this site will remain in the monitoring schedule until further input. This site is providing data that is useful for the Richland-Chambers Watershed Protection Plan that is funded by a third party.
- Stations 22234 and 16112 in Grapevine Lake (segment 0826) were added in FY 2021 to address gaps in monitoring coverage. 22234 was added at the request of TCEQ to address the carryforward pH listing in the 2020 IR. Monitoring at these sites will continue for approximately 5 years and will be reassessed for continued monitoring no later than FY 2026.
- Stations 22235 and 14041 in Ray Roberts Lake (segment 0840), 14002 and 17839 in Lake Lewisville (segment 0823), and 11005, 11010, and 11016 in Lake Ray Hubbard (segment 0820) were added in FY 2021 to address gaps in monitoring coverage. Monitoring at these sites will continue for approximately 5 years and will be reassessed for continued monitoring no later than FY 2026.

Monitoring Sites for FY 2021

The sample design for SWQM is shown in Table B1.1 below. Individual parameters represented by each parameter group and WBPA are specified in the Tables of Appendix A.

Table B1.1 Sample Design and Schedule, FY 2021

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Conventional	Bacteria	Flow	Field	Comment
CITY OF ARLINGTON														
UNNAMED TRIBUTARY OF COTTONWOOD CREEK AT NORTH BOUND DIRECTION OF FORUM DRIVE IN ARLINGTON	10723	32.7093	-97.0533	0841F	04	TR	AR	RT	4		12	12	12	Arlington Metals Only, sample taken on west side of bridge at 32.709363, -97.053578
FISH CREEK SOUTH BRANCH 433 METERS UPSTREAM OF SH 360 SOUTH BOUND SERVICE ROAD IN NATURAL CHANNEL IMMEDIATELY UPSTREAM OF CONCRETE LINED CHANNEL	21530	32.65853889	-97.06668611	0841K	04	TR	AR	RT	4	4	12	12	12	Arlington Metals And Nutrients
JOHNSON CREEK AT SH 360 IN ARLINGTON	10719	32.764137	-97.06218	0841L	04	TR	AR	RT	4	4	12	12	12	Arlington Metals And Nutrients, sample taken slightly NW at 32.764260, -97.062342
KEE BRANCH AT WEST PLEASANT RIDGE ROAD IN ARLINGTON	10792	32.682449	-97.177895	0841M	04	TR	AR	RT	4		12	12	12	Arlington Metals Only
COTTONWOOD CREEK AT TIMBERLAKE DRIVE IN ARLINGTON	10722	32.724987	-97.050636	0841P	04	TR	AR	RT	4	4	12	12	12	Arlington Metals And Nutrients, sample taken about 50 meters east at 32.724998, -97.050098
RUSH CREEK IMMEDIATELY DOWNSTREAM OF WEST SUBLETT ROAD IN ARLINGTON	10791	32.649166	-97.146042	0841R	04	TR	AR	RT	4		12	12	12	Arlington Metals Only, sample taken slightly west at 32.649188, -97.146144
RUSH CREEK 46 METERS UPSTREAM OF SH 180 IN ARLINGTON	17191	32.731155	-97.169624	0841R	04	TR	AR	RT	4	4	12	12	12	Arlington Metals And Nutrients, sample taken about 94 meters downstream at 32.731932, -97.169324
VILLAGE CREEK IMMEDIATELY UPSTREAM OF IH 30 IN ARLINGTON	17189	32.759666	-97.149696	0841T	04	TR	AR	RT	4		12	12	12	Arlington Metals Only, sample taken about 88 meters downstream at 32.760434, -97.149754

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Field	Comment
CITY OF DALLAS (SUBMITTING ENTITY DA)											
LAKE RAY HUBBARD 1.79 KM E AND 193 METERS S OF INTERSECT GLORIA RD AND E FORK RD NEAR DALLAS WATER INTAKE STRUCTURE AT WEST END OF DAM (H1)	10998	32.808056	-96.519997	0820	04	TR	DA	RT	2	12	Dallas Lakes
LAKE RAY HUBBARD AT I 30 BRIDGE 766 METERS NORTH AND 1.26 KM EAST OF INTERSECTION OF CHAHA ROAD AND I 30 (H3)	16809	32.871223	-96.529671	0820	04	TR	DA	RT	2	12	Dallas Lakes
LAKE RAY HUBBARD EAST FORK ARM AT US 66 494 M NORTH AND 1.83 KM EAST OF INTERSECTION OF US 66 AND SCENIC DRIVE WEST OF ROCKWALL (H4)	16829	32.924973	-96.489586	0820	04	TR	DA	RT	2	12	Dallas Lakes
LAKE RAY HUBBARD MID LAKE 1.13 KM SOUTH AND 165 METERS EAST OF INTERSECTION OF DALROCK ROAD AND COOKE DRIVE (H2)	17829	32.864555	-96.518402	0820	04	TR	DA	RT	2	12	Dallas Lakes
LAKE RAY HUBBARD/EAST FORK TRINITY RIVER 200 METERS DOWNSTREAM OF LAKE LAVON OUTFALL AT COLLIN CR 384 (V1)	17846	33.029854	-96.481148	0820	04	TR	DA	RT	2	12	Dallas Lakes
ROWLETT CREEK AT FIREWHEEL PARKWAY NEAR ROWLETT (H6)	21478	32.93138056	-96.5921778	0820B	04	TR	DA	RT	2	12	Dallas Lakes
MUDDY CREEK AT LIBERTY GROVE ROAD 0.65KM UPSTREAM OF LAKE RAY HUBBARD (H5)	16828	32.929474	-96.544975	0820C	04	TR	DA	RT	2	12	Dallas Lakes
ELM FORK TRINITY RIVER AT LEWISVILLE LAKE SPILLWAY 3 MI NORTHEAST OF LEWISVILLE (E1)	15252	33.069778	-96.964195	0822	04	TR	DA	RT	2	12	Dallas Lakes
ELM FORK TRINITY RIVER AT INTAKE OF DALLAS WATER UTILITIES ELM FK TREATMENT PLANT 738 M DOWNSTREAM OF CONFLUENCE WITH DENTON CK IN CARROLLTON (E2)	16438	32.971931	-96.936546	0822	04	TR	DA	RT	2	12	Dallas Lakes
ELM FORK TRINITY RIVER IMMEDIATELY DOWNSTREAM OF HEBRON PARKWAY SOUTHEAST OF LEWISVILLE TR255 (E4)	18358	33.012974	-96.950645	0822	04	TR	DA	RT	2	12	Dallas Lakes
SKI LAKE NEAR BARCHMAN TREATMENT PLANT INTAKE 543 METERS SOUTH AND 99 METERS WEST OF INTERSECTION OF SH 482 AND I 35 EAST (E3)	17849	32.849083	-96.886505	0822D	04	TR	DA	RT	2	12	Dallas Lakes
LEWISVILLE LAKE ELM FORK ARM 170 METERS NORTH AND 1.58 KM EAST OF INTERSECTION OF HUNDLEY AND MARINA DRIVE (L5)	11026	33.125	-97	0823	04	TR	DA	RT	2	12	Dallas Lakes
LEWISVILLE LAKE AT I 35E IN THE HICKORY CREEK ARM 681 METERS NORTH OF INTERSECTION OF I 35E AND COPPERAS BRANCH ROAD (L7)	11027	33.101917	-97.027451	0823	04	TR	DA	RT	2	12	Dallas Lakes
LAKE LEWISVILLE IN STEWART CREEK ARM AT FM 423 BRIDGE 389 METERS NORTH OF INTERSECTION OF OVERLAKE DRIVE AND FM 423/MAIN STREET (L4)	16808	33.109444	-96.891525	0823	04	TR	DA	RT	2	12	Dallas Lakes
LEWISVILLE LAKE NEAR LITTLE ELM CREEK ARM 1.82 KM SOUTH AND 2.85 KM WEST OF INTERSECTION OF HIDDEN COVE AND HACKBERRY CREEK PARK (L6)	17830	33.115002	-96.964745	0823	04	TR	DA	RT	2	12	Dallas Lakes

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Field	Comment
CITY OF DALLAS (SUBMITTING ENTITY DA)											
CLEAR CREEK AT I 35 WEST OF US 377 APPROX 24.7 KM UPSTREAM OF LEWISVILLE LAKE SOUTH OF SANGER (L1)	16827	33.337849	-97.181305	0823C	04	TR	DA	RT	2	12	Dallas Lakes
Doe Branch at US 380 near Prosper (L3)	20291	33.2194	-96.891234	0823D	04	TR	DA	RT	2	12	Dallas Lakes
ELM FORK TRINITY RIVER IMMEDIATELY DOWNSTREAM OF FM 2071 SOUTH OF GAINESVILLE (R1)	11031	33.582363	-97.128349	0824	04	TR	DA	RT	2	12	Dallas Lakes
DENTON CREEK 41 METERS UPSTREAM OF DENTON TAP ROAD 2 MI NORTH OF COPPELL (E5)	14244	32.98114	-96.992889	0825	04	TR	DA	RT	2	12	Dallas Lakes
GRAPEVINE LAKE USGS SITE BC 753 METERS SOUTH AND 484 METERS WEST OF INTERSECTION OF WEST MURREL PARK ROAD AND SIMMONS ROAD (G5)	13875	32.991665	-97.093887	0826	04	TR	DA	RT	2	12	Dallas Lakes
GRAPEVINE LAKE AT DALLAS WATER UTILITIES INTAKE 349 METERS NORTH AND 328 METERS EAST OF INTERSECTION OF SILVERSIDE DR AND PARK ROAD 7 (G4)	17827	32.96236	-97.064667	0826	04	TR	DA	RT	2	12	Dallas Lakes
GRAPEVINE LAKE AT LITTLE PETES MARINA 392 METERS NORTH AND 136 METERS EAST OF INTERSECTION OF THOUSAND OAKS COURT AND CARMEL COURT (G3)	17828	32.991001	-97.135506	0826	04	TR	DA	RT	2	12	Dallas Lakes
DENTON CREEK AT FM 156 2.4 MILES NORTH OF JUSTIN (G1)	14483	33.119038	-97.291092	0826A	04	TR	DA	RT	2	12	Dallas Lakes
DENTON CREEK AT FM 407 1.2 MILES EAST OF JUSTIN (G2)	14484	33.089958	-97.275352	0826A	04	TR	DA	RT	2	12	Dallas Lakes
ELM FORK TRINITY RIVER 336 METERS DOWNSTREAM OF RAY ROBERTS DAM 5.7 MI SW OF PILOT POINT 3.3 MI UPSTREAM FROM BRAY BRANCH (L2)	13619	33.350277	-97.046944	0839	04	TR	DA	RT	2	12	Dallas Lakes
RAY ROBERTS LAKE ISLE DU BOIS CREEK ARM WEST OF JORDAN PARK 2.84 KM N AND 599 M W OF INTERSECTION OF ISLE DU BOIS PARK RD AND QUAIL RUN (R5)	11076	33.405556	-97.031944	0840	04	TR	DA	RT	2	12	Dallas Lakes
RAY ROBERTS LAKE BUCK CREEK COVE AT US377 BRIDGE 1.06 KM N AND 428 M E OF INTERSECTION OF US 377 AND EMBERSON CHAPEL RD SW OF SHERMAN (R3)	16822	33.447445	-96.923027	0840	04	TR	DA	RT	2	12	Dallas Lakes
RAY ROBERTS LAKE IN RANGE CREEK COVE AT US 377 BRIDGE 600 M SOUTH AND 57 M WEST OF INTERSECTION OF PATTON RD AND US 377 SW OF SHERMAN (R2)	16823	33.504833	-96.908165	0840	04	TR	DA	RT	2	12	Dallas Lakes
RAY ROBERTS LAKE AT FM 3002 377 METERS NORTH AND 1.25 KM EAST OF INTERSECTION OF FM 3002 AND MANN ROAD 13 MI SOUTH OF GAINESVILLE (R4)	16824	33.435223	-97.109116	0840	04	TR	DA	RT	2	12	Dallas Lakes
RAY ROBERTS LAKE AT DALLAS WATER UTILITIES INTAKE W SIDE OF DAM 1.02 KM N AND 232 METERS E OF INTERSECTION OF BURGER RD AND FM 2153 (R6)	17834	33.353252	-97.061668	0840	04	TR	DA	RT	2	12	Dallas Lakes

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Organics Water	Conventional	Bacteria	Flow	Field	Comment
DFW AIRPORT EAD															
GRAPEVINE CREEK APPROX 225 METERS UPSTREAM OF N ROYAL LANE AND 25 METERS UPSTREAM OF RAILROAD TRACKS IN IRVING	21632	32.93792	-97.02211	0822B	04	TR	DF	RT	4	4	4	4	4	4	
HACKBERRY CREEK AT CABELL ROAD IN IRVING	17172	32.9021	-96.99236	0822C	04	TR	DF	RT	4	4	4	4	4	4	
SOUTH FORK HACKBERRY CREEK AT VALLEY VIEW LANE IN IRVING	21634	32.88592	-96.99937	0822C	04	TR	DF	RT	4	4	4	4	4	4	
COTTONWOOD BRANCH AT KELLER GRAPEVINE ROAD IN IRVING	22089	32.941778	-97.042169	0825	04	TR	DF	RT	4	4	4	4	4	4	
BEAR CREEK AT COUNTY LINE ROAD 487 M SOUTH OF SH 183 IN IRVING	18315	32.83262	-97.03036	0841B	04	TR	DF	RT	4	4	4	4	4	4	
BIG BEAR CREEK IMMEDIATELY UPSTREAM OF EULESS-GRAPEVINE ROAD IN GRAPEVINE EAST OF HWY 360	17089	32.89533	-97.0825	0841D	04	TR	DF	RT	4	4	4	4	4	4	

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Bacteria	Flow	Field	Comment
CITY OF DALLAS (SUBMITTING ENTITY DT)												
UPPER TRINITY RIVER 190 METERS DOWNSTREAM OF SOUTH CENTRAL EXPRESSWAY/SH 310 AND 105 METERS UPSTREAM OF RAILROAD BRIDGE	20444	32.72831	-96.756138	0805	04	TR	DT	RT	4	4	4	Dallas Trinity
UPPER TRINITY RIVER AT SYLVAN AVENUE IN DALLAS	20933	32.789892	-96.835175	0805	04	TR	DT	RT	4	4	4	Dallas Trinity
UPPER TRINITY RIVER AT SANTA FE AVENUE IN DALLAS UNDER DART RAIL BRIDGE	20934	32.753011	-96.791644	0805	04	TR	DT	RT	4	4	4	Dallas Trinity

