Middle Yegua and Davidson Creeks Continued Monitoring Final Report and Data

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Elena Lundeen and Amanda Tague
Texas Water Resources Institute

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Authored and prepared by:
Elena Lundeen and Amanda Tague

Texas Water Resources Institute
Texas A&M AgriLife
College Station, Texas

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Cover: Middle Yegua Creek. Photo by Cameron Castilaw.

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TEXAS STATE Soil & Water CONSERVATION BOARD

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List of Acronyms

AU	Assessment Unit
BRA	Brazos River Authority
CWA	Clean Water Act
DO	Dissolved Oxygen
E. coli	*Escherichia coli*
EPA	U.S. Environmental Protection Agency
FDC	Flow Duration Curve
LDC	Load Duration Curve
MPN	Most Probable Number
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
QA	Quality Assurance
QAPP	Quality Assurance Protection Plan
QPR	Quarterly Progress Report
RUAA	Recreational Use-Attainability Analyses
SWQM	Surface Water Quality Monitoring
SWQMIS	Surface Water Quality Monitoring Information System
TCEQ	Texas Commission on Environmental Quality
TSSWCB	Texas State Soil and Water Conservation Board
TWRI	Texas Water Resources Institute
USGS	United States Geological Survey

Executive Summary

The Texas Commission on Environmental Quality (TCEQ) conducts a water body assessment on a biennial basis to satisfy requirements of the federal Clean Water Act (CWA) Sections 305(b) and 303(d). The resulting *Texas Integrated Report of Surface Water Quality* (*Texas Integrated Report*) describes the status of water bodies throughout the state of Texas. The most recent report, the *2022 Texas Integrated Report*, includes an assessment of water quality data collected from December 1, 2013, to November 30, 2020 (TCEQ, 2022).

The *Texas Integrated Report* assesses water bodies at the assessment unit (AU) level. An AU is a sub-area of a segment, defined as the smallest geographic area of use support reported in the assessment (TCEQ, 2022). Each AU is intended to have relatively homogeneous chemical, physical, and hydrological characteristics, which allows assignment of site-specific standards (TCEQ, 2022). A segment identification number and AUs are combined and assigned to each water body in a segment.

The Middle Yegua and Davidson Creeks are located within the larger Brazos River Basin. The headwaters of Middle Yegua Creek are in Williamson County, where it then flows southeast into Lake Somerville in Lee County. Davidson Creek begins in Milam County and then flows southeast to its confluence with Yegua Creek in Burleson County. Portions of Middle Yegua Creek and Davidson Creek are listed as impaired in the *Texas Integrated Report* (TCEQ, 2022). This report will focus on the impaired creek segments, Middle Yegua Creek (AU 1212A_02) and Davidson Creek (AU 1211A_02).

Water quality levels in these AUs currently exceed primary recreational use standards for bacteria concentrations. Davidson Creek, AU 1211A_02 is also impaired for depressed dissolved oxygen (DO) levels. Middle Yegua Creek was first listed as impaired for bacteria in the *2010 Texas Integrated Report* (TCEQ, 2010a) and Davidson Creek was first listed for elevated bacteria in 2002 (TCEQ, 2002) and DO in 2010 (TCEQ, 2010a). In the 2022 report, the *Escherichia coli* (*E. coli*) geometric means for these creeks ranged from 181 to 496 most probable number (MPN) /100 mL; above the applicable water quality primary contact recreation standards of 126 MPN/100 mL (TCEQ, 2022).

The Brazos River Authority (BRA) conducted a recreational use-attainability analysis (RUAA) to estimate the frequency of recreational activities in Middle Yegua and Davidson Creeks. The results of the RUAA reaffirmed the primary contact recreational use classification for both Middle Yegua and Davidson Creeks (TCEQ, 2013; TCEQ, 2010b). Continued action to address these water quality impairments will likely be necessary. The RUAA conducted by BRA was an initial step to appropriately address these water quality impairments.

No water quality data was collected for either water body from 2008 to 2018. Data collection resumed in 2018 at three sites along the Davidson Creek watershed and three sites along the Middle Yegua Creek watershed. Supplemental water quality and quantity data collection was needed to fill significant data gaps and provide adequate information for future and current watershed planning and implementation activities. Additionally, expanded data collection allows for a more accurate assessment of the waterbodies' condition and aids in identifying potential causes and sources of pollution. Each of these actions requires a reasonable amount of water quality data to assess current conditions and estimate pollutant loading reductions necessary to meet applicable water quality standards.

This project increased the spatial and temporal distribution of water quality monitoring activity in the Middle Yegua Creek and Davidson Creek watersheds to better define current instream water quality conditions, thus providing an increase in the quantity of water quality data available for future water body assessments. It is through monitoring and adequate data that watershed managers will be able to get a true assessment of water quality inhibitors.

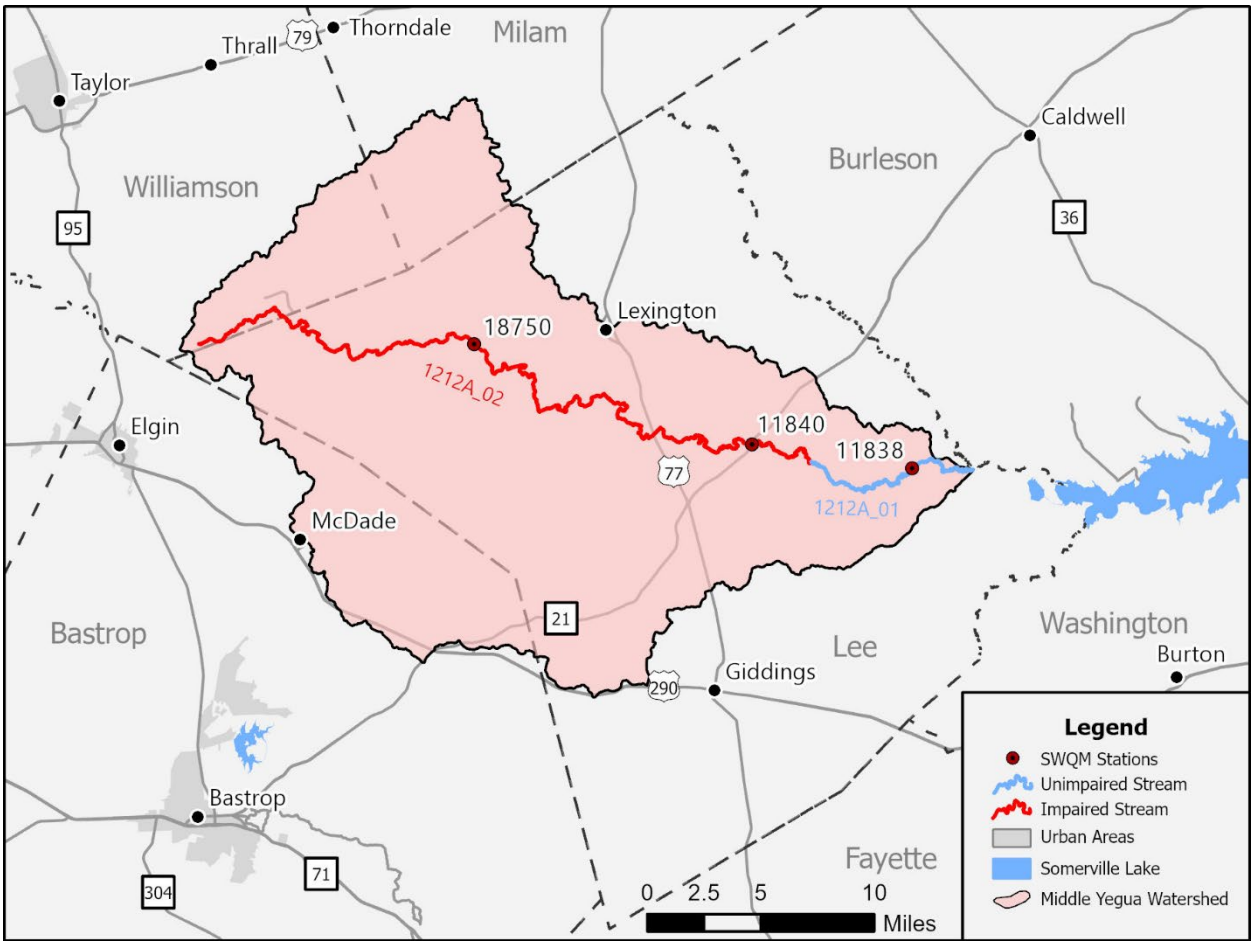

Figure 1: Overview of impaired AUs in Middle Yegua Creek, within the larger Brazos River Basin. Shows active SWQM stations that were used in this project.

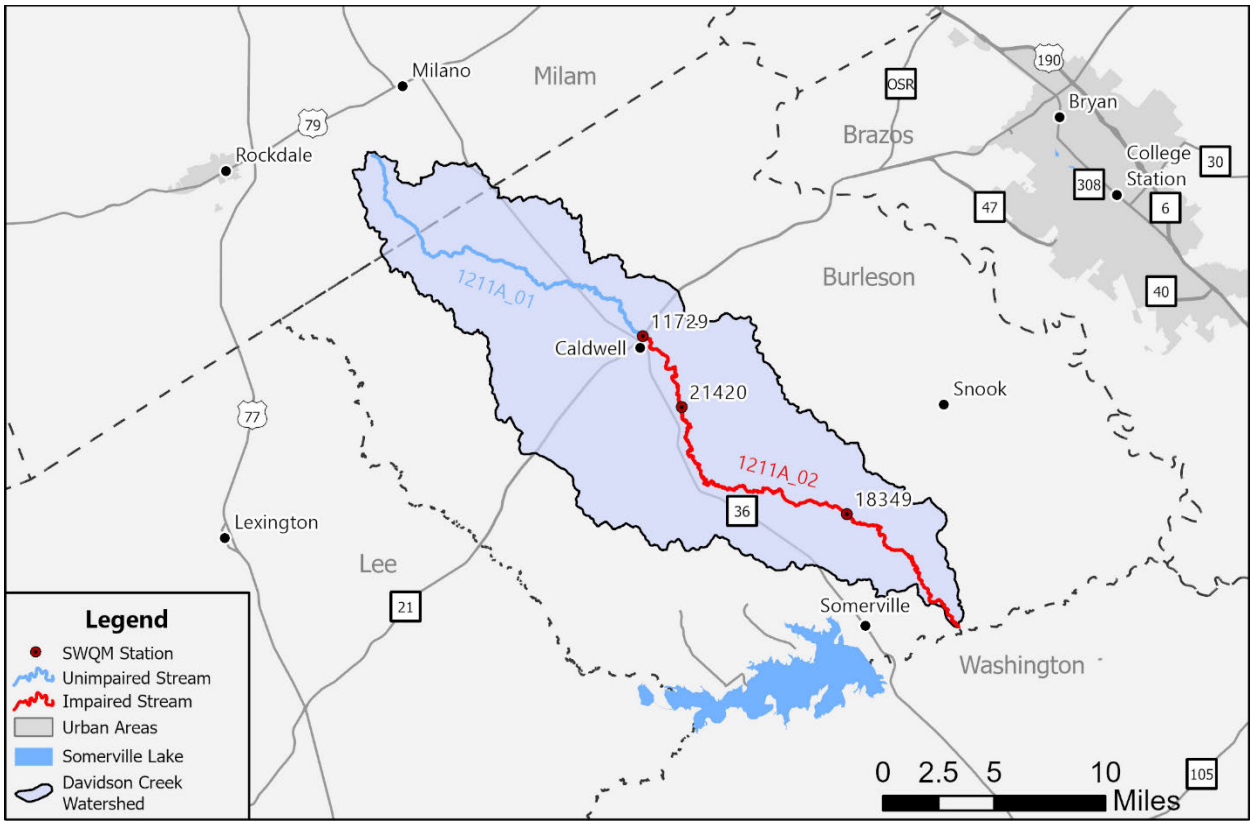

Figure 2: Overview of impaired AUs in Davidson Creek, within the larger Brazos River Basin. Shows active SWQM stations that were used in this project.

Project Description

Throughout this project, routine water quality monitoring was conducted with a focus on *E. coli* concentration data. Data was collected monthly for 32 months at six sites, including TCEQ monitoring stations 18750, 11840, and 11838 in Middle Yegua Creek (Figure 1) and 11729, 21420, and 18349 in Davidson Creek (Figure 2), resulting in 192 total monitoring events. Out of the 192 monitoring events, only 187 water grab samples were collected due to some monitoring sites running dry. All sampling procedures, methods, sampling sites, and planned project activities are fully described in the project quality assurance project plan (QAPP). Monthly sampling included field parameters, streamflow measurements, and *E. coli* grab samples.

Water quality and quantity data was uploaded to the TCEQ surface water quality monitoring information system (SWQMIS) for future waterbody assessments. Collected data, water quality findings, and trends are summarized in this final project report to provide an informational basis for any future work conducted in these watersheds.

Station 18750, Middle Yegua Creek at FM 696

This surface water quality monitoring (SWQM) station is located on Segment 1212A_02 immediately upstream of FM 696. AU 1212A_02 is currently categorized as impaired due to elevated bacteria.

Station 11840, Middle Yegua Creek at SH 21

This SWQM station is located on AU 1212A_02, 4.4 miles northeast of Lincoln, TX. AU 1212A_02 is currently categorized as impaired due to elevated bacteria.

Station 11838, Middle Yegua Creek at FM 141

This SWQM station is located on AU 1212A_01, immediately upstream of FM 141, 4 miles southeast of Dime Box, TX. AU 1212A_01 has no listed impairments, but there is a use concern for bacteria.

Station 11729, Davidson Creek Upstream of SH 21

This SWQM station is located on AU 1211A_02, 0.5 miles northeast of Caldwell, TX. Davidson Creek is currently categorized as impaired due to elevated bacteria and depressed DO.

Station 18349, Davidson Creek near FM 60

This SWQM station is located on AU 1211A_02, 43 meters downstream of FM 60 near Lyons, TX at a United States Geological Survey (USGS) gage. Davidson Creek is currently categorized as impaired due to elevated bacteria and depressed DO.

Station 21420, Davidson Creek at Burleson County Road 122

This SWQM station is located on AU 1211A_02 at CR 122 in Burleson County. Davidson Creek is currently categorized as impaired due to elevated bacteria and depressed DO.

Task 1: Project Administration

Texas Water Resources Institute (TWRI) has effectively administered, coordinated, and monitored all work performed under this project including technical and financial supervision and preparation of status reports.

Subtask 1.1: Quarterly Progress Reports (QPRs)

To track project progress, TWRI submitted QPRs to the Texas State Soil and Water Conservation Board (TSSWCB). QPRs contained an overview of project activities completed during each quarter, an overview of activities to be completed in the next quarter, and highlighted related issues or problems associated with the project. The QPRs were submitted by the 1st of January, April, July and October and distributed to all project partners.

Subtask 1.2: Reimbursement Forms

TWRI provided financial supervision to ensure tasks and deliverables were acceptable and completed within budget. Financial supervision consisted of submitting appropriate reimbursement forms at least quarterly to TSSWCB and submitting necessary budget revisions.

Subtask 1.3: Project Coordination

TWRI hosted quarterly coordination meetings or conference calls with project partners to discuss project activities, the project schedule, communication needs, deliverables, and other requirements. TWRI developed lists of action items needed following each project coordination meeting and distributed them to project personnel.

Subtask 1.4: Final Report

TWRI developed this Final Report that summarizes activities completed during the duration of the project as well as the conclusions reached. The Final Report also discusses the extent to which the project goals and measures of success were achieved.

Task 2: Quality Assurance

TWRI developed data quality objectives and quality assurance and quality control activities to ensure data generated through this project were of known and acceptable quality.

Subtask 2.1: QAPP Development

TWRI developed a QAPP for activities in Tasks 3, consistent with the most recent versions of the U.S. Environmental Protection Agency (EPA) *Requirements for Quality Assurance Project Plans* (*QA/R-5*) (EPA, 2001) and *the TSSWCB Environmental Data Quality Management Plan*. All monitoring procedures and methods prescribed in the QAPP were to be consistent with the guidelines detailed in the *TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)* (TCEQ, 2012) and *Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416)* (TCEQ, 2014). [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, *Environmental Testing Laboratory Accreditation and Certification*, which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards (TNI, 2016), were required where applicable.] After developing the QAPP, TWRI sent draft and final versions to TSSWCB, and a final document was approved.

Subtask 2.2: QAPP Implementation

TWRI implemented the approved QAPP. TWRI submitted revisions and amendments of the QAPP to TSSWCB when necessary.

Task 3: Continued Surface Water Quality Monitoring for Middle Yegua and Davidson Creeks

TWRI collected water quality and quantity data of known and acceptable quality for future watershed-based planning efforts.

Subtask 3.1: Water Quality Monitoring

TWRI conducted monthly ambient water quality monitoring at six sites for 32 months (192 total samples). Sampling included basic field parameters (temperature, pH, dissolved oxygen (DO), specific conductance, and flow where conditions allow) and grab sample collection (analyzed for *E. coli*). Water samples were delivered to a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory with the appropriate holding time for bacterial analysis. Sampling events were documented in QPRs.