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Bacteria	Flow	Field	Comment
CITY OF FORT WORTH												
WEST FORK TRINITY RIVER 54 METERS DOWNSTREAM OF BEACH STREET IN FORT WORTH	10938	32.752251	-97.288864	0806	04	TR	FW	RT	4	12	12	Fort Worth E. coli
WEST FORK TRINITY RIVER 260 METERS DOWNSTREAM OF HANDLEY EDERVILLE ROAD 0.55KM UPSTREAM OF IH 820 IN FORT WORTH	16120	32.781368	-97.218445	0806	04	TR	FW	RT	4		12	Fort Worth E. coli
WEST FORK TRINITY RIVER IMMEDIATELY DOWNSTREAM OF 4TH STREET EAST OF FORT WORTH	17368	32.762909	-97.311752	0806	04	TR	FW	RT	4		12	Fort Worth E. coli
WEST FORK TRINITY RIVER AT BOAT RAMP IMMEDIATELY UPSTREAM OF JACKSBORO HIGHWAY/SH 199 IN FORT WORTH	21558	32.76499722	-97.35133889	0806	04	TR	FW	RT	4		12	Fort Worth E. coli
MARINE CREEK AT NE 23rd STREET CONCRETE APRON APPROX 25 METERS WEST OF THE MULE ALLEY AND NE 23RD STREET INTERSECTION	21801	32.785875	-97.345394	0806D	04	TR	FW	RT	4	12	12	Fort Worth E. coli
SYCAMORE CREEK AT WESTERN END OF PAVEMENT OF SCOTT AVENUE 179 M UPSTREAM OF IH 30 IN EAST FORT WORTH	17369	32.747547	-97.294724	0806E	04	TR	FW	RT	4	12	12	Fort Worth E. coli
CLEAR FORK TRINITY RIVER MID CHANNEL 85 M UPSTREAM OF SPILLWAY AND IMMEDIATELY UPSTREAM OF WEST ROSEDALE STREET IN FORT WORTH	18456	32.732239	-97.358627	0829	04	TR	FW	RT	4	12	12	Fort Worth E. coli

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Conventional	Bacteria	Flow	Field	Comment
CITY OF GRAND PRAIRIE														
LOWER WEST FORK TRINITY RIVER AT ROY ORR BOULEVARD IN GRAND PRAIRIE (6)	17669	32.788303	-97.031555	0841	04	TR	GP	RT	1	4	12		12	Grand Prairie Routine
COTTONWOOD CREEK IMMEDIATELY UPSTREAM OF SOUTHWEST 3RD STREET IN GRAND PRAIRIE (11)	17674	32.726097	-97.007256	0841F	04	TR	GP	RT	1	4	12		12	Grand Prairie Routine added back at request of TCEQ TMDL Team
SOUTH FORK COTTONWOOD CREEK AT ROBINSON ROAD IN GRAND PRAIRIE (9)	17676	32.720261	-97.019615	0841F	04	TR	GP	RT	1	4	12	12	12	Grand Prairie Routine
FISH CREEK SOUTH BRANCH AT GREAT SOUTHWEST PARKWAY/LAKERIDGE PARKWAY IN GRAND PRAIRIE (28)	15294	32.659238	-97.041967	0841K	04	TR	GP	RT	1	4	12	12	12	Grand Prairie Routine
FISH CREEK AT BELTLINE ROAD/FM1382 APPROXIMATELY 205 METERS SOUTH OF THE INTERSECTION OF SE 14TH STREET (15)	17679	32.692223	-96.985306	0841K	04	TR	GP	RT	1	4	12		12	Grand Prairie Routine added back at request of TCEQ TMDL Team
KIRBY CREEK AT CORN VALLEY ROAD IN GRAND PRAIRIE (12)	17675	32.690693	-97.003082	0841N	04	TR	GP	RT	1	4	12	12	12	Grand Prairie Routine
CROCKETT BRANCH COTTONWOOD CREEK 179 METERS DOWNSTREAM OF EAST GRAND PRAIRIE ROAD IN GRAND PRAIRIE (22)	17683	32.740971	-97.000641	0841V	04	TR	GP	RT	1	4	12	12	12	Grand Prairie Routine

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Conventional	Bacteria	Flow	Field	Comment
CITY OF IRVING														
COTTONWOOD BRANCH AT NORTH STORY ROAD IN IRVING	17166	32.86483	-96.977318	0822A	04	TR	IR	RT			6	6	6	Irving Bacteria
COTTONWOOD BRANCH 71 METERS UPSTREAM OF NORTH MACARTHUR BOULEVARD IN IRVING	17167	32.872833	-96.959915	0822A	04	TR	IR	RT	2	6	6		6	Irving Routine
Grapevine Creek at North MacArthur Blvd. 3.5 KM Upstream of the confluence with the Elm Fork Trinity River	20311	32.950283	-96.958123	0822B	04	TR	IR	RT			6	6	6	Irving Bacteria
HACKBERRY CREEK AT COLWELL BOULEVARD IN IRVING	17170	32.884403	-96.946869	0822C	04	TR	IR	RT	2	6	6	6	6	Irving Routine
BEAR CREEK 37 METERS DOWNSTREAM OF COUNTY LINE ROAD SOUTH OF SR 183 IN IRVING	10869	32.832539	-97.029999	0841B	04	TR	IR	RT	2	6	6	6	6	Irving Routine
DELAWARE CREEK IMMEDIATELY DOWNSTREAM OF EAST OAKDALE ROAD IN IRVING	17178	32.793777	-96.936165	0841H	04	TR	IR	RT	2	6	6	6	6	Irving Routine
DRY BRANCH IMMEDIATELY UPSTREAM OF SOUTH BELTLINE ROAD IN IRVING	17173	32.803371	-96.994675	0841I	04	TR	IR	RT			6	6	6	Irving Bacteria
ESTELLE CREEK 79 METERS UPSTREAM OF WEST PIONEER DRIVE IN IRVING	17174	32.832279	-97.020607	0841J	04	TR	IR	RT			6		6	Irving Bacteria
WEST IRVING BRANCH AT WEST VILBIG STREET IN IRVING	17179	32.79752	-96.954971	0841U	04	TR	IR	RT			6	6	6	Irving Bacteria

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
LAKE LIVINGSTON PROJECT - IN BASIN															
OLD RIVER AT FM 1409 SOUTHWEST OF WINFREE	18360	29.87471	-94.828621	0801B	12	TR	LL	RT			2			2	Trinity Bay
COASTAL WATER AUTHORITY CANAL/LYNCHBURG CANAL 533 METERS UPSTREAM OF FM 1409 3.6KM DOWNSTREAM OF CONFLUENCE WITH TRINITY RIVER SOUTH OF LIBERTY	16148	29.951757	-94.838341	0801D	12	TR	LL	RT		2	2	2	2	2	Lake Livingston Routine
TRINITY RIVER AT SH 105 NEAR MOSS HILL TRA #32	10895	30.277779	-94.798615	0802	12	TR	LL	RT						4	Lake Livingston Routine
TRINITY RIVER AT US 59 SOUTH OF GOODRICH TRA #30	10897	30.570995	-94.949577	0802	10	TR	LL	RT		2	4	4	4	4	Lake Livingston Routine
TRINITY RIVER AT FM 3278 775 METERS DOWNSTREAM OF LAKE LIVINGSTON AND 8MI EAST OF COLDSPRING	16998	30.625584	-95.01078	0802	10	TR	LL	RT			12	12	12	12	Trinity Bay
LONG KING CREEK 80 METERS UPSTREAM OF FM 1988 WEST OF GOODRICH TRA #36	10689	30.604485	-94.957909	0802B	10	TR	LL	RT			2	2	2	2	Lake Livingston Routine
MENARD CREEK AT SH 146 SOUTHEAST OF LIVINGSTON TRA #37	10688	30.481331	-94.779564	0802D	12	TR	LL	RT			2	2	2	2	Lake Livingston Routine
BIG CREEK AT US 59 NORTH 1.5 MI NE OF SHEPHERD 11.6 MI UPSTREAM FROM MOUTH	13685	30.516701	-94.984818	0802E	10	TR	LL	RT			2	2	2	2	Lake Livingston Routine
LAKE LIVINGSTON IN MAIN POOL NEAR DAM AT TRA BOUY #2 4.25 KM WEST OF INTERSECTION OF FM 1988 AND FM 3128	10899	30.65	-95.041664	0803	10	TR	LL	RT		2	4	4		4	Lake Livingston Routine
LK LIVINGSTON 1.8 KM S AND 496 METERS E OF INTERSECTION OF FM 356 AND DAVIS RDIN MAIN CHANNEL NEAR MOUTH OF WHITE ROCK CREEK BAY TRA 6	10913	30.9	-95.275002	0803	10	TR	LL	RT		2	4	4		4	Lake Livingston Routine
LAKE LIVINGSTON AT SH 19 SOUTH OF TRINITY USGS SITE JC	10914	30.859722	-95.398331	0803	12	TR	LL	RT		2	12	12		12	Lake Livingston Routine
LAKE LIVINGSTON HEADWATERS AT SH 21 NORTHEAST OF MID WAY TRA 97	10917	31.077578	-95.699661	0803	10	TR	LL	RT		2	12	12		12	Lake Livingston Routine
LAKE LIVINGSTON AT US 190 IN KICKAPOO CREEK BAY CHANNEL EAST OF ONALASKA TRA #12	21562	30.814066	-95.082569	0803	10	TR	LL	RT		2	4	4		4	Lake Livingston Routine

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
LAKE LIVINGSTON PROJECT - IN BASIN															
LAKE LIVINGSTON MAIN BODY AT US 190 WEST OF ONALASKA	21563	30.799954	-95.156136	0803	10	TR	LL	RT		2	4	4		4	Lake Livingston Routine
HARMON CREEK 509 METERS UPSTREAM FROM INTERSECTION WITH OTTER RD EAST OF FM 980 AND 7.6 MILES NORTHEAST OF HUNTSVILLE	10698	30.820097	-95.486473	0803A	12	TR	LL	RT			2	2	2	2	Lake Livingston Routine
WHITE ROCK CREEK AT SH 94 NORTHEAST OF TRINITY TRA #21	10696	30.968204	-95.333075	0803B	10	TR	LL	RT			2	2		2	Lake Livingston Routine
NELSON CREEK AT FM 3478 NEAR MOUNT OLIVE TRA #20	10700	30.894581	-95.514488	0803E	12	TR	LL	RT		2	2	2	2	2	Lake Livingston Routine
BEDIAS CREEK IMMEDIATELY DOWNSTREAM OF US 75 SOUTHEAST OF MADISONVILLE	10703	30.884617	-95.777756	0803F	09	TR	LL	RT		2	2	2	2	2	Lake Livingston Routine
TRINITY RIVER 304 METERS UPSTREAM OF SH 7 11.9 MI WEST OF CROCKETT	13690	31.338333	-95.656113	0804	10	TR	LL	RT		2	12	12	12	12	Lake Livingston Routine
UPPER KEECHI CREEK IMMEDIATELY UPSTREAM OF FM 542 IN LEON COUNTY	20771	31.405663	-95.764603	0804H	09	TR	LL	RT	2				2		Diurnal
LAKE LIVINGSTON PROJECT - OUT OF BASIN															
CEDAR BAYOU ABOVE TIDAL 20 M DOWNSTREAM OF US 90 NE OF CROSBY	11120	29.972281	-94.98544	0902	12	TR	LL	RT			2		2	2	Trinity Bay, Out of Basin
DOUBLE BAYOU WEST FORK AT FM 2936 SOUTHEAST OF ANAHUAC	18361	29.73061	-94.660294	2422B	12	TR	LL	RT			2			2	Trinity Bay, Out of Basin
DOUBLE BAYOU EAST FORK AT FM 562, SE OF ANAHUAC	10658	29.683161	-94.6224	2422D	12	TR	LL	RT			2			2	Trinity Bay, Out of Basin

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Conventional	Bacteria	Flow	Field	Comment
NORTH TEXAS MUNICIPAL WATER DISTRICT														
LAKE LAVON EAST FORK ARM 273 METERS NORTH AND 1.04 KM WEST OF INTERSECTION OF SUNNY LANE AND LAVON LAKE ROAD (RAW 3)	11021	33.055557	-96.521667	0821	04	TR	NM	RT	12	12	12		12	
LAKE LAVON PILOT GROVE ARM 207 METERS NORTH AND 1.82 KM WEST OF INTERSECTION OF CR 761 AND CR 546 (6)	11022	33.083332	-96.470833	0821	04	TR	NM	RT	12	12	12		12	
LAVON LAKE USGS SITE AC 1.01 KM NORTH AND 927 METERS EAST OF INTERSECTION OF SH 78 AND SKYVIEW DRIVE NEAR DAM (7)	15685	33.034168	-96.480278	0821	04	TR	NM	RT	12	12	12		12	
LAVON LAKE USGS SITE EC 1.69 KM EAST OF INTERSECTION OF BROCKDALE PARK AND COLLIN CR 967 (9)	15686	33.080002	-96.532219	0821	04	TR	NM	RT	12	12	12		12	
LAVON LAKE USGS SITE BC 194 METERS NORTH AND 719 METERS WEST OF INTERSECTION OF COLLIN CR 1047 AND COLLIN CR 1055 (2)	15687	33.115002	-96.458885	0821	04	TR	NM	RT	12	12	12		12	
LAKE LAVON WEST OF EASTFORK PARK AND EAST OF INTAKE #3 467 METERS N AND 456 METERS W OF INTERSECTION OF SKYVIEW DR AND PRIVATE RD 5313 (8)	17584	33.041248	-96.505646	0821	04	TR	NM	RT	12	12	12		12	
LAKE LAVON AT HWY 380 AT THE CONFLUENCE OF SISTER GROVE CREEK ARM AND PILOT GROVE CREEK ARM APPROX 250 METERS EAST OF THE INTERSECTION OF FM 559 AND HWY 380	21718	33.16227778	-96.42938889	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 1
LAKE LAVON EAST FORK ARM 130 METERS NORTH OF EAST LUCAS ROAD AND 1.6 KILOMETERS WEST AND 340 METERS SOUTH OF THE INTERSECTION OF EAST LUCAS ROAD AND OF FM 546	21719	33.09858333	-96.53227778	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 10
LAKE LAVON EAST FORK ARM 1.37 KILOMETERS NORTH AND 2.33 KILOMETERS WEST OF THE INTERSECTION OF EAST LUCAS ROAD AND FM 546	21720	33.11403611	-96.54010833	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 11
LAKE LAVON EAST FORK ARM 1.20 KILOMETERS NORTH AND 1.72 KILOMETERS WEST OF THE INTERSECTION OF EAST LUCAS ROAD AND FM 546	21721	33.11258333	-96.53330556	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 12

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	Metals Water	Conventional	Bacteria	Flow	Field	Comment
NORTH TEXAS MUNICIPAL WATER DISTRICT														
LAKE LAVON EAST FORK ARM 970 METERS NORTH AND 2.10 KILOMETERS WEST OF THE INTERSECTION OF EAST LUCAS ROAD AND FM 546	21722	33.11044444	-96.53755556	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 13
LAKE LAVON EAST FORK ARM 430 METERS NORTH AND 1.81 KILOMETERS WEST OF THE INTERSECTION OF EAST LUCAS ROAD AND FM 546	21723	33.10555556	-96.53427778	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 14
LAKE LAVON AT THE MOUTH OF SISTER GROVE CREEK ARM 735 METERS NORTH AND 860 METERS WEST OF THE INTERSECTION OF HWY 380 AND FM 559	21724	33.16958333	-96.44108333	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 15
LAKE LAVON AT THE MOUTH OF PILOT GROVE CREEK ARM 320 METERS NORTH AND 890 METERS EAST OF THE INTERSECTION OF HWY 380 AND FM 559	21725	33.16597222	-96.42241667	0821	04	TR	NM	RT	12	12	12		12	NTMWD Site 16
PILOT GROVE CREEK AT FM 2756 UPSTREAM OF LAKE LAVON	21717	33.21431667	-96.40240556	0821A	04	TR	NM	RT	12	12	12	12	12	NTMWD Site Indian
SISTER GROVE CREEK DOWNSTREAM FM 1377/MONTE CARLO BLVD 1.6 K EAST OF INTERSECTION OF 6TH STREET AND FM 1377 NEAR PRINCETON TX	21396	33.193639	-96.476161	0821B	04	TR	NM	RT	12	12	12	12	12	