Subtask 3.2: Water Quality Data Submission

TWRI maintained a master database of all collected water quality data from this project. Collected data was submitted to TSSWCB by TWRI for submission to SWQMIS quarterly.

Appendix A: Data Summary Report

TCEQ conducts a water body assessment on a biennial basis to satisfy requirements of the federal Clean Water Act (CWA) Sections 305(b) and 303(d). The resulting *Texas Integrated Report of Surface Water Quality* (Texas Integrated Report) describes the status of water bodies throughout the state of Texas. The most recent report, the *2022 Texas Integrated Report*, includes an assessment of water quality data collected from December 1, 2013, to November 30, 2020 (TCEQ, 2022).

The *Texas Integrated Report* assesses water bodies at the assessment unit (AU) level. An AU is a sub-area of a segment, defined as the smallest geographic area of use reported in the assessment (TCEQ, 2022). Water bodies are divided into segments and assigned a segment identification number that is combined with the AUs. Each AU is intended to have relatively homogeneous chemical, physical, and hydrological characteristics, which allows the assignment of site-specific standards to the AU (TCEQ, 2022).

This project scope included both Middle Yegua and Davidson Creeks. These creeks are identified with unique AUs and TCEQ monitoring stations that allow independent water quality analysis for each creek. At least 10 data points within the most recent 7 years of available data are required for all water quality parameters except bacteria, which requires a minimum of 20 samples. Middle Yegua Creek (AU 1212A_02) was first listed as impaired due to elevated levels of bacteria in the *2010 Texas Integrated Report* (TCEQ, 2010a). Davidson Creek (AU 1211A_02) was designated as impaired for elevated levels of bacteria in the *2002 Texas Integrated Report* (TCEQ, 2002) and was listed as impaired for depressed DO in 2010 (TCEQ, 2010).

There were six active monitoring stations where monitoring was conducted for this project. SWQM station IDs 11838, 11840, and 18750 are located along Middle Yegua Creek (AU 1212A_01 and 1212A_02) (Figure 1). SWQM station IDs 11729, 18349, and 21420 are located at Davidson Creek (AU 1211A_02) (Figure 2). These six stations were monitored monthly for field parameters such as temperature, DO, specific conductance, pH, and instantaneous flow rate. This type of monitoring is considered routine monitoring because all data and parameters are routinely collected monthly for each site. Additionally, water grab samples from each site were analyzed for *Escherichia coli* (*E. coli*) concentrations.

Texas Surface Water Quality Standards

Water quality standards are established by the state and approved by the U.S. Environmental Protection Agency (EPA) to define a water body's ability to support its designated uses, which may include aquatic life use (fish, shellfish, and wildlife protection and propagation), primary contact recreation (swimming), public water supply, and fish consumption. Water quality indicators for these uses include DO (aquatic life use), *E. coli* (primary contact recreation), pH, temperature, and total dissolved solids (TCEQ, 2022).

Bacteria

Concentrations of fecal indicator bacteria are evaluated to assess the risk of illness during contact recreation. In freshwater environments, concentrations of *E. coli* are measured to evaluate the presence of fecal contamination in water bodies from warm-blooded animals and other sources. The presence of fecal indicator bacteria, such as *E. coli*, suggests that associated pathogens from the intestinal tracts of warm-blooded animals could be reaching water bodies and may cause illness in people that recreate in them. Common sources that indicator bacteria can originate from include wildlife, domestic livestock, pets, malfunctioning on-site sewage facilities, urban and agricultural runoff, sewage system overflows,

and direct discharges from wastewater treatment facilities. There is a specific standard for *E. coli* in freshwater for water bodies that are used for primary contact recreation. The standard for primary contact recreation is a geometric mean of 126 MPN of *E. coli* per 100 mL of water from at least 20 samples (30 TAC § 307.7 2014).

As previously mentioned, Middle Yegua Creek (AU 1212A_02) and Davidson Creek (AU 1211A_02) are impaired due to elevated bacteria levels in the *2022 Texas Integrated Report* (TCEQ, 2022). Both creeks are designated for primary contact recreation. Data collected during this project period for Middle Yegua Creek shows that bacteria concentrations are related to instantaneous flow, typically peaking from January to August (Figure 4; Figure 11). Davidson Creek shows a similar trend, although data is more erratic. The bacteria geomeans for both AU 1212A_02 and 1211A_02 appear to have an elevated but stable trend above the standard of 126 MPN/100 mL. Conversely, the geomean for *E. coli* data at AU 1212A_01 on Middle Yegua Creek has stabilized below the regulatory standard of 126 MPN/100 mL (Figure 3). This is significant because, in the *2022 Texas Integrated Report,* AU 1212A_01 had a bacteria geomean above the primary contact recreation standard but lacked sufficient data to be listed as impaired (TCEQ, 2022). Therefore, bacteria levels may be lower at this AU than previous observations indicated. This AU is an example of why filling data gaps is essential for watershed planning efforts.

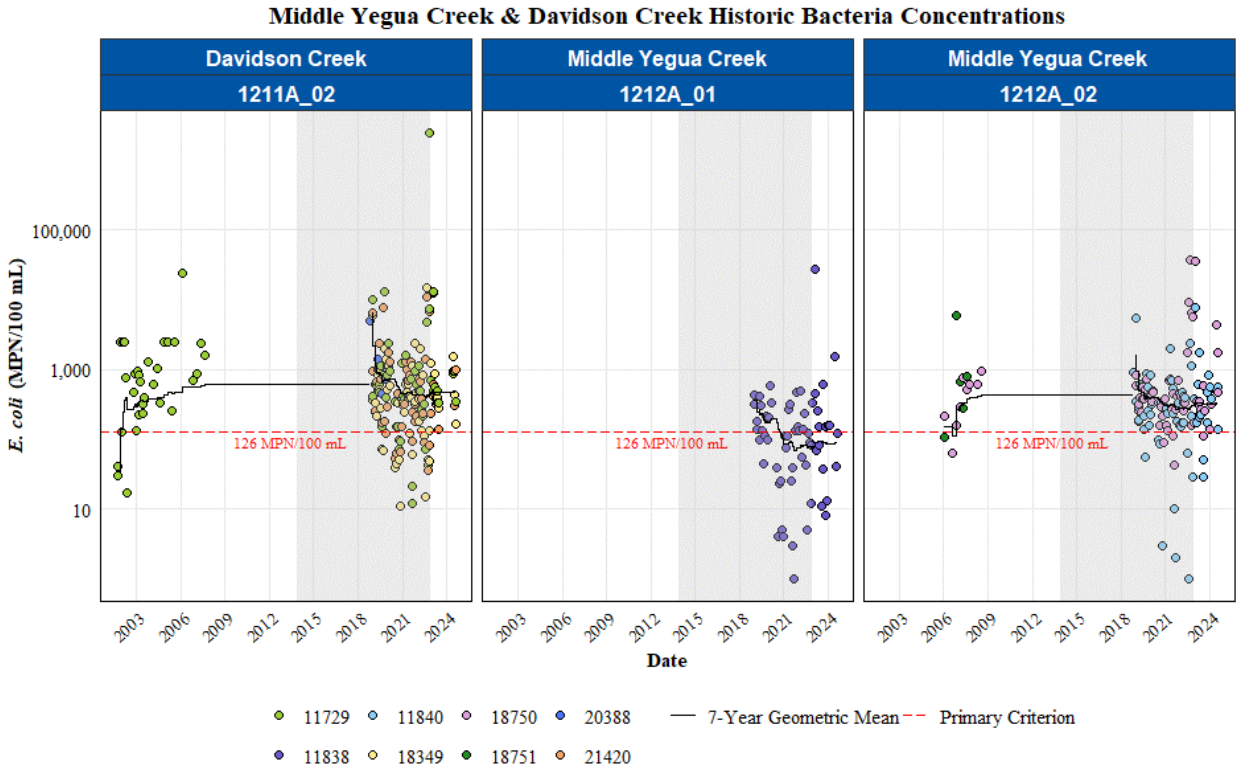

Figure 3: Historic E. coli concentration at project SWQM stations in Middle Yegua Creek and Davidson Creek. Middle Yegua and Davidson Creeks are classified as primary contact recreation. This sets the standard criterion for E. coli at 126 MPN/100mL. The assessment period for the 2022 Texas Integrated Report is shaded in grey.

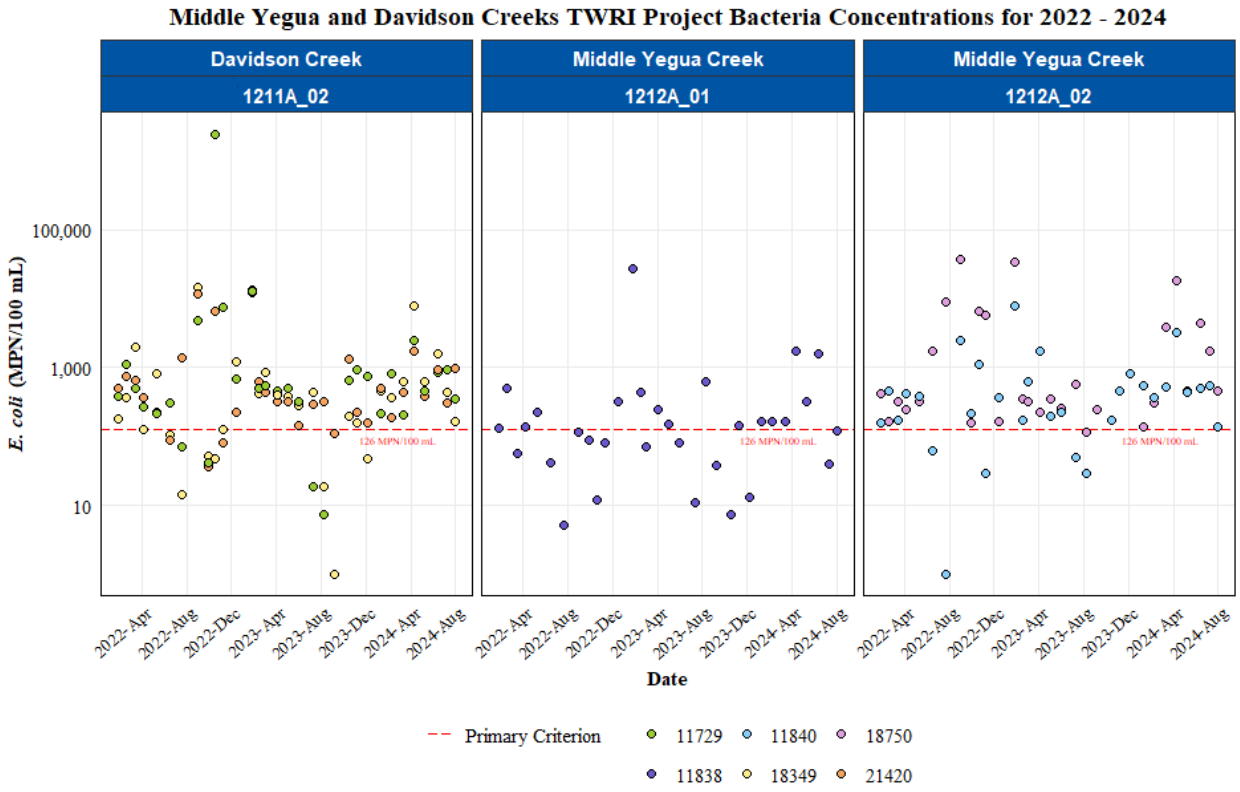

Figure 4: Bacteria concentrations at project SWQM stations in Middle Yegua Creek and Davidson Creek. Middle Yegua and Davidson creeks are classified as primary contact recreation. This sets the standard criterion for E. coil at 126 MPN/100mL.

Dissolved Oxygen

Dissolved oxygen is used to determine a water body's aquatic life uses. Aquatic life uses measure whether a water body can support and maintain a healthy aquatic ecosystem. If DO levels drop too low, fish and other aquatic species will not survive. Typically, DO will fluctuate throughout the day, with the highest levels occurring in the mid to late afternoon due to photosynthesis. DO levels are usually at their lowest just before dawn as both plants and animals in the water consume oxygen through respiration. Furthermore, seasonal fluctuations in DO are common because of decreased oxygen solubility in water as temperature increases; therefore, DO levels are typically lower during the summer and higher in the winter months. While DO can fluctuate naturally, human activities can also cause abnormally low DO levels. Excessive organic matter (vegetative material, untreated wastewater, etc.) can result in depressed DO levels as bacteria break down the materials and consume oxygen. Excessive nutrients from fertilizers and manures can also depress DO as aquatic plant and algae growth increase in response. More respiration from plants and the decay of organic matter as plants die off can also decrease DO concentrations.

In the *2022 Texas Integrated Report* (TCEQ, 2022), Middle Yegua Creek AU 1212A_01 fully supports the DO screening level criterion of 5 mg/L, but AU 1212A_02 has a screening level concern. Early historical data starting in 1999 indicated that both AUs supported the DO screening criterion 5 mg/L (Figure 5). However, data from more recent and robust monitoring efforts show that both AUs in Middle Yegua

Creek (AU 1212A_01 and 1212A_02) frequently exceed the screening criterion (5 mg/L) and minimum criterion (3 mg/L).

Davidson Creek (AU 1211A_02) is listed as impaired for depressed DO for both the 24-hr. average and 24-hr. minimum criterion in the *2022 Texas Integrated Report* (TCEQ, 2022). Monitoring data collected in Davidson Creek (AU 1211A_02) since 1998 shows recurrent exceedance of the screening criterion (4 mg/L) and minimum criterion (3 mg/L) (Figure 6).

Historical DO data for both creeks shows repeated exceedance of the respective screening criterion (Figure 5 and Figure 6). DO data collected by the TWRI during this project displays strong seasonal patterns, shown in Figure 7 and Figure 8. Observed DO levels were lowest from August to December for both creeks, corresponding with low flow and no flow measurements. Data collected during this project confirms historic data showing both creeks periodically exceed the respective screening criterion. Overall, the frequent DO exceedances in both Middle Yegua Creek and Davidson Creek indicate aquatic ecosystem function may be impacted by low DO.

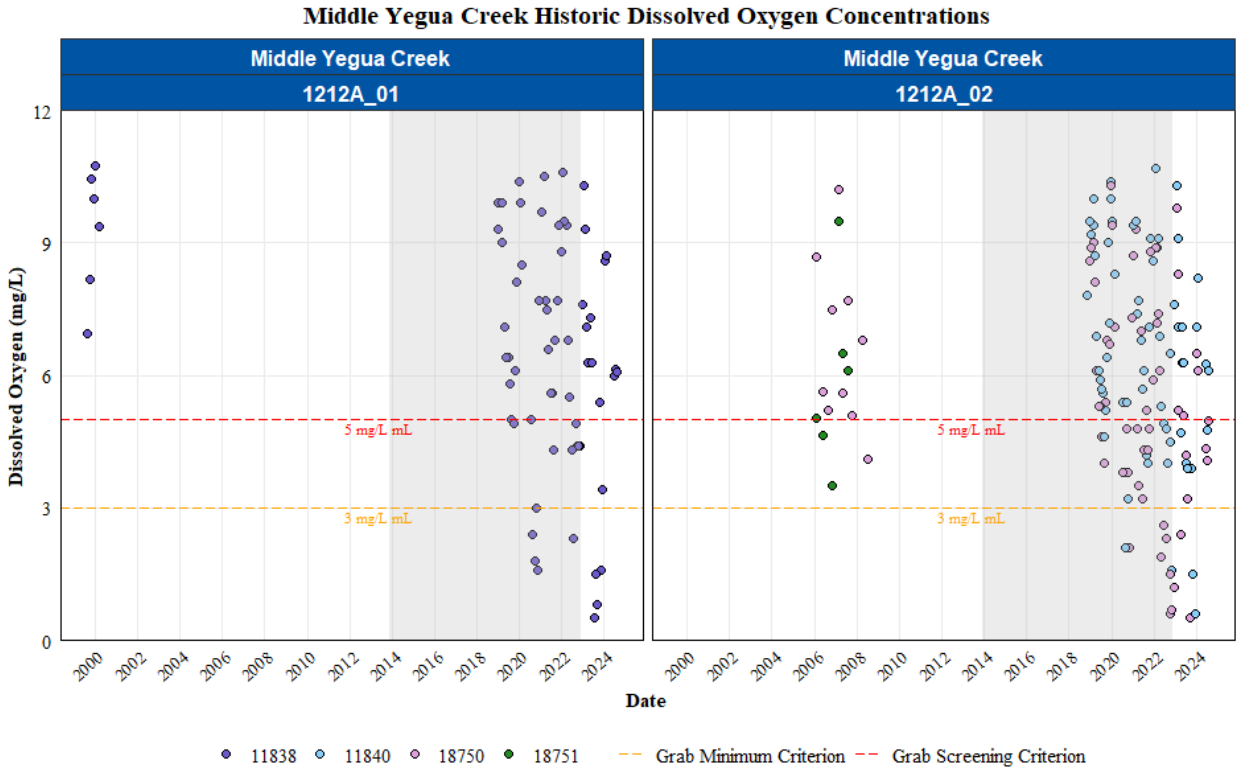

Figure 5: Historic DO concentrations at project SWQM stations in Middle Yegua Creek. AU 1212A_02 has a screening level concern for DO. The assessment period for the 2022 Texas Integrated Report is shaded in grey.