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
TEHUACANA CREEK 20 METERS DOWNSTREAM OF SH 75 SOUTHEAST OF STREETMAN	10705	31.848511	-96.28997	0804F	09	TR	TD	RT		2	2	2	2	2	TRWD Tribs
WEST FORK TRINITY RIVER 54 METERS DOWNSTREAM OF BEACH STREET IN FORT WORTH	10938	32.752251	-97.288864	0806	04	TR	TD	RT		4	4	4	4	4	4th Street/Beach Street Dam
WEST FORK TRINITY RIVER IMMEDIATELY DOWNSTREAM OF 4TH STREET EAST OF FORT WORTH	17368	32.762909	-97.311752	0806	04	TR	TD	RT		4	4	4		4	4th Street/Beach Street Dam
LAKE WORTH 546 METERS SOUTH AND 319 METERS EAST OF INTERSECTION OF QUEBEC STREET AND CAHOBA DRIVE MID LAKE NEAR DAM	10942	32.792557	-97.420326	0807	04	TR	TD	BS	2						TRWD Diurnal
LAKE WORTH 546 METERS SOUTH AND 319 METERS EAST OF INTERSECTION OF QUEBEC STREET AND CAHOBA DRIVE MID LAKE NEAR DAM	10942	32.792557	-97.420326	0807	04	TR	TD	RT		5	5	4		5	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
LAKE WORTH MID CHANNEL 35 M DOWNSTREAM OF MOUTH OF WEST FORK OF THE TRINITY RIVER	15163	32.848886	-97.47565	0807	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE WORTH AT MOUTH OF SILVER CREEK 957 METERS SOUTH AND 1.08 KM WEST OF INTERSECTION OF SILVER CREEK ROAD AND HERON DRIVE	15166	32.800804	-97.480804	0807	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE WORTH MID CHANNEL SOUTH OF SH 199 472 METERS SOUTH AND 298 METERS WEST OF INTERSECTION OF WATERCRESS DRIVE AND SH 199	15167	32.818138	-97.452477	0807	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals, and Bacteria also collected below surface depth (0.3m) at this site.
EAGLE MOUNTAIN RESERVOIR 250 METERS NORTH OF EAST EDGE OF DAM	10944	32.876389	-97.460831	0809	04	TR	TD	BS	2						TRWD Diurnal
EAGLE MOUNTAIN RESERVOIR 250 METERS NORTH OF EAST EDGE OF DAM	10944	32.876389	-97.460831	0809	04	TR	TD	RT		5	5	4		5	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
EAGLE MOUNTAIN RESERVOIR 1.5 KM W AND 308 METERS S OF INTERSECTION BETWEEN VILLAGE RD AND EAGLE MOUNTAIN PLANT ROAD NEAR TEXAS ELECTRIC	10952	32.904999	-97.489998	0809	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
EAGLE MOUNTAIN RESERVOIR 645 METERS WEST AND 485 METERS SOUTH OF INTERSECTION OF OAKWOOD LANE AND PEDEN ROAD NEAR COLE SUBDIVISION	10956	32.937222	-97.508888	0809	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
EAGLE MOUNTAIN RESERVOIR 112 METERS NORTH AND 818 METERS EAST OF INTERSECTION OF MILLER RD AND GANTT ROAD NEAR INDIAN CREEK COVE	10960	32.965279	-97.508057	0809	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
EAGLE MOUNTAIN RESERVOIR 187 METERS NORTH AND 788 METERS EAST OF INTERSECTION OF BRIAR ROAD AND LIBERTY SCHOOL ROAD NEAR NEWARK BEACH	10964	32.994446	-97.513336	0809	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
WALNUT CREEK AT FM 1542	10853	32.945606	-97.58297	0809A	04	TR	TD	RT			12	12	12	12	TRWD Tribs
ASH CREEK 56 METERS DOWNSTREAM OF SH 199 NORTHBOUND SERVICE ROAD	10854	32.887127	-97.537987	0809B	04	TR	TD	RT			12	12	12	12	TRWD Tribs
DOSIER CREEK AT FM 1220	10855	32.892914	-97.435539	0809C	04	TR	TD	RT			6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
DERRETT CREEK AT CENTRAL AVENUE IN NEWARK EAST OF EAGLE MOUNTAIN LAKE APPROX 1.2KM UPSTREAM OF EAGLE MOUNTAIN LAKE	10858	33.003918	-97.490997	0809D	04	TR	TD	RT			6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
WEST FORK TRINITY RIVER AT WISE CR 4757/VAN METER BRIDGE	10967	33.034752	-97.534157	0810	04	TR	TD	RT				4		4	West Fork E. Coli
WEST FORK TRINITY RIVER 30 METERS DOWNSTREAM OF FM 730 NE OF BOYD	10969	33.085747	-97.55835	0810	04	TR	TD	RT			12	12	12	12	TRWD Tribs
WEST FORK TRINITY RIVER 30 METERS DOWNSTREAM OF FM 730 NE OF BOYD	10969	33.085747	-97.55835	0810	04	TR	TD	RT				4	4	4	West Fork E. Coli
WEST FORK TRINITY RIVER 281 METERS DOWNSTREAM OF CONFLUENCE WITH MARTIN BRANCH 2.2 MI SE OF PARADISE	14246	33.15155	-97.655525	0810	04	TR	TD	RT				4		4	West Fork E. Coli
WEST FORT TRINITY RIVER IMMEDIATELY DOWNSTREAM OF US 380 1.8 MI SW OF BRIDGEPORT	14904	33.201962	-97.80278	0810	04	TR	TD	RT				4		4	West Fork E. Coli
WEST FORK TRINITY RIVER AT BOBO BRIDGE ON WISE CR 4668 SOUTH OF BOYD	17844	33.051849	-97.557846	0810	04	TR	TD	RT				4		4	West Fork E. Coli

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
WEST FORK TRINITY RIVER BELOW BRIDGEPORT RESERVOIR AT SH 114 APPROX 333 METERS SOUTH AND 647 METERS EAST OF THE INTERSECTION OF SH 114 AND INDUSTRIAL BOULEVARD IN WISE COUNTY	20840	33.191792	-97.743428	0810	04	TR	TD	RT				4		4	West Fork E. Coli
BIG SANDY CREEK 42 METERS DOWNSTREAM OF US 380 4.0 MI EAST OF BRIDGEPORT	15688	33.231667	-97.694672	0810A	04	TR	TD	RT				4	4	4	West Fork E. Coli
GARRETT/RUSH CREEK AT SH 114 NORTH OF EAGLE MOUNTAIN RESERVOIR NW OF BOYD	16767	33.105278	-97.655167	0810B	04	TR	TD	RT				4		4	West Fork E. Coli
MARTIN BRANCH CENTER CREEK AT FM 51 EAST OF PARADISE	17848	33.149624	-97.636108	0810C	04	TR	TD	RT				4		4	West Fork E. Coli
SALT CREEK AT SH 114 NORTH OF EAGLE MOUNTAIN RESERVOIR NW OF BOYD	16766	33.098415	-97.650002	0810D	04	TR	TD	RT				4		4	West Fork E. Coli
LAKE BRIDGEPORT 178 METERS WEST AND 187 METERS SOUTH OF NORTH EDGE OF DAM	10970	33.221668	-97.834	0811	04	TR	TD	BS	2						TRWD Diurnal
LAKE BRIDGEPORT 178 METERS WEST AND 187 METERS SOUTH OF NORTH EDGE OF DAM	10970	33.221668	-97.834	0811	04	TR	TD	RT		5	5	4		5	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
LAKE BRIDGEPORT AT NORTH END OF MAIN BODY OF RESERVOIR 10 METERS NORTH AND 1.21 KM WEST OF INTERSECTION OF VALLEY STREET AND FM 2952	15164	33.249001	-97.844673	0811	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE BRIDGEPORT WEST FORK CHANNEL 27 M WEST OF STEELE ISLAND 1.07 KM N AND 400 M W OF INTERSECTION OF EL LAGO RD AND BETTY DR	16761	33.238861	-97.876694	0811	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE BRIDGEPORT MAIN CHANNEL 0.8KM EAST OF RATTLESNAKE ISLAND 636 M N AND 180 M W OF INTERSECTION OF E BAY DR AND PRIVATE RD 1505	16762	33.18853	-97.846474	0811	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
WILLOW CREEK AT WISE COUNTY ROAD 2210 SOUTH OF RUNAWAY BAY	22057	33.114683	-97.865992	0811	04	TR	TD	RT			6	6	6	6	
BIG CREEK AT FM 1810 UPSTREAM OF LAKE BRIDGEPORT	16768	33.307804	-97.918999	0811A	03	TR	TD	RT			12	12		12	TRWD Tribs

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
BEANS CREEK AT FM 1156 5.2KM UPSTREAM OF BRIDGEPORT LAKE EAST OF WIZARD WELLS	16737	33.199898	-97.967606	0811B	03	TR	TD	RT			12	12		12	TRWD Tribs
WEST FORK TRINITY RIVER 30 METERS DOWNSTREAM OF SH 59 NORTHEAST OF JACKSBORO	10972	33.293251	-98.078674	0812	03	TR	TD	RT			12	12	12	12	TRWD Tribs
CHAMBERS CREEK AT FM 1126	10977	32.197498	-96.521385	0814	04	TR	TD	RT		12	12	12	12	12	TRWD Tribs
CHAMBERS CREEK AT ELLIS COUNTY ROAD 55 EAST OF ITALY	22058	32.164711	-96.761964	0814	04	TR	TD	RT		6	6	6	6	6	
CEDAR CREEK RESERVOIR 12 METERS NORTH AND 586 METERS EAST OF INTERSECTION OF ASHBY LANE AND BURLEY LOOP	16747	32.24361	-96.137222	0818	05	TR	TD	BS	2						TRWD Diurnal
CEDAR CREEK RESERVOIR 12 METERS NORTH AND 586 METERS EAST OF INTERSECTION OF ASHBY LANE AND BURLEY LOOP	16747	32.24361	-96.137222	0818	05	TR	TD	RT		12	12	4		12	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK RESERVOIR 710 M W AND 1.01 M W OF INTERSECTION OF WOODLAWN WAY AND SUNSET BLVD AT CONFLUENCE OF CANEY CK AND CLEAR CK COVES	16748	32.201668	-96.068886	0818	05	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK RESERVOIR 1.01 KM SOUTH AND 1.34 KM WEST OF INTERSECTION OF CAROLYNN ROAD AND OAKVIEW TRAIL	16749	32.227501	-96.095833	0818	05	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK RESERVOIR 1.42 KM NORTH AND 1.37 KM EAST OF INTERSECTION OF NOB HILL ROAD AND SH 334	16753	32.338055	-96.181114	0818	05	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK RESERVOIR NORTH MID LAKE 800 M NORTH AND 2.59 KM EAST OF INTERSECTION OF KAUFMAN CR 4042 AND KAUFMAN CR 4043	16772	32.376946	-96.191109	0818	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK RESERVOIR 1.07 KM EAST AND 40 METERS NORTH OF THE INNER CIRCLE UPPER CHANNEL NEAR INTERSECTION OF HEATHER WOODS DRIVE AND LEISA PLACE IN THE CITY OF TOOL	21427	32.28922	-96.15267	0818	05	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
CEDAR CREEK AT FM 1836 NORTHEAST OF KEMP	21559	32.5036	-96.1128028	0818B	04	TR	TD	RT		6	6	6	6	12	TRWD Tribs-Field for 6 events will consist of flow severity only

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
KINGS CREEK AT SH34 UPSTREAM OF CEDAR CREEK RESERVOIR SOUTHWEST OF KAUFMAN 3.44 KM SOUTHWEST ON SH34 FROM US175	21000	32.556444	-96.338936	0818C	04	TR	TD	RT		6	6	6	6	12	TRWD Tribs-Field for 6 events will consist of flow severity only
LACY FORK CREEK 25 METERS UPSTREAM OF FM 90 5.9KM UPSTREAM OF CEDAR CREEK RESERVOIR	16777	32.424774	-96.109184	0818D	04	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
PRAIRIE CREEK AT KAUFMAN CR 4006/RODEO ROAD 5.7 KM UPSTREAM OF CEDAR CREEK RESERVOIR WEST OF MABANK	16775	32.369438	-96.123589	0818E	04	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
CLEAR CREEK AT US 175 4.3 KM UPSTREAM OF CEDAR CREEK RESERVOIR	16755	32.28854	-95.97271	0818F	05	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
NORTH TWIN CREEK AT US 175 3.3KM UPSTREAM OF CEDAR CREEK RESERVOIR	16756	32.34296	-96.061699	0818G	05	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
SOUTH TWIN CREEK AT US 175 5.0KM UPSTREAM OF CEDAR CREEK RESERVOIR	16757	32.322121	-96.028931	0818H	05	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
CANEY CREEK AT US 175 8.4KM UPSTREAM OF CEDAR CREEK RESERVOIR NORTHWEST OF ATHENS	16758	32.239117	-95.901909	0818I	05	TR	TD	RT		6	6	6		12	TRWD Tribs-Field for 6 events will consist of flow severity only
LAKE ARLINGTON MID LAKE 177 METERS NORTH AND 865 METERS WEST OF INTERSECTION OF ARBOR VALLEY DRIVE AND PERKINS ROAD	11042	32.702778	-97.208336	0828	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE ARLINGTON USGS SITE FC 570 METERS EAST OF INTERSECTION OF KAY DRIVE AND KALTENBRUN ROAD	13897	32.678055	-97.229446	0828	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LAKE ARLINGTON USGS SITE EC 254 METERS SOUTH AND 493 METERS EAST OF INTERSECTION OF CRAVENS ROAD AND WILBARGER STREET	13899	32.695278	-97.222778	0828	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
LK ARLINGTON USGS SITE AC ID 324304097113601 LOCATION MATCHES SITE MAP 518 M N AND 507 M W INTERSECT OF LK ARLINGTON BLVD AND GREEN OAK	13904	32.717777	-97.193336	0828	04	TR	TD	BS	2						TRWD Diurnal
LK ARLINGTON USGS SITE AC ID 324304097113601 LOCATION MATCHES SITE MAP 518 M N AND 507 M W INTERSECT OF LK ARLINGTON BLVD AND GREEN OAK	13904	32.717777	-97.193336	0828	04	TR	TD	RT		5	5	4		5	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
VILLAGE CREEK IMMEDIATELY	10786	32.603279	-97.264702	0828A	04	TR	TD	RT		12	12	12	12	12	TRWD Tribs

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
DOWNSTREAM OF RENDON ROAD SW OF ARLINGTON															
BENBROOK LAKE USGS SITE CR 92 METERS NORTH AND 1.27 KM EAST OF INTERSECTION OF PENINSULA ROAD AND PLOVER ROAD	13832	32.607777	-97.464165	0830	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
BENBROOK LAKE EAST END OF DAM 285 METERS SOUTH AND 332 METERS WEST OF INTERSECTION OF PECAN VALLEY DRIVE AND LAKESIDE DRIVE	15151	32.649471	-97.451225	0830	04	TR	TD	BS	2						TRWD Diurnal
BENBROOK LAKE EAST END OF DAM 285 METERS SOUTH AND 332 METERS WEST OF INTERSECTION OF PECAN VALLEY DRIVE AND LAKESIDE DRIVE	15151	32.649471	-97.451225	0830	04	TR	TD	RT		5	5	4		5	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
BENBROOK LAKE 1.36 KM NORTH AND 223 METERS WEST OF INTERSECTION OF ST FRANCIS VILLAGE RD AND ST ANTHONY DR EAST SIDE IN MAIN CHANNEL	15156	32.628113	-97.456642	0830	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
BENBROOK LAKE EAST OF BOAT RAMP AT HOLIDAY PARK IN MAIN CHANNEL 1.21 KM N AND 58 M E OF INTERSECTION OF PENINSULA RD AND BEAR CREEK DR	15158	32.618168	-97.488525	0830	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
ROCK CREEK AT FM 1187 3.7KM UPSTREAM OF BENBROOK LAKE	16725	32.569553	-97.449356	0830A	04	TR	TD	RT			12			12	TRWD Tribs
BEAR CREEK AT FM 1187 NEAR BENBROOK	13624	32.593933	-97.513367	0830B	04	TR	TD	RT			12		12	12	TRWD Tribs
CLEAR FORK TRINITY RIVER AT KELLY ROAD 8.7KM UPSTREAM OF US 377 SOUTH OF ALEDO	16414	32.653404	-97.586647	0831	04	TR	TD	RT			12		12	12	TRWD Tribs
RICHLAND-CHAMBERS RESERVOIR RICHLAND CREEK ARM MID LAKE 2.24 KM SOUTH AND 276 METERS EAST OF INTERSECTION OF PETTY RD AND SE 2230 RD	11068	31.973555	-96.256134	0836	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
RICHLAND-CHAMBERS RESERVOIR AT NORTH END OF DAM 332 METERS SOUTH AND 555 METERS WEST OF INTERSECTION OF US 287 AND RR 488	15168	31.96875	-96.096642	0836	09	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
RICHLAND-CHAMBERS RESERVOIR 1.95 KM NORTH AND 2.26 KM WEST OF INTERSECTION OF SE 3190 ROAD AND OLD HIGHWAY 287	15169	31.974388	-96.191505	0836	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TARRANT REGIONAL WATER DISTRICT - IN BASIN															
RICHLAND-CHAMBERS RESERVOIR CHAMBERS CREEK ARM NEAR TCWCID 1 PUMP STATION 570 M S AND 1.16 KM W OF INTERSECT OF SE 3240 AND SE 3250	15170	32.041168	-96.207497	0836	04	TR	TD	BS	2						TRWD Diurnal
RICHLAND-CHAMBERS RESERVOIR CHAMBERS CREEK ARM NEAR TCWCID 1 PUMP STATION 570 M S AND 1.16 KM W OF INTERSECT OF SE 3240 AND SE 3250	15170	32.041168	-96.207497	0836	04	TR	TD	RT		12	12	4		12	TRWD Routine Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.
RICHLAND-CHAMBERS RESERVOIR IN UPPER END OF RICHLAND CREEK ARM 2.01 KM S AND 150 METERS E OF INTERSECTION OF NAVARRO SLAB AND SE 1095	15172	31.935972	-96.354721	0836	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
RICHLAND-CHAMBERS RESERVOIR UPPER END OF CHAMBERS CREEK ARM 2.52 KM NORTH AND 329 METERS WEST OF INTERSECTION OF WICHITA TRL AND FM 637	15199	32.077473	-96.340698	0836	04	TR	TD	RT			5	4		5	TRWD Routine - Conventionals and Bacteria also collected below surface depth (0.3m) at this site.
RICHLAND CREEK AT SW 0030 RD UPSTREAM OF RICHLAND-CHAMBERS RESERVOIR	16721	31.967112	-96.475029	0836	04	TR	TD	RT		12	12	12		12	TRWD Tribs
POST OAK CREEK 109 METERS DOWNSTREAM OF POWELL PIKE EAST OF CORSICANA	17847	32.097092	-96.408447	0836D	04	TR	TD	RT		12	12	12	12	12	TRWD Tribs
TARRANT REGIONAL WATER DISTRICT - OUT OF BASIN															
Lake Palestine in Blackburn Bay approximately 0.56 km northeast of the end of Private Road 7010	22056	32.067267	-95.439144	0605	05	TR	TD	RT		5	5	5		5	Out of Basin Intake - Conventionals, Metals in Water, and Bacteria also collected below surface depth (0.3m) at this site.

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Aquatic Habitat	Benthics	Nekton	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TRINITY RIVER AUTHORITY																		
TRINITY RIVER IMMEDIATELY DOWNSTREAM OF US 79 NORTHEAST OF OAKWOOD	10919	31.648333	-95.789566	0804	05	TR	TR	RT					2	4	4	4	4	TRA Routine
TRINITY RIVER AT SH 31 IN TRINIDAD	10922	32.1478	-96.102554	0804	04	TR	TR	RT					2	4	4	4	4	TRA Routine
TOWN CREEK 73 METERS UPSTREAM OF FM 645 SOUTHWEST OF PALESTINE	10706	31.722422	-95.758377	0804L	05	TR	TR	RT						4	4	4	4	TRA Routine
TRINITY RIVER 24 METERS DOWNSTREAM OF FM 85 WEST OF SEVEN POINTS	10924	32.316387	-96.359169	0805	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
TRINITY RIVER 50 METERS DOWNSTREAM OF SH 34 NORTHEAST OF ENNIS	10925	32.426666	-96.462502	0805	04	TR	TR	RT					2	4	4	4	4	TRA Routine
TRINITY RIVER AT SOUTH LOOP SH 12 SOUTH OF DALLAS	10934	32.707363	-96.735703	0805	04	TR	TR	RT					2	4	4	4	4	TRA Routine
TRINITY RIVER 46 METERS UPSTREAM OF N WESTMORELAND ROAD IN DALLAS	10937	32.797981	-96.874466	0805	04	TR	TR	RT					2	4	4	4	4	TRA Routine
TEN MILE CREEK 30 METERS UPSTREAM OF PARKINSON RD AND THE TRA TMC WWTP OUTFALL ABOVE THE MIXING ZONE	21287	32.563721	-96.624651	0805	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
RED OAK CREEK 111 METERS DOWNSTREAM OF SHAWNEE ROAD	10842	32.493694	-96.807503	0805A	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
LITTLE FOSSIL CREEK 43 METERS DOWNSTREAM OF THOMAS ROAD IN HALTOM CITY	17129	32.790394	-97.261841	0806F	04	TR	TR	RT							4	4	4	Targeted Monitoring
BARDWELL RESERVOIR 1.91 KM EAST AND 787 METERS NORTH OF INTERSECTION OF BARDWELL DAM RD AND FM 985 MID LAKE NEAR DAM USGS SITE AC	10979	32.252777	-96.64167	0815	04	TR	TR	RT						4	4		4	TRA Routine
WAXAHACHIE CREEK AT GELZENDANER ROAD	13686	32.30735	-96.738716	0815A	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
LAKE WAXAHACHIE 474 METERS NORTH AND 143 METERS EAST OF INTERSECTION OF OLD HOWARD LANE AND PENN ROAD MID LAKE NEAR DAM	10980	32.33889	-96.804169	0816	04	TR	TR	RT						4	4		4	TRA Routine
LAKE RAY HUBBARD ROWLETT CREEK ARM 523 METERS SOUTH AND 374 METERS WEST OF INTERSECTION OF THORNHILL WAY AND ROWLETT ROAD	11010	32.872223	-96.573608	0820	04	TR	TR	RT						4	4		4	Targeted Monitoring
LAKE RAY HUBBARD MUDDY CREEK ARM 104 METERS SOUTH AND 241 METERS WEST OF INTERSECTION OF GARNER ROAD AND C A ROAN DRIVE	11016	32.885834	-96.542778	0820	04	TR	TR	RT						4	4		4	Targeted Monitoring

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Aquatic Habitat	Benthics	Nekton	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TRINITY RIVER AUTHORITY																		
LAKE RAY HUBBARD EAST FORK ARM UPSTREAM SQUABBLE CREEK 50 METERS N AND 1.91 KM WEST OF INTERSECTION OF FM 552 AND PROMENADE PL	11005	32.966667	-96.5	0820	04	TR	TR	RT						4	4		4	Targeted Monitoring
ROWLETT CREEK 45 METERS DOWNSTREAM OF BEN DAVIS/DAMASCUS RD RIVER KM 8.5	10756	32.959103	-96.611092	0820B	04	TR	TR	RT						4	4	4	4	TRA Routine
Elm Fork Trinity River at Wildwood Drive-TomBraniff Drive in Dallas	20287	32.856	-96.9161	0822	04	TR	TR	RT					2	4	4	4	4	TRA Routine
LEWISVILLE LAKE USGS SITE EC 362 METERS NORTH AND 536 METERS WEST OF INTERSECTION OF MAIN STREET AND WEST PARK STREET	14002	33.166389	-96.948059	0823	04	TR	TR	RT						4	4		4	Targeted Monitoring
LEWISVILLE LAKE MID LAKE NEAR PECAN CREEK ARM 366 METERS SOUTH AND 1.24 KM EAST OF INTERSECTION OF EAST MCKINNEY STREET AND CAMP COPASS	17839	33.18111	-97.026665	0823	04	TR	TR	RT						4	4		4	Targeted Monitoring
DENTON CREEK IMMEDIATELY DOWNSTREAM OF SH 121 SOUTH OF LEWISVILLE	11034	32.987087	-97.012497	0825	04	TR	TR	RT							4	4	4	Targeted Monitoring
GRAPEVINE LAKE UPSTREAM END MID LAKE 1.37 KM NORTH AND 1.18 KM EAST OF INTERSECTION OF WHITE CHAPEL ROAD AND BOB JONES ROAD	22234	33.01038	-97.143988	0826	04	TR	TR	RT						4	4		4	Targeted Monitoring
GRAPEVINE LAKE MID LAKE NORTH OF OAK GROVE PARK 1.26 KM NORTH AND 269 METERS EAST OF INTERSECTION OF MESQUITE BEND AND PARK ROADRIDGE	16112	32.98111	-97.078613	0826	04	TR	TR	RT						4	4		4	Targeted Monitoring
WHITE ROCK CREEK AT I-635 NORTH SERVICE ROAD IMMEDIATELY WEST OF PARK CENTRAL DRIVE	20289	32.924783	-96.781467	0827A	04	TR	TR	RT					2	4	4	4	4	TRA Routine
CEDAR CREEK AT FM 637 SOUTHEAST OF CORSICANA	22054	32.049119	-96.319439	0836B	04	TR	TR	RT	1							1		Targeted Monitoring
GRAPE CREEK AT NAVARRO COUNTY ROAD SE CR 1080 SOUTHEAST OF CORSICANA	22055	31.969181	-96.379872	0836C	04	TR	TR	RT	1							1		Targeted Monitoring
POST OAK CREEK AT NAVARRO COUNTY ROAD CRSE 0010 EAST OF CORSICANA	22053	32.09082	-96.407472	0836D	04	TR	TR	RT	1							1		Targeted Monitoring
JOE POOL LAKE MOUNTAIN CREEK ARM AT LAKE RIDGE PKWY/MANSFIELD ROAD 251 M N AND 1.19 KM W OF INTERSECTION OF ANDERSON RD AND LK RIDGE USGS SITE DC 323503097012201	11071	32.584167	-97.023056	0838	04	TR	TR	RT						4	4		4	Targeted Monitoring

Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Aquatic Habitat	Benthics	Nekton	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TRINITY RIVER AUTHORITY																		
JOE POOL LAKE WALNUT CREEK ARM AT LAKE RIDGE PARKWAY 1.43 KM NORTH AND 503 M WEST OF INTERSECTION OF LAKE RIDGE PKWY AND HANGER LOWE RD	11072	32.61972	-97.040001	0838	04	TR	TR	RT						4	4		4	Targeted Monitoring
JOE POOL LAKE MID LAKE AT DAM 48 METERS SOUTH AND 2.24 KM WEST OF INTERSECTION OF MANSFIELD ROAD AND FM 1382	11073	32.640278	-96.996666	0838	04	TR	TR	RT						4	4		4	Targeted Monitoring
MOUNTAIN CREEK AT US287 1.6KM NORTHWEST OF INTERSECTION OF US 287 AND FM 661	16434	32.512783	-97.067558	0838	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
BOWMAN BRANCH AT SOUTH SH 360 IN THE CITY OF GRANDE PRAIRE IN TARRANT COUNTY	22133	32.623383	-97.071337	0838	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
LOW BRANCH AT SOUTH HOLLAND ROAD EAST OF THE CITY OF MANSFIELD IN TARRANT COUNTY	22135	32.566644	-97.06613	0838	04	TR	TR	BS	2	2	2	2				2	2	ALM
WALNUT CREEK AT MATLOCK ROAD 2.6 MI NORTHEAST OF MANSFIELD	13621	32.58086	-97.102135	0838C	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
HOLLINGS BRANCH AT TANGLE RIDGE ROAD 1KM UPSTREAM OF CONFLUENCE OF HOLLINGS BRANCH WITH JOE POOL LAKE	16433	32.560001	-97.022781	0838D	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
SOAP CREEK 1.1 KILOMETERS UPSTREAM OF THE CONFLUENCE WITH MOUNTAIN CREEK IN ELLIS COUNTY	22134	32.525396	-97.052778	0838E	04	TR	TR	RT						4	4	4	4	Targeted Monitoring
RAY ROBERTS LAKE USGS SITE BC 444 METERS NORTH AND 2.21 KM EAST OF INTERSECTION OF FM 1190 AND JONES ROAD	14041	33.38361	-97.084999	0840	04	TR	TR	RT						4	4		4	Targeted Monitoring
RAY ROBERTS LAKE UPPER PORTION OF JORDAN CREEK ARM 1.87 KM SOUTH AND 2.11 KM EAST OF INTERSECTION OF BLOOMFIELD ROAD AND FM 372	22235	33.433075	-96.992531	0840	04	TR	TR	RT						4	4		4	Targeted Monitoring
LOWER WEST FORK TRINITY RIVER AT BELT LINE ROAD IN GRAND PRAIRIE	11081	32.762913	-96.995033	0841	04	TR	TR	RT					2	4	4	4	4	TRA Routine
WEST FORK TRINITY RIVER AT RIVER LEGACY PARK FOOTBRIDGE 557 METERS UPSTREAM OF NORTH COLLINS STREET	21423	32.788415	-97.10061	0841	04	TR	TR	RT						4	4	4	4	Targeted Monitoring