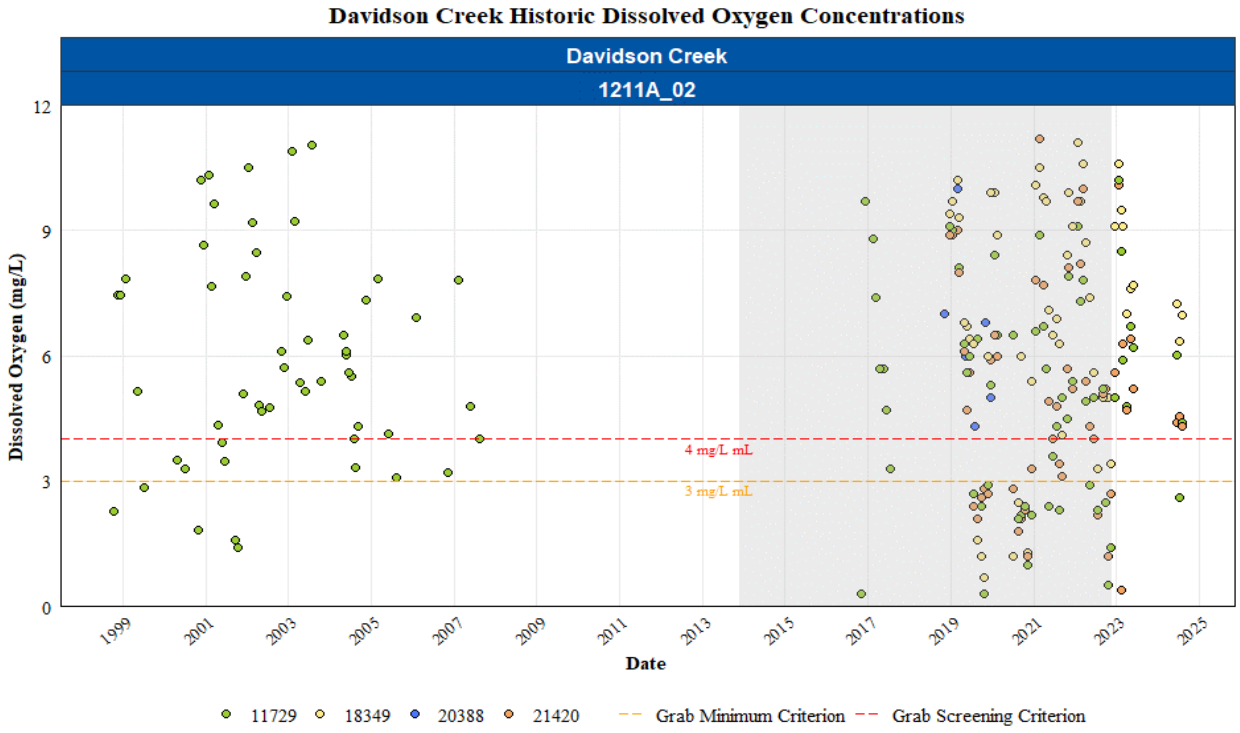

Figure 6: Historic DO concentrations at project SWQM stations in Davidson Creek. Davidson Creek is listed as impaired for depressed DO. The assessment period for the 2022 Texas Integrated Report is shaded in grey.

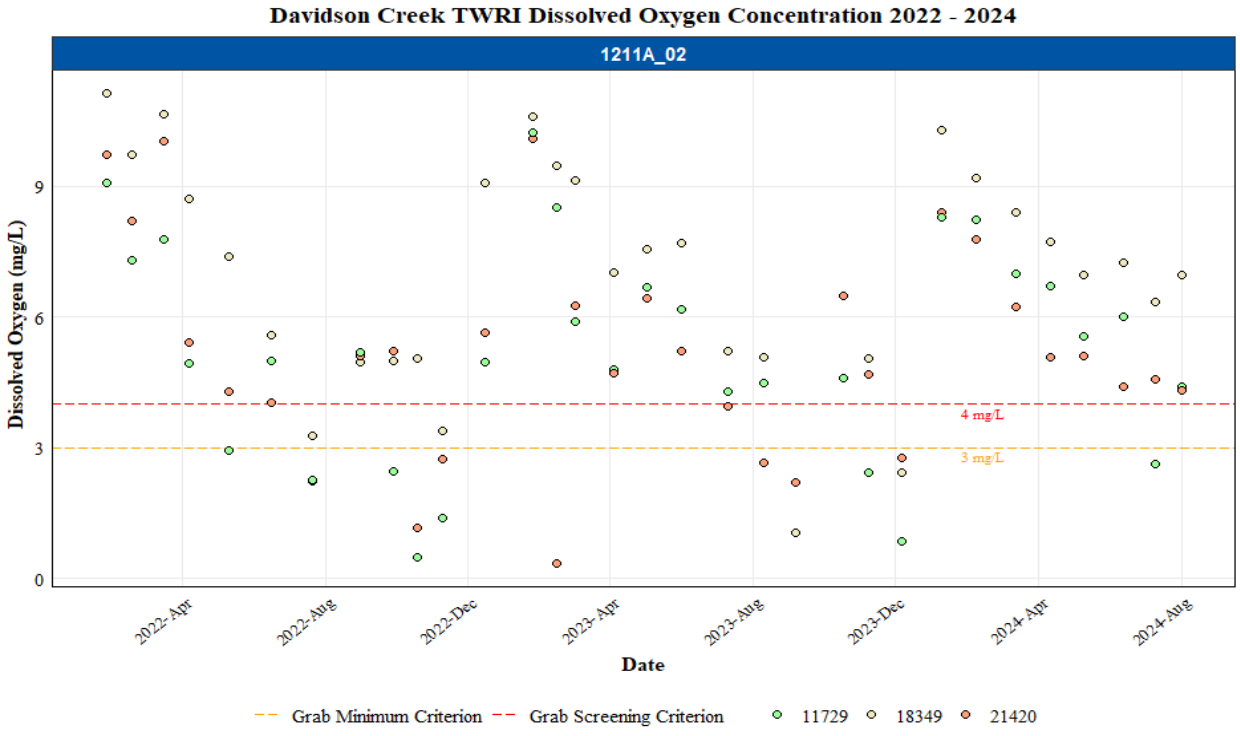

Figure 7: DO Concentrations at project SWQM stations in Davidson Creek. The DO screening criterion for this creek is 4 mg/L, and it is listed for depressed DO.

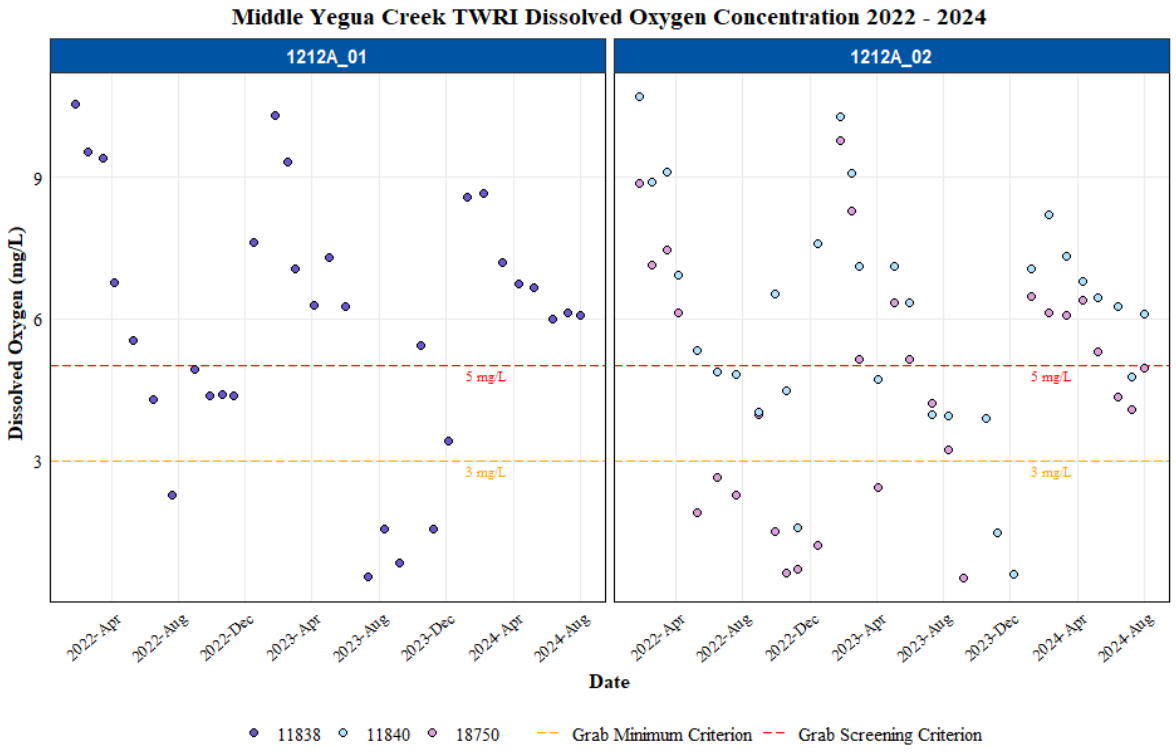

Figure 8: DO concentrations at project SWQM stations in Middle Yegua Creek. The DO screening criterion for this creek is 5 mg/L, and there are no listed concerns for DO.

Flow

Generally, streamflow (the amount of water flowing in a river/creek at a given time) is dynamic and always changing in response to both natural (e.g. precipitation events) and anthropogenic (e.g. changes in land cover) factors. From a water quality perspective, streamflow is important because it influences the ability of a water body to assimilate pollutants.

Flow data is useful in creating flow duration curves (FDC) and load duration curves (LDC). The LDC method is widely used to characterize water quality data across different flow conditions in a watershed. An LDC provides visual display of streamflow, load capacity, and water quality exceedance by first developing a FDC using flow measurements.

Historic flow measurements indicate flow is variable in both Middle Yegua and Davidson creeks, but high flows tend to occur during the spring (Figure 9 and Figure 10). In both Middle Yegua Creek and Davidson Creek, high flows generally coincide with elevated *E. coli* levels, but high *E. coli* levels also occur outside of high flow events. Instantaneous flow measurements were collected at all project monitoring sites over the course of the TWRI-led project (Figure 11). Flow data collected throughout the project is consistent with historical data flow data for Middle Yegua Creek and Davidson Creek.

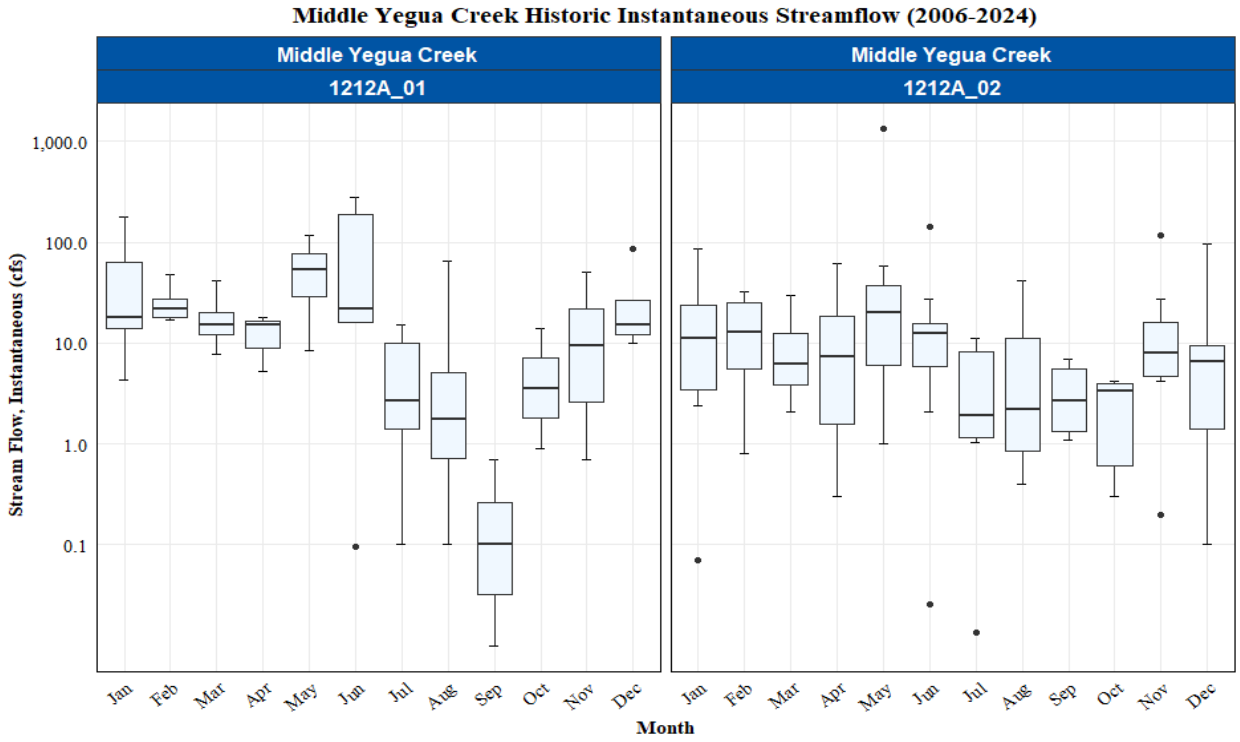

Figure 9: Historic flow at SWQM stations in Middle Yegua Creek.

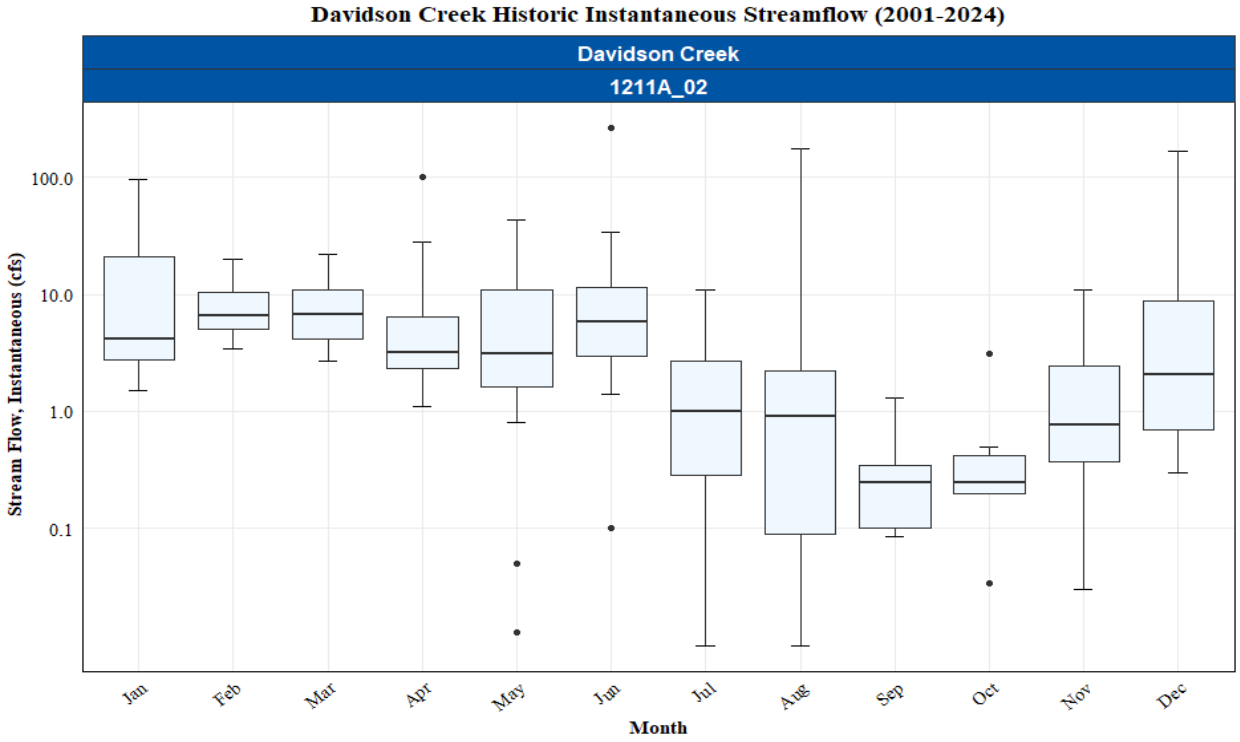

Figure 10: Historic flow at SWQM stations in Davidson Creek.