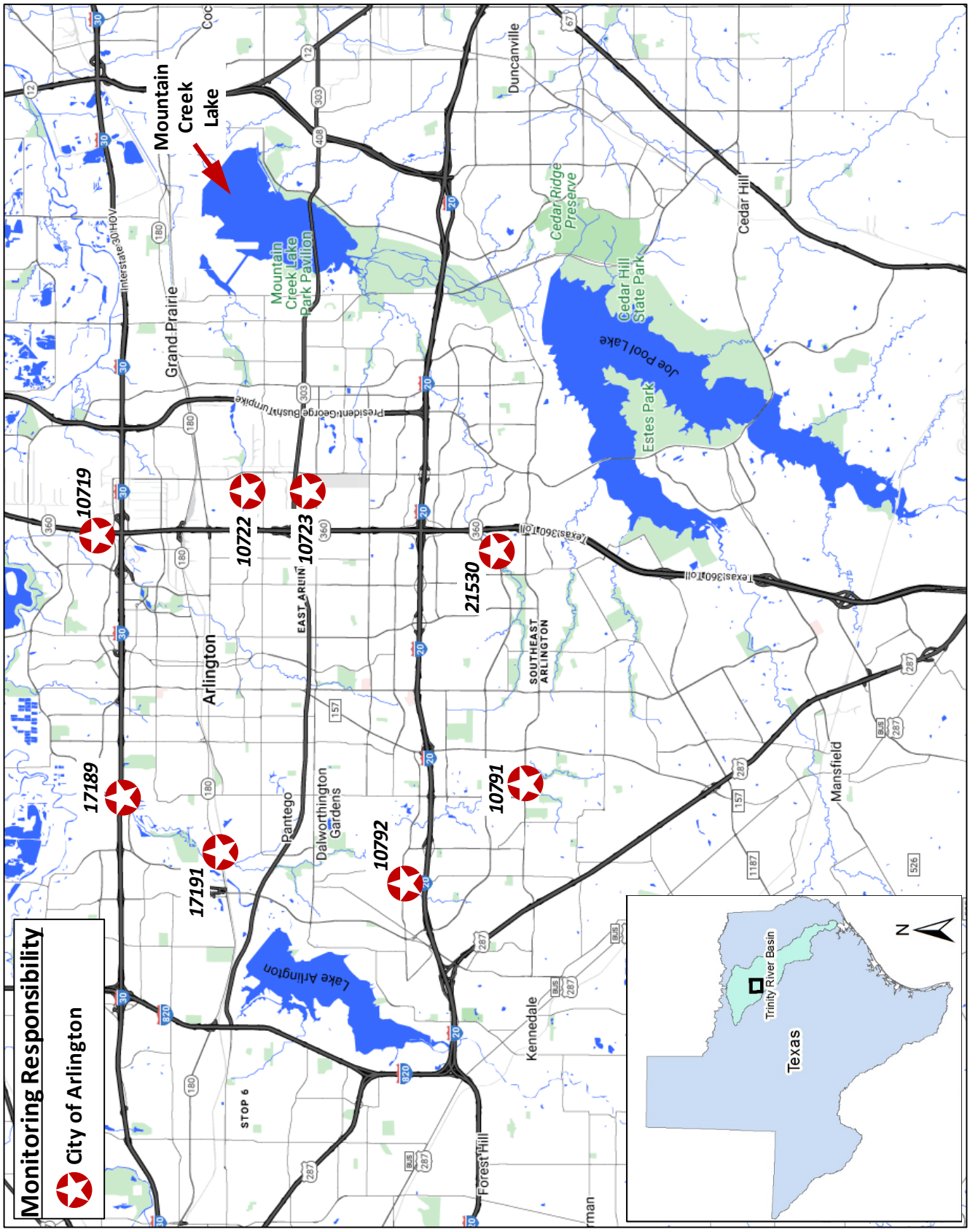
Site Description	Site ID	Latitude	Longitude	Waterbody ID	Region	SE	CE	MT	24-hr DO	Aquatic Habitat	Benthics	Nekton	Metals Water	Conventional	Bacteria	Flow	Field	Comment
TRINITY RIVER AUTHORITY																		
BIG BEAR CREEK AT PARR PARK FOOTBRIDGE IN GRAPEVINE APPROXIMATELY 90 METERS SOUTH OF OLD MILL RUN DEAD END	22096	32.907972	-97.116689	0841D	04	TR	TR	RT	1	1	1	1				1	1	ALM (Event will be the final Index Period sample that was not able to be conducted in FY 2020)
MOUNTAIN CREEK IMMEDIATELY DOWNSTREAM OF SINGLETON BLVD IN GRAND PRAIRIE	10815	32.778774	-96.926323	0841O	04	TR	TR	RT	5							5		Targeted Monitoring
MOUNTAIN CREEK IMMEDIATELY UPSTREAM OF EAST CAMP WISDOM ROAD IN GRAND PRAIRIE	17681	32.652027	-96.990051	0841W	04	TR	TR	RT	5							5		Targeted Monitoring

Appendix C: Station Location Maps

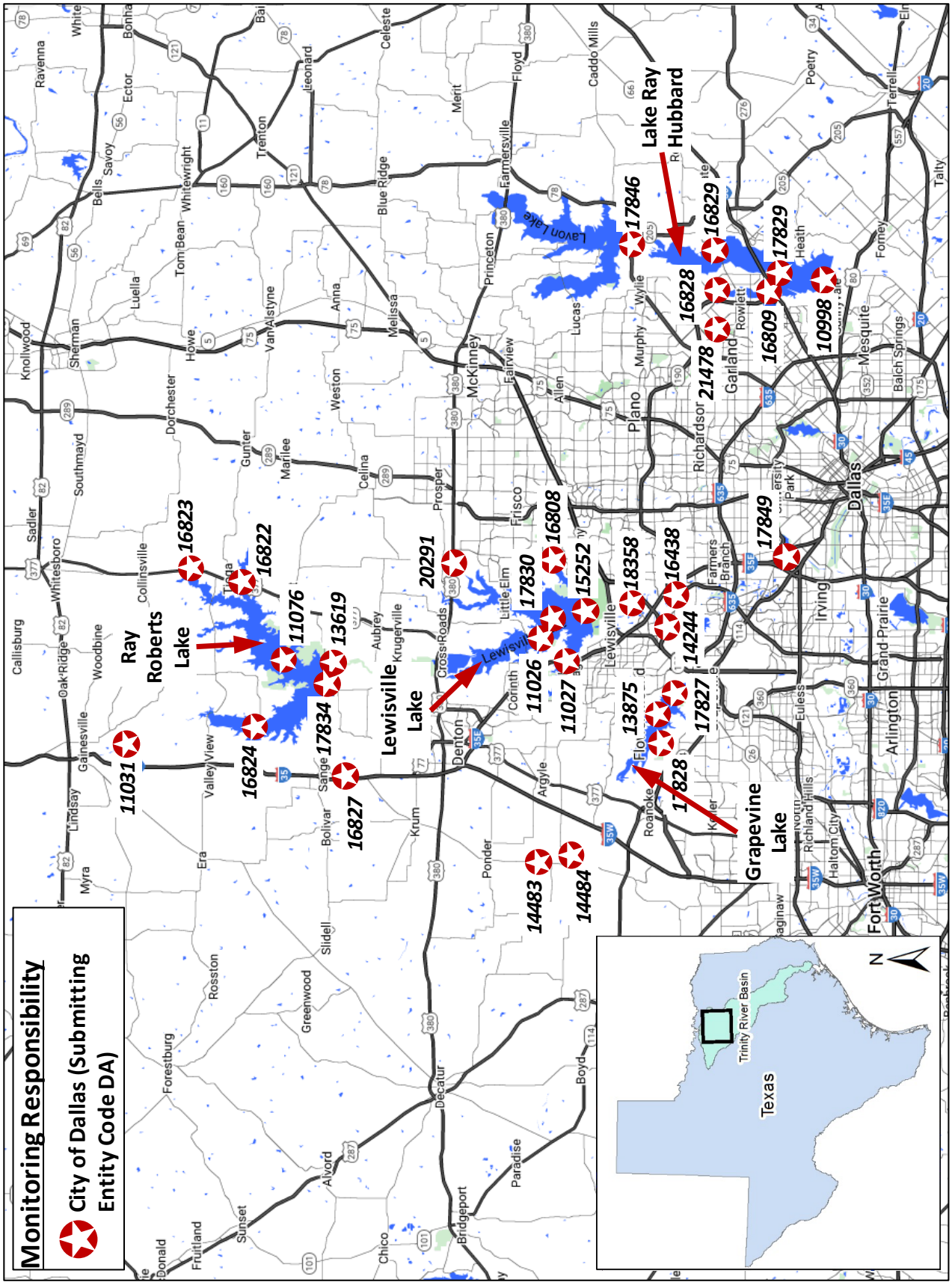
Station Location Maps

Maps of stations monitored by the TRA and WBPAs are provided below. The maps were generated by the TRA. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact Angela Kilpatrick at kilpatricka@trinityra.org.

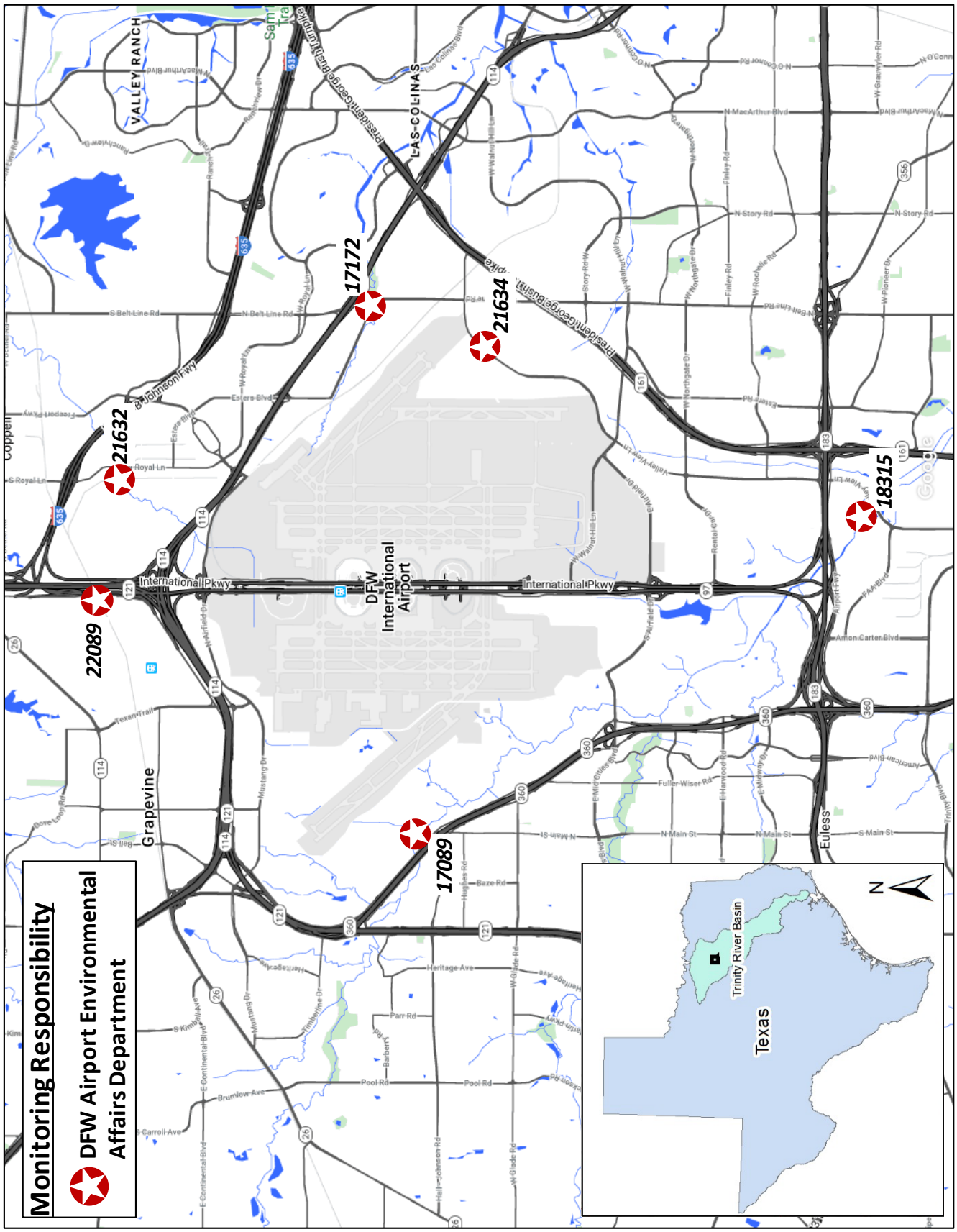
City of Arlington



City of Dallas (Submitting Entity Code DA)