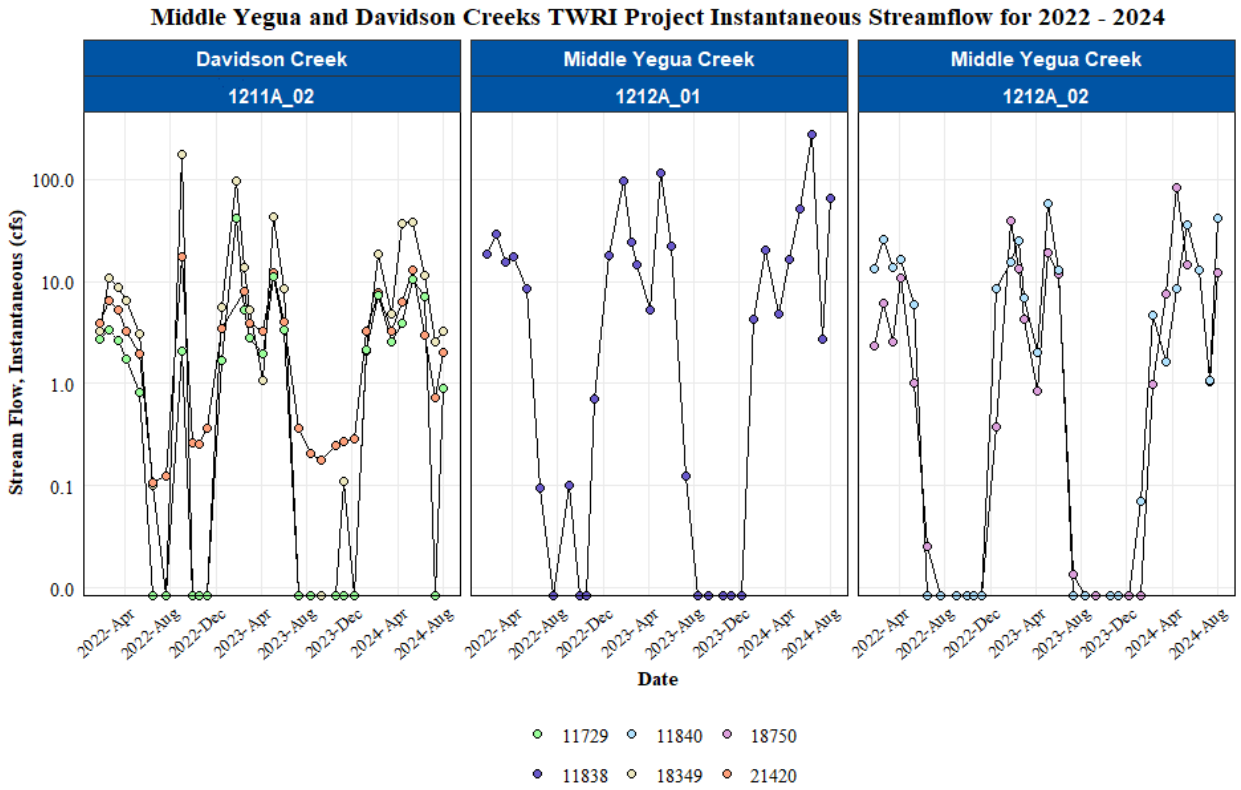

Figure 11: Instantaneous flow values measured in cubic feet per second (cfs) at each project SWQM station in Middle Yegua Creek and Davidson Creek.

Appendix B: Monitoring Data

Middle Yegua Creek

From the confluence with East Yegua and Yegua creeks in Lee County to the Lee County/Williamson County line.

Station 18750

Middle Yegua Creek at FM 696.

Table 1. Sample event data for routine data collection at Station 18750 along Middle Yegua Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100554	2022-01-26	08:22:00 AM	0.09	WR (Texas Water Resource Institute)	TX (Texas State Soil and Water Conservation Board)
TX100560	2022-02-17	09:00:00 AM	0.15	WR	TX
TX100566	2022-03-16	08:49:00 AM	0.08	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100572	2022-04-07	08:20:00 AM	0.15	WR	TX
TX100578	2022-05-11	08:42:00 AM	0.05	WR	TX
TX100584	2022-06-16	08:10:00 AM	0.08	WR	TX
TX100590	2022-07-21	08:02:00 AM	0.20	WR	TX
TX100596	2022-08-31	08:23:00 AM	0.20	WR	TX
TX100602	2022-09-28	08:02:00 AM	0.20	WR	TX
TX100608	2022-10-19	08:41:00 AM	0.20	WR	TX
TX100614	2022-11-09	08:07:00 AM	0.20	WR	TX
TX100620	2022-12-15	08:34:00 AM	0.05	WR	TX
TX100626	2023-01-25	09:00:00 AM	0.26	WR	TX
TX100632	2023-02-15	08:53:00 AM	0.15	WR	TX
TX100638	2023-03-02	08:45:00 AM	0.12	WR	TX
TX100646	2023-04-04	08:35:00 AM	0.07	WR	TX
TX100650	2023-05-03	09:07:00 AM	0.23	WR	TX
TX100656	2023-06-01	08:46:00 AM	0.27	WR	TX
TX100662	2023-07-11	08:54:00 AM	0.03	WR	TX
TX100668	2023-08-10	08:05:00 AM	0.20	WR	TX
TX100674	2023-09-07	08:20:00 AM	0.20	WR	TX
TX100680	2023-10-17	08:01:00 AM	0.00	WR	TX
TX100686	2023-11-08	08:10:00 AM	0.00	WR	TX
TX100696	2023-12-06	08:28:00 AM	0.00	WR	TX
TX100698	2024-01-09	08:10:00 AM	0.20	WR	TX
TX100704	2024-02-08	08:57:00 AM	0.15	WR	TX
TX100710	2024-03-13	09:25:00 AM	0.19	WR	TX
TX100716	2024-04-11	09:00:00 AM	0.30	WR	TX
TX100722	2024-05-09	09:22:00 AM	0.27	WR	TX
TX100728	2024-06-13	08:18:00 AM	0.30	WR	TX
TX100734	2024-07-10	08:53:00 AM	0.09	WR	TX
TX100740	2024-08-01	09:25:00 AM	0.27	WR	TX

Table 2. Field measurements for Station 18750. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	8.9	588.0	7.2	0.62	8.86	411	1
2022-02-17	15.7	1024.0	7.1	0.39	7.15	166	5
2022-03-16	13.8	870.0	6.7	0.88	7.45	326	5
2022-04-07	18.2	797.0	7.1	0.4	6.14	248	8
2022-05-11	26.1	1270.0	6.8	0.36	1.89	326	5

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-06-16	26.8	639.0	7.3	1.02	2.65	1,730	12
2022-07-21	26.7	721.0	7.6	0.5	2.27	9,080	4
2022-08-31	24.6	808.0	6.5	0.13	3.97	36,500	0
2022-09-28	19.6	525.0	6.9	0.53	1.50	155	21
2022-10-19	13.8	537.0	6.6	0.15	0.61	6,500	2
2022-11-09	19.7	477.7	6.8	0.23	0.69	5,730	2
2022-12-15	14.8	536.0	6.7	0.25	1.20	166	1
2023-01-25	8.9	559.0	7.6	0.06	9.79	34,500	1
2023-02-15	13.7	963.0	6.9	0.42	8.30	345	1
2023-03-02	19.5	1117.0	6.9	0.62	5.15	313	13
2023-04-04	22.7	1254.0	6.8	0.72	2.42	219	1
2023-05-03	21.0	712.0	7.0	0.4	6.33	344	6
2023-06-01	23.7	679.0	6.8	0.21	5.14	260	8
2023-07-11	28.2	1315.0	6.9	0.25	4.22	579	31
2023-08-10	27.5	1325.0	7.3	0.56	3.24	114	34
2023-09-07	26.5	1541.0	7.3	0.03	0.52	248	63
2023-10-17	*dry*	*dry*	*dry*	*dry*	*dry*	*dry*	6
2023-11-08	*dry*	*dry*	*dry*	*dry*	*dry*	*dry*	9
2023-12-06	*dry*	*dry*	*dry*	*dry*	*dry*	*dry*	7
2024-01-09	8.4	340.4	7.1	0.9	6.48	140	1
2024-02-08	13.7	449.7	7.2	0.1	6.13	308	5
2024-03-13	17.8	656.7	7.1	0.14	6.08	3,790	5
2024-04-11	18.1	231.0	7.1	0.05	6.40	18,400	1
2024-05-09	25.2	835.0	7.1	0.24	5.30	461	< 1
2024-06-13	26.3	195.1	6.8	*	4.35	4,320	1
2024-07-10	26.6	1315	6.96	0.41	4.08	1,730	4
2024-08-01	27.2	750.0	6.96	0.2	4.97	461	5

*unable to determine sample depth due to flood conditions

Station 11840

Middle Yegua Creek at SH 21.