DFW Airport Environmental Affairs Department



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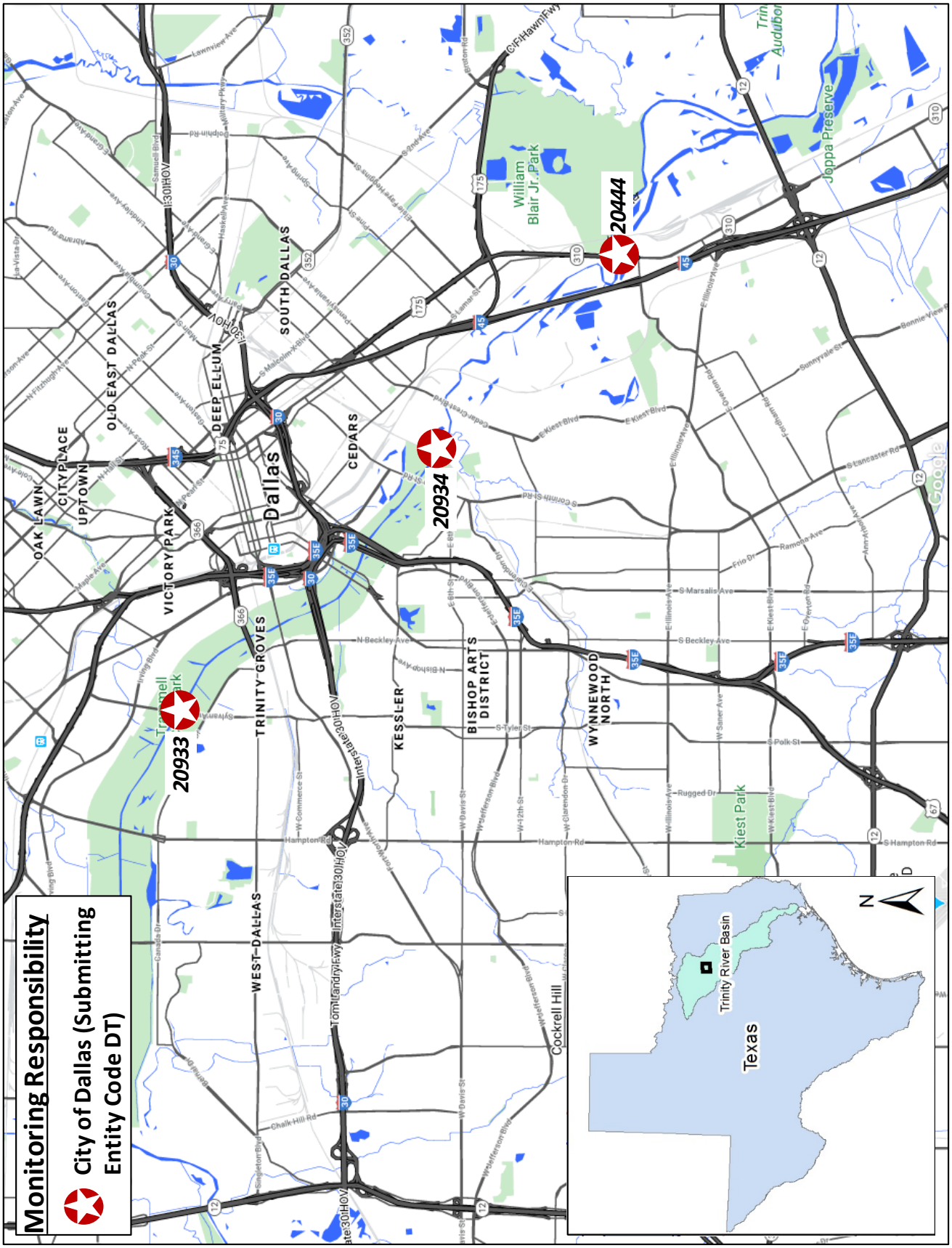
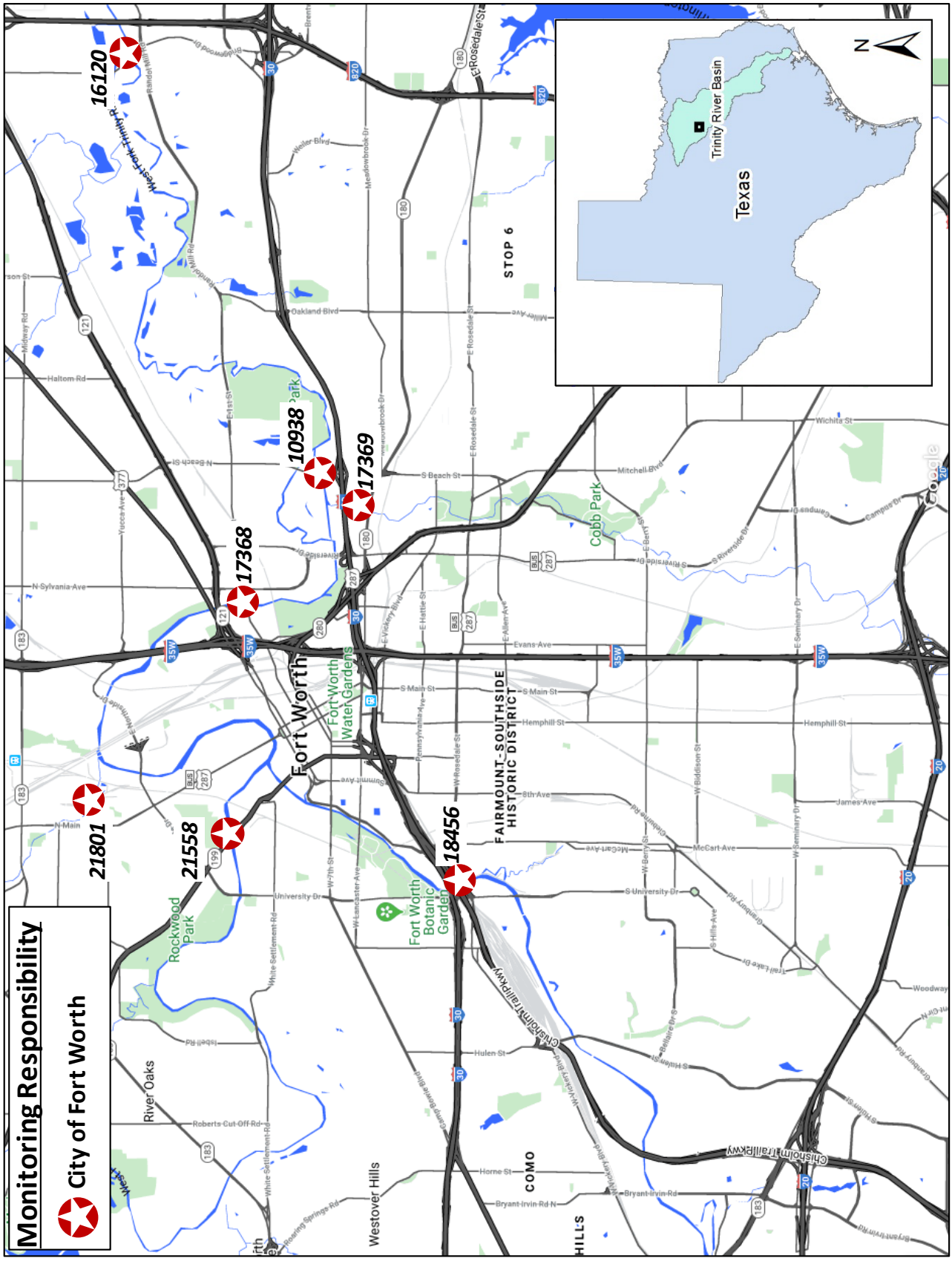
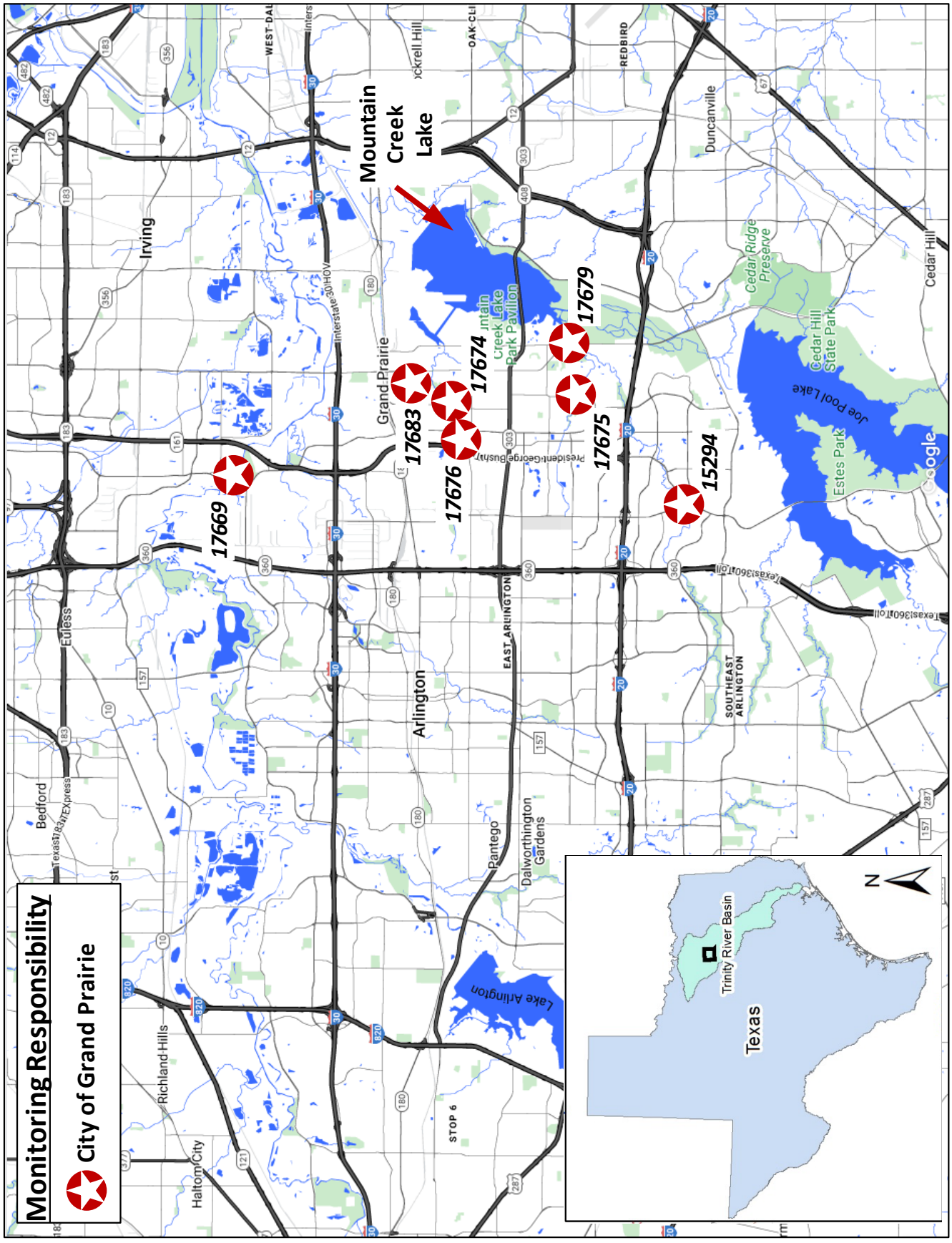


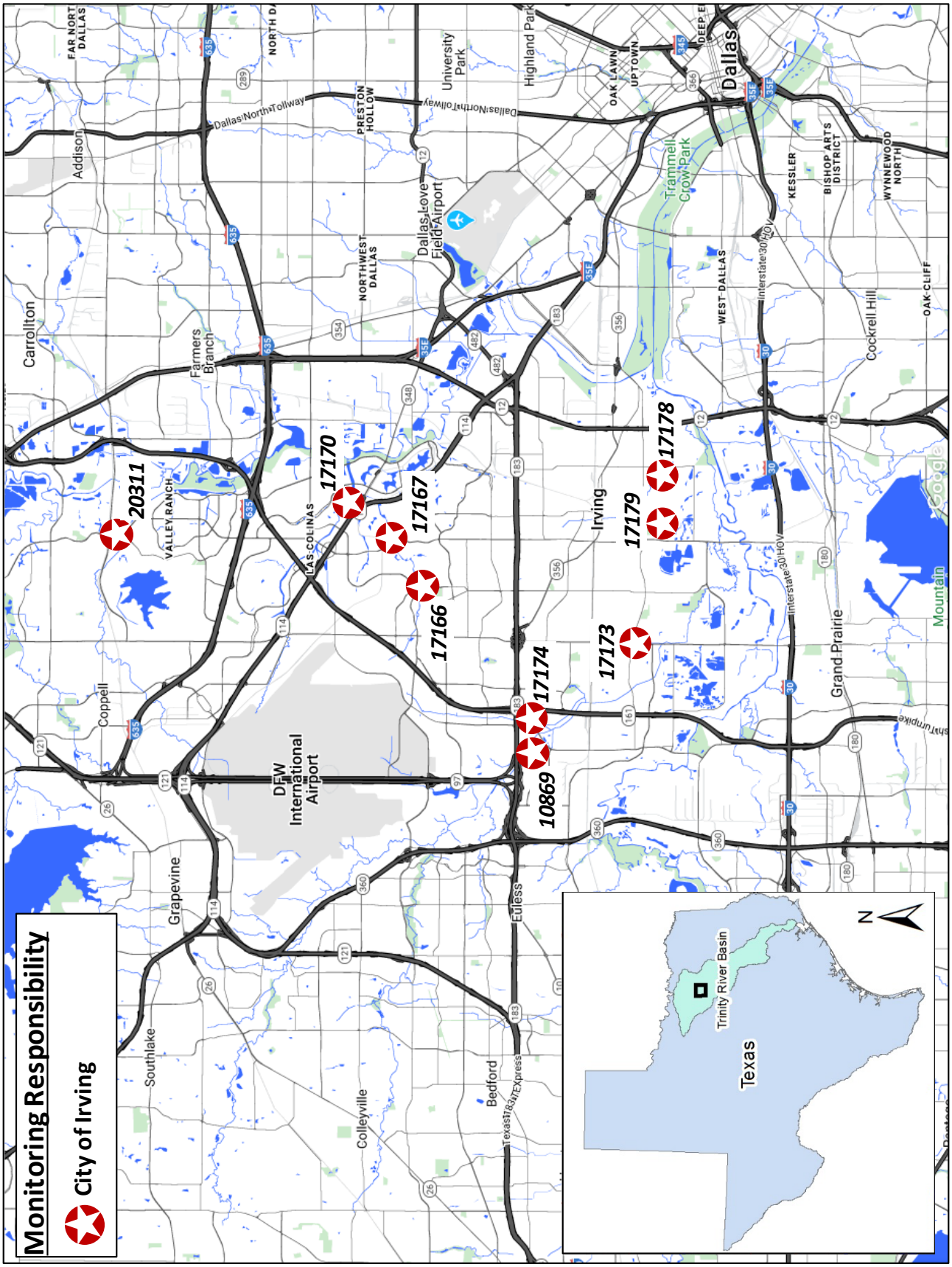
City of Fort Worth



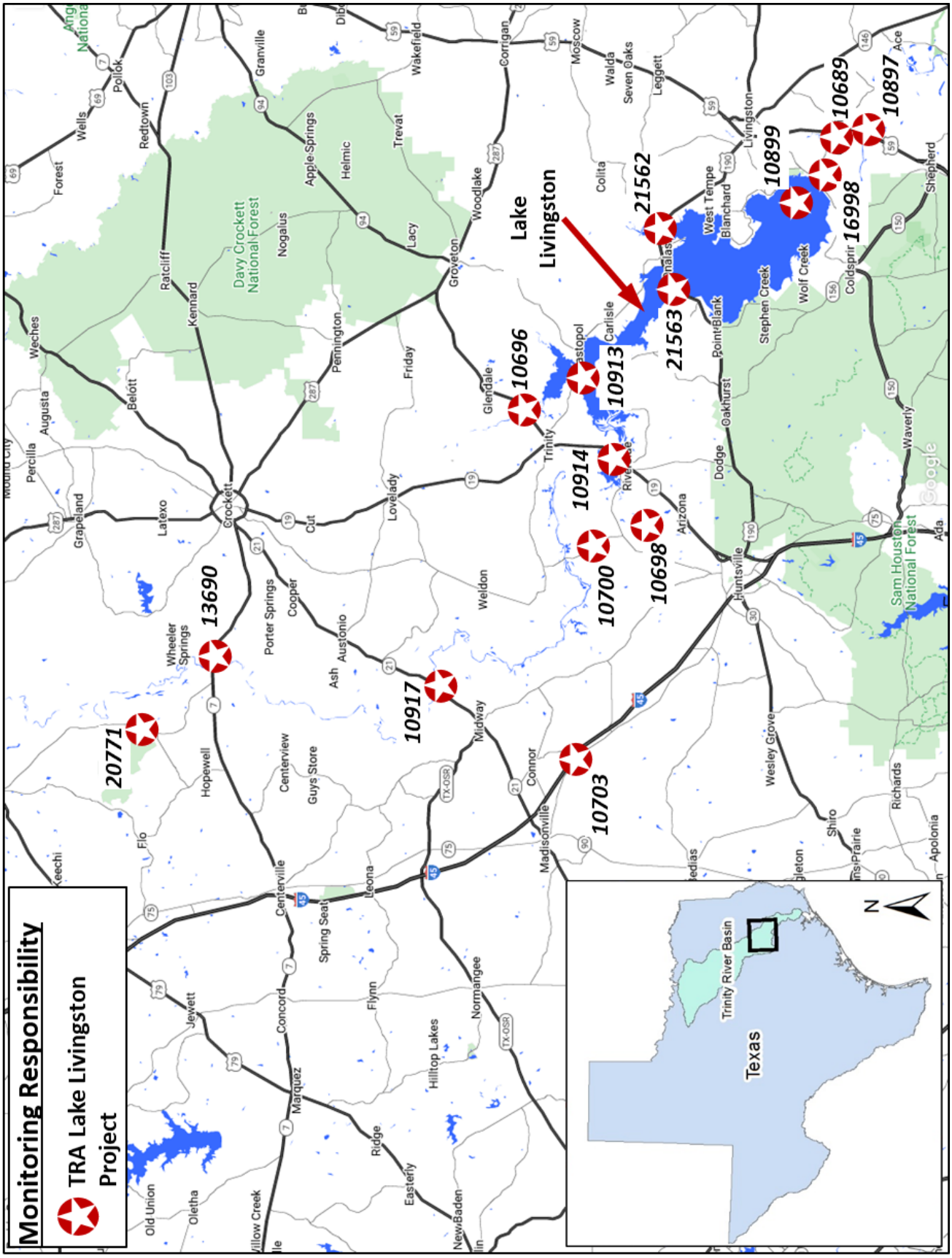
City of Grand Prairie



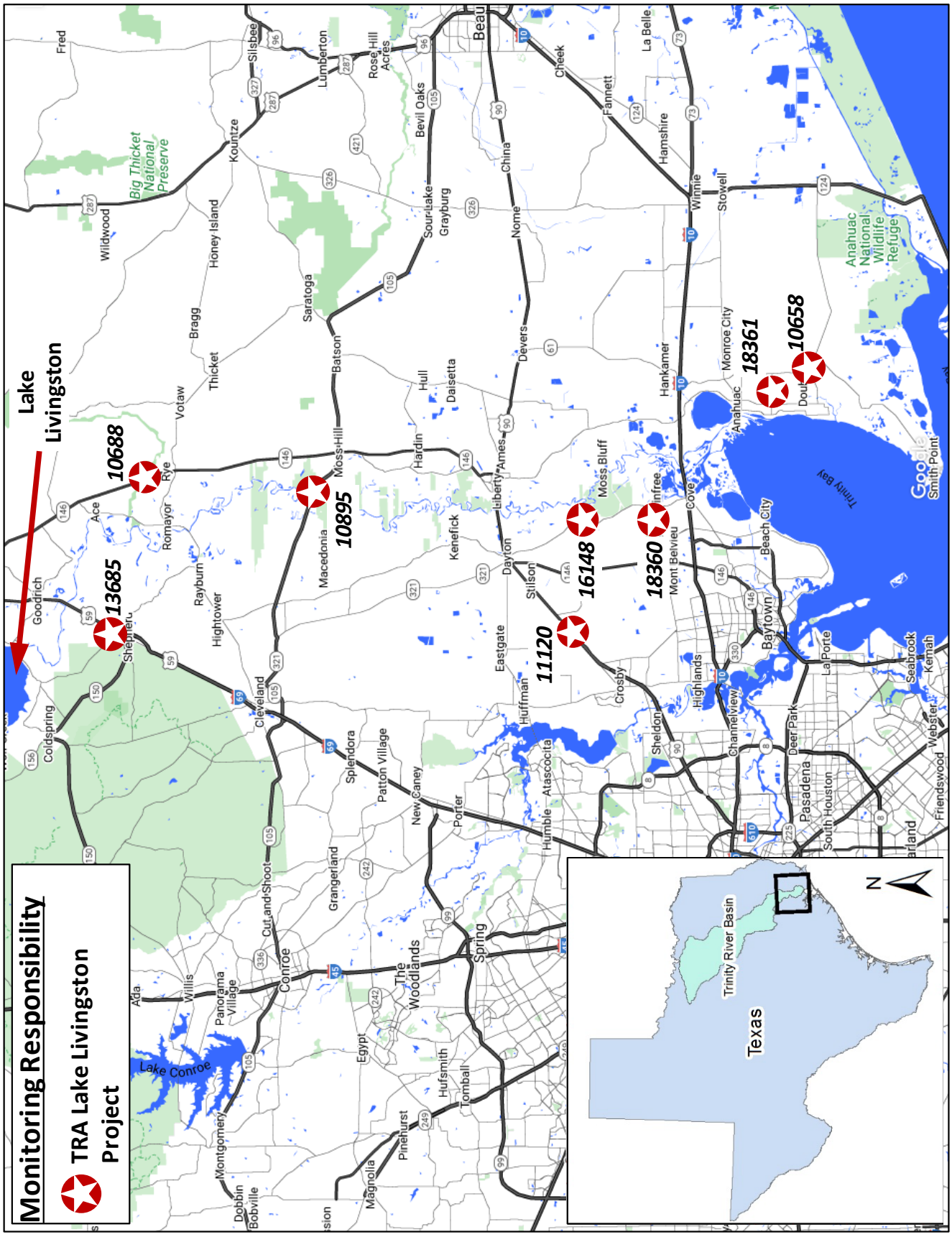
City of Irving



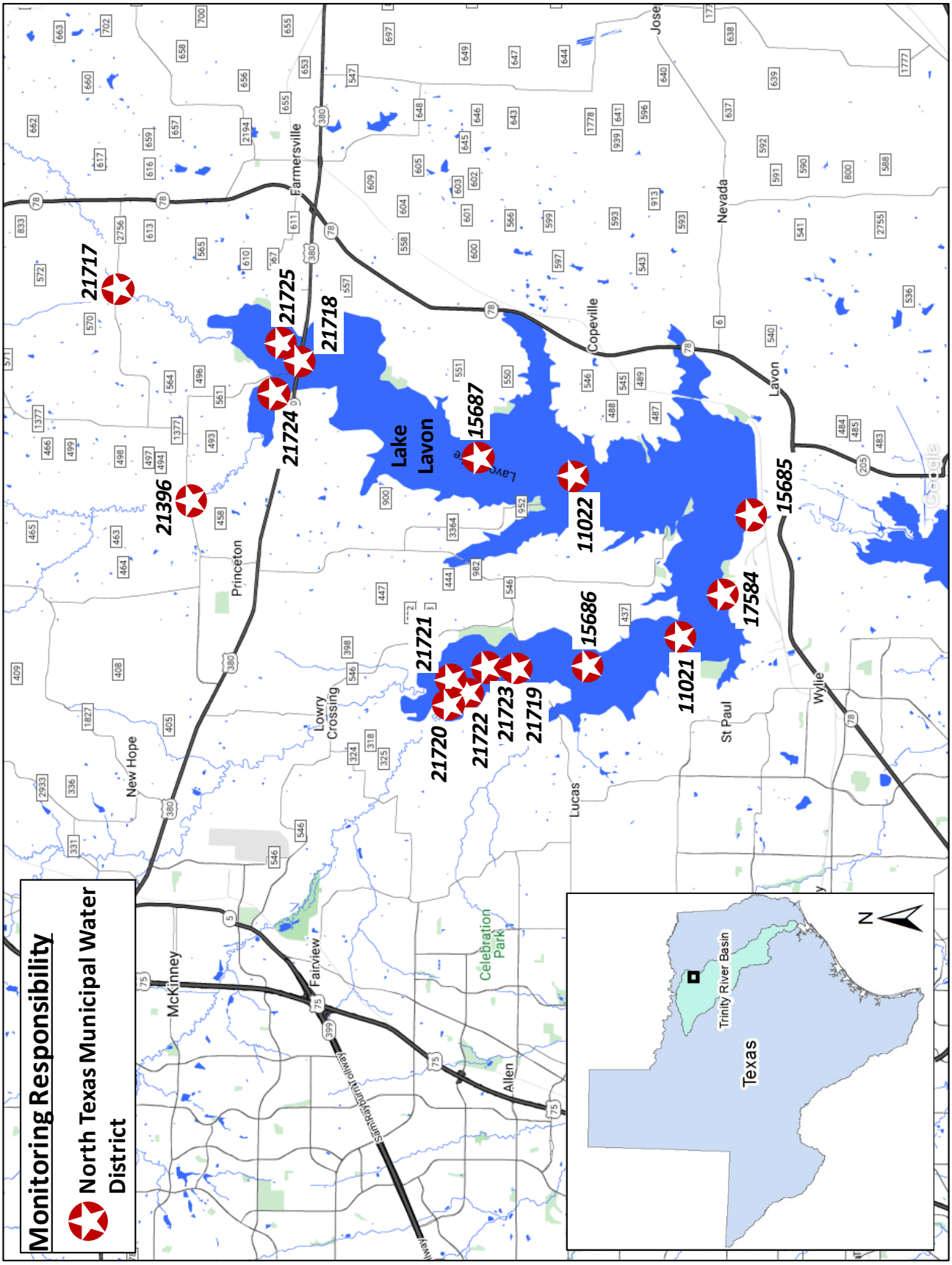
Lake Livingston Project



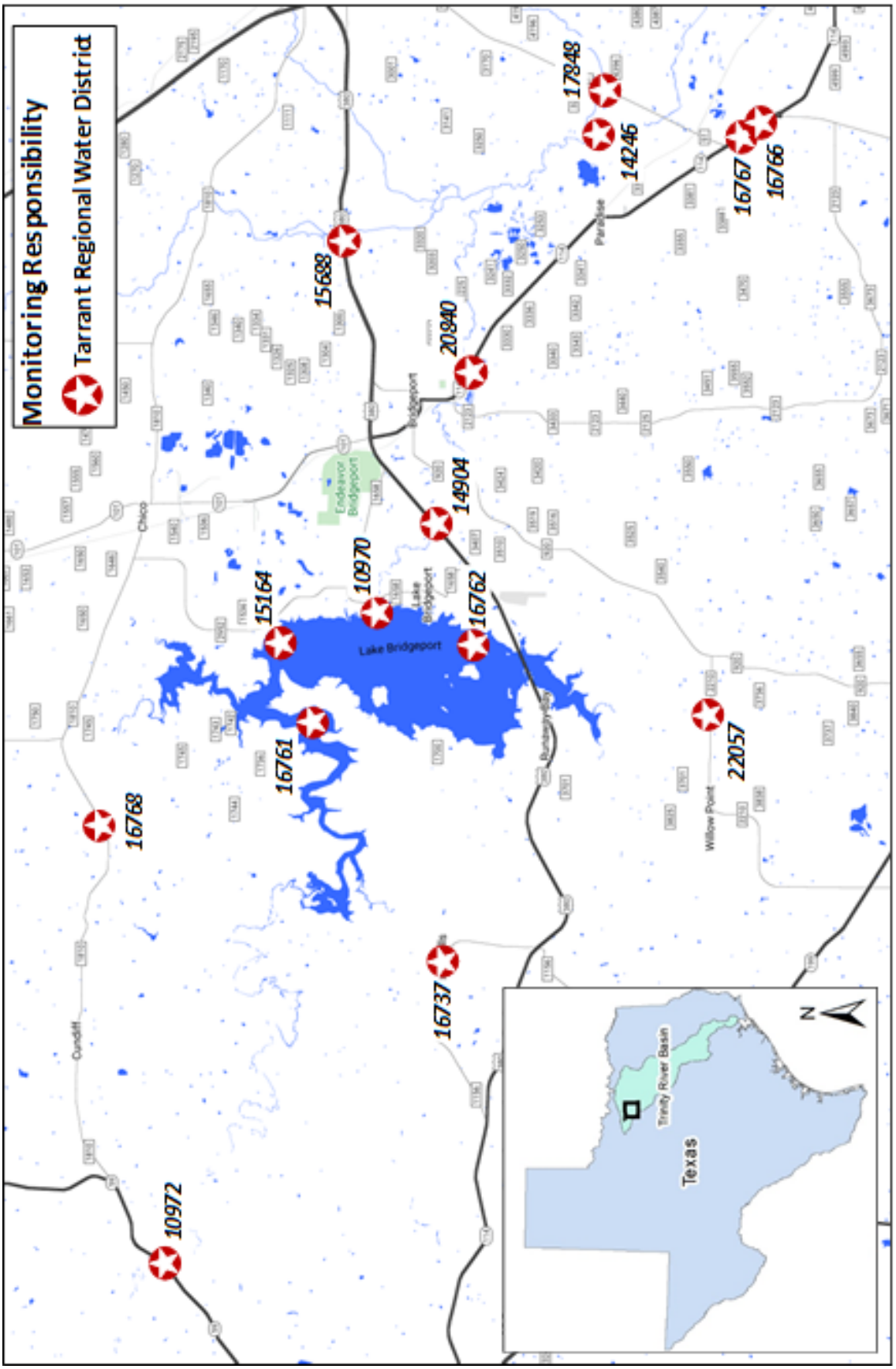
Lake Livingston Project (continued)



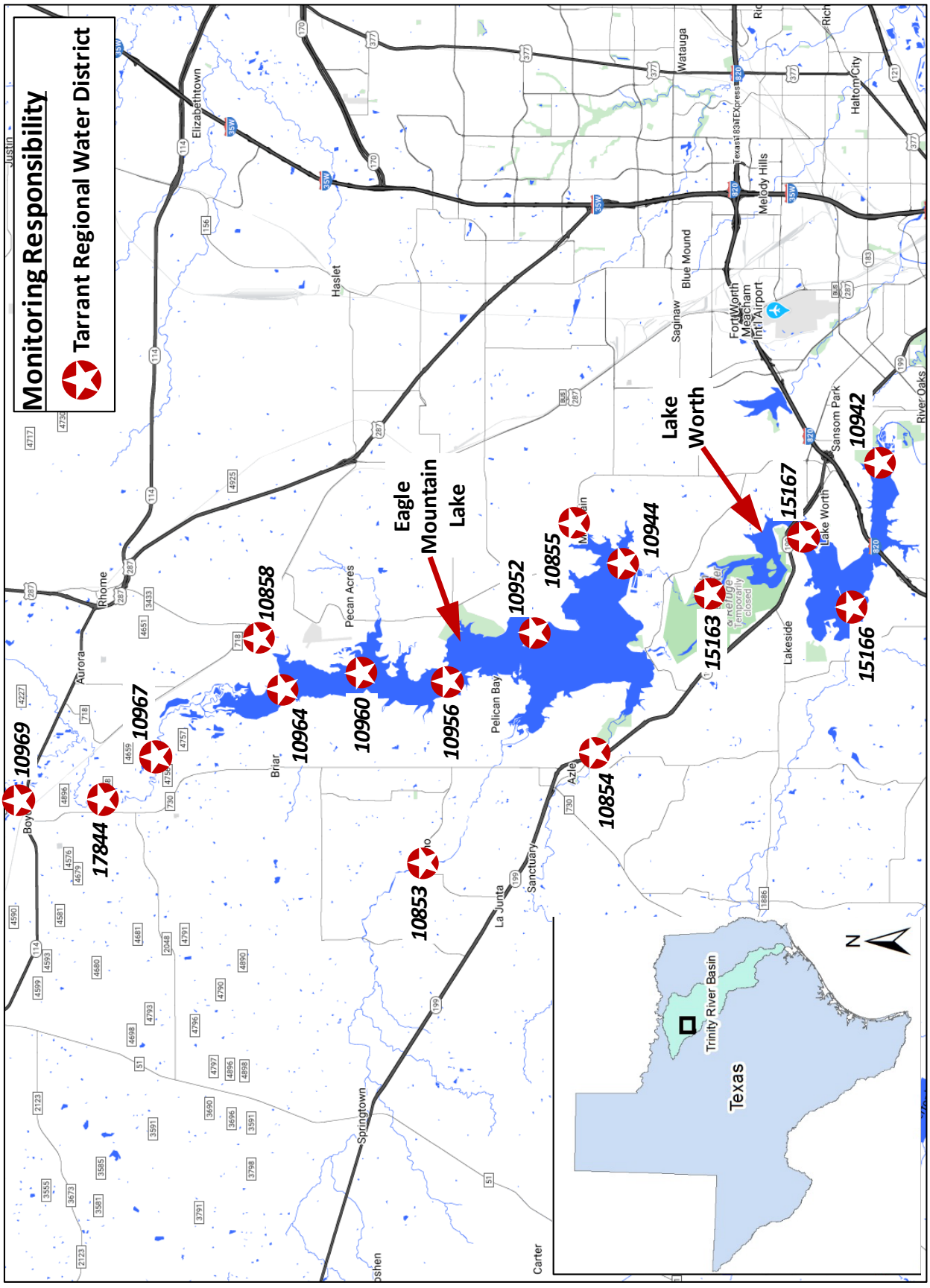
North Texas Municipal Water District



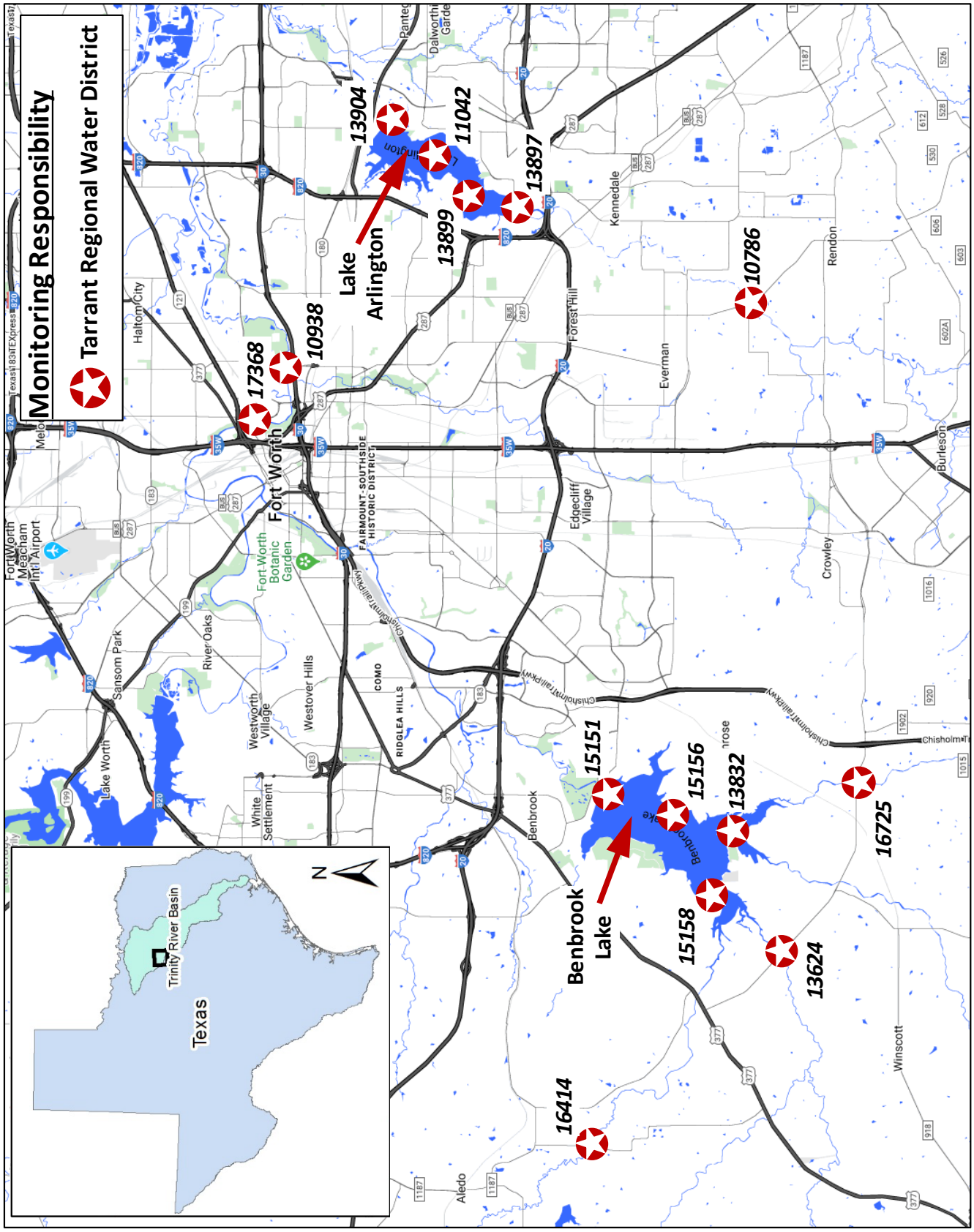
Tarrant Regional Water District



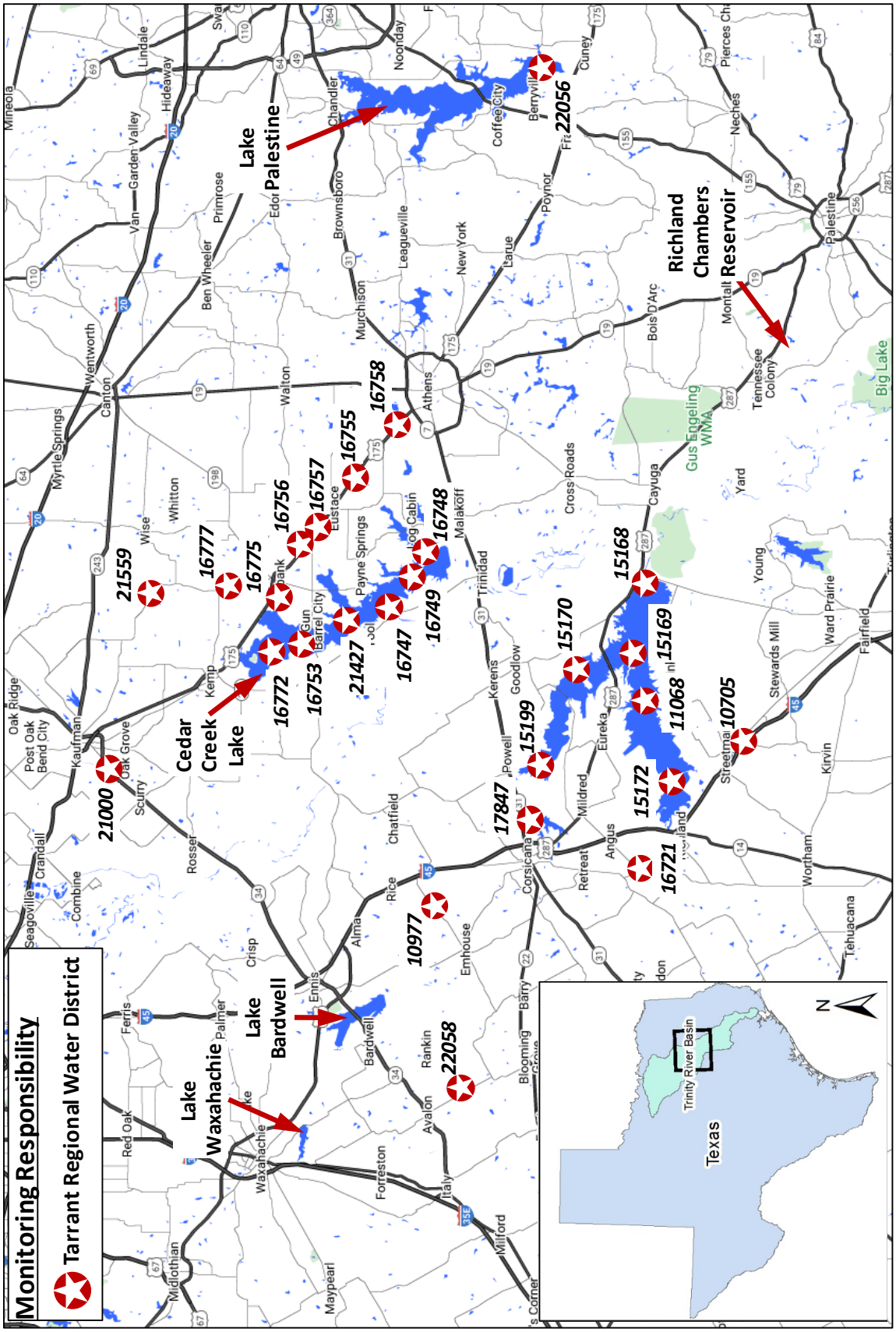
Tarrant Regional Water District (continued)



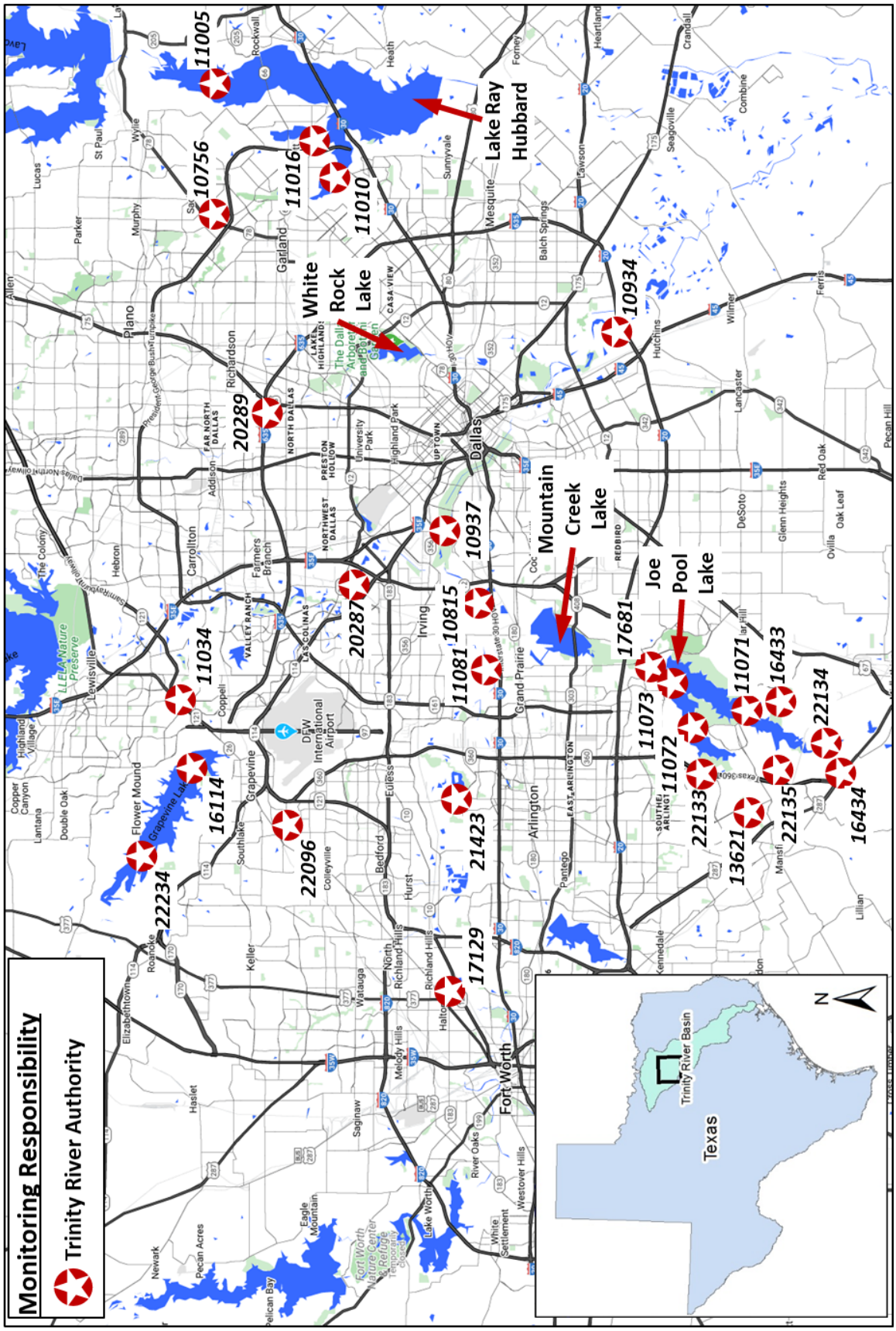
Tarrant Regional Water District (continued)



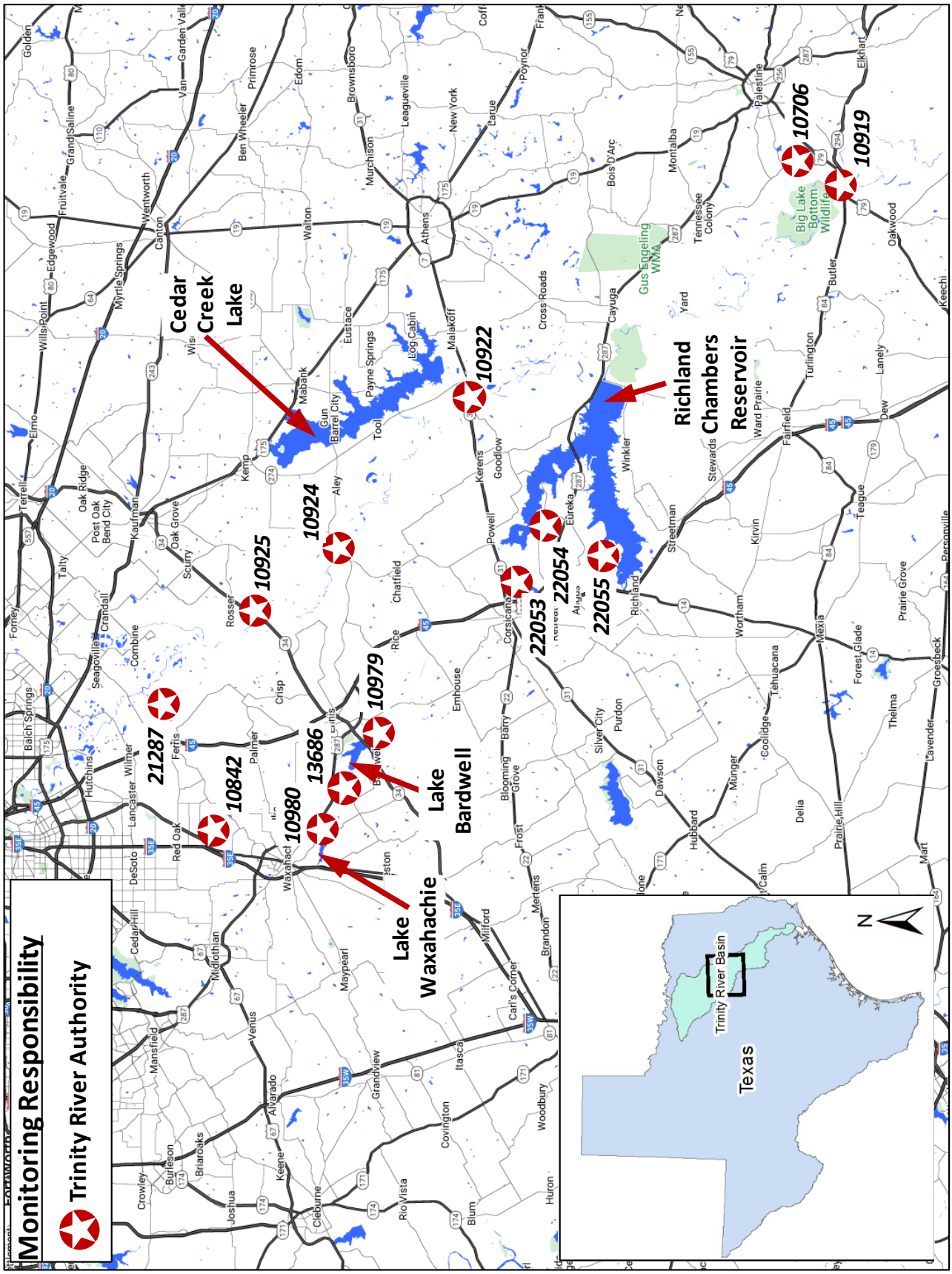
Tarrant Regional Water District (continued)



Trinity River Authority



Trinity River Authority (continued)



Trinity River Authority (continued)