Table 3: Sample event data for routine data collection at Station 11840 along Middle Yegua Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100555	2022-01-26	08:55:00 AM	0.26	WR	TX
TX100561	2022-02-17	09:32:00 AM	0.30	WR	TX
TX100567	2022-03-16	09:20:00 AM	0.26	WR	TX
TX100573	2022-04-07	09:02:00 AM	0.26	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100579	2022-05-11	09:15:00 AM	0.23	WR	TX
TX100585	2022-06-16	08:36:00 AM	0.13	WR	TX
TX100591	2022-07-21	08:32:00 AM	0.20	WR	TX
TX100597	2022-08-31	08:53:00 AM	0.20	WR	TX
TX100603	2022-09-28	08:35:00 AM	0.20	WR	TX
TX100609	2022-10-19	09:21:00 AM	0.20	WR	TX
TX100615	2022-11-09	08:40:00 AM	0.20	WR	TX
TX100621	2022-12-15	09:01:00 AM	0.25	WR	TX
TX100627	2023-01-25	09:30:00 AM	0.28	WR	TX
TX100633	2023-02-15	09:24:00 AM	0.30	WR	TX
TX100639	2023-03-02	09:17:00 AM	0.25	WR	TX
TX100645	2023-04-04	09:08:00 AM	0.21	WR	TX
TX100651	2023-05-03	09:44:00 AM	0.30	WR	TX
TX100657	2023-06-01	09:20:00 AM	0.27	WR	TX
TX100663	2023-07-11	09:41:00 AM	0.20	WR	TX
TX100669	2023-08-10	08:38:00 AM	0.20	WR	TX
TX100679	2023-09-07	08:54:00 AM	0.00	WR	TX
TX100681	2023-10-17	08:53:00 AM	0.25	WR	TX
TX100687	2023-11-08	08:49:00 AM	0.21	WR	TX
TX100692	2023-12-06	09:30:00 AM	0.20	WR	TX
TX100699	2024-01-09	08:45:00 AM	0.15	WR	TX
TX100705	2024-02-08	09:31:00 AM	0.24	WR	TX
TX100711	2024-03-13	10:03:00 AM	0.20	WR	TX
TX100717	2024-04-11	09:35:00 AM	0.24	WR	TX
TX100723	2024-05-09	09:56:00 AM	0.30	WR	TX
TX100729	2024-06-13	09:08:00 AM	0.26	WR	TX
TX100735	2024-07-10	09:25:00 AM	0.19	WR	TX
TX100741	2024-08-01	10:10:00 AM	0.30	WR	TX

Table 4: Field measurements for Station 11840. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	8.9	756.0	7.5	0.49	10.71	154	1
2022-02-17	15.7	913.0	7.3	0.29	8.89	461	5
2022-03-16	13.4	988.0	7.0	0.41	9.11	172	2
2022-04-07	17.9	1077.0	7.4	0.23	6.93	411	8
2022-05-11	25.3	1046.0	7.1	0.26	5.32	387	5
2022-06-16	25.9	1015.0	7.5	0.95	4.88	62.7	12
2022-07-21	26.5	1185.0	7.7	0.23	4.83	1	25

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-08-31	24.6	818.0	7.2	0.12	4.03	2,420	0
2022-09-28	19.0	636.0	7.3	0.68	6.52	210	20
2022-10-19	14.2	424.8	7.2	0.39	4.49	1,120	2
2022-11-09	19.8	315.1	7.2	0.55	1.57	28.5	4
2022-12-15	13.5	288.6	7.2	0.23	7.60	365	1
2023-01-25	9.0	635.0	7.5	0.11	10.29	7,760	1
2023-02-15	14.3	769.0	7.2	0.33	9.09	172	1
2023-03-02	20.6	853.0	7.3	0.38	7.11	613	13
2023-04-04	22.4	1001.0	7.1	0.26	4.71	1,730	1
2023-05-03	21.5	482.2	7.4	0.19	7.12	199	6
2023-06-01	24.2	822.0	7.2	0.22	6.34	219	8
2023-07-11	26.7	976.0	7.3	0.83	3.96	50.4	31
2023-08-10	26.5	1159.0	7.7	0.63	3.94	28.5	34
2023-09-07	*dry*	*dry*	*dry*	*dry*	*dry*	*dry*	63
2023-10-17	13.7	474.7	6.7	0.20	3.88	172	6
2023-11-08	20.0	506.0	6.7	0.10	1.46	461	9
2023-12-06	9.9	558.0	6.6	0.15	0.60	816	7
2024-01-09	9.3	437.4	7.3	0.06	7.07	548	1
2024-02-08	14.2	522.0	6.9	0.27	8.22	365	5
2024-03-13	18.6	766.2	6.9	0.30	7.34	517	14
2024-04-11	17.6	681.0	7.0	0.12	6.80	3,270	1
2024-05-09	26.1	584.0	7.2	0.08	6.44	435	< 1
2024-06-13	26.1	550.0	7.2	0.15	6.27	488	1
2024-07-10	26.1	662.0	7.2	0.32	4.76	548	2
2024-08-01	28.3	437.1	7.2	0.16	6.11	135	5

Station 11838

Middle Yegua Creek at SH 141.

Table 5: Sample event data for routine data collection at Station 11838 along Middle Yegua Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100556	2022-01-26	09:48:00 AM	0.15	WR	TX
TX100562	2022-02-17	10:40:00 AM	0.17	WR	TX
TX100568	2022-03-16	10:31:00 AM	0.15	WR	TX
TX100574	2022-04-07	10:00:00 AM	0.12	WR	TX
TX100580	2022-05-11	10:25:00 AM	0.10	WR	TX
TX100586	2022-06-16	09:13:00 AM	0.06	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100592	2022-07-21	08:56:00 AM	0.20	WR	TX
TX100598	2022-08-31	09:36:00 AM	0.05	WR	TX
TX100604	2022-09-28	09:03:00 AM	0.20	WR	TX
TX100610	2022-10-19	10:00:00 AM	0.20	WR	TX
TX100616	2022-11-09	09:21:00 AM	0.06	WR	TX
TX100622	2022-12-15	09:55:00 AM	0.12	WR	TX
TX100628	2023-01-25	10:38:00 AM	0.30	WR	TX
TX100634	2023-02-15	10:35:00 AM	0.17	WR	TX
TX100640	2023-03-02	10:25:00 AM	0.10	WR	TX
TX100644	2023-04-04	10:14:00 AM	0.09	WR	TX
TX100652	2023-05-03	11:12:00 AM	0.30	WR	TX
TX100658	2023-06-01	10:35:00 AM	0.15	WR	TX
TX100664	2023-07-11	10:31:00 AM	0.05	WR	TX
TX100670	2023-08-10	09:08:00 AM	0.20	WR	TX
TX100675	2023-09-07	09:28:00 AM	0.20	WR	TX
TX100682	2023-10-17	09:32:00 AM	0.27	WR	TX
TX100688	2023-11-08	09:44:00 AM	0.20	WR	TX
TX100693	2023-12-06	10:14:00 AM	0.23	WR	TX
TX100700	2024-01-09	10:31:00 AM	0.04	WR	TX
TX100706	2024-02-08	11:06:00 AM	0.12	WR	TX
TX100712	2024-03-13	11:58:00 AM	0.06	WR	TX
TX100718	2024-04-11	10:38:00 AM	0.13	WR	TX
TX100724	2024-05-09	11:02:00 AM	0.30	WR	TX
TX100730	2024-06-13	10:25:00 AM	0.30	WR	TX
TX100736	2024-07-10	10:47:00 AM	0.06	WR	TX
TX100742	2024-08-01	11:35:00 AM	0.30	WR	TX

Table 6: Field measurements for Station 11838. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	9.0	819.0	7.4	0.62	10.56	131	1
2022-02-17	14.7	820.0	7.3	0.46	9.54	488	5
2022-03-16	13.7	950.0	7.2	0.87	9.40	56.3	2
2022-04-07	19.6	1022.0	7.3	0.35	6.76	140	8
2022-05-11	27.5	891.0	7.1	0.32	5.54	225	5
2022-06-16	28.5	1058.0	7.3	0.22	4.28	41.7	12
2022-07-21	27.9	1265.0	7.5	0.90	2.28	5.2	25
2022-08-31	25.7	1253.0	7.4	0.40	4.94	116	0
2022-09-28	19.0	690.0	7.2	0.15	4.36	88.2	21

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-10-19	13.4	869.0	7.3	0.93	4.41	11.9	2
2022-11-09	20.5	719.0	7.2	0.19	4.36	82.3	4
2022-12-15	15.0	583.0	7.2	0.29	7.62	326	1
2023-01-25	9.4	304.2	7.8	0.05	10.32	27,600	1
2023-02-15	14.3	738.0	7.2	0.28	9.33	435	1
2023-03-02	20.6	815.0	7.3	0.56	7.06	69.1	13
2023-04-04	23.8	941.0	7.3	0.54	6.29	249	1
2023-05-03	21.8	430.6	7.3	0.20	7.31	153	6
2023-06-01	25.6	808.0	7.2	0.35	6.26	80.5	8
2023-07-11	29.8	1023.0	7.2	0.64	0.55	11	31
2023-08-10	28.5	1341.0	7.3	0.71	1.54	613	34
2023-09-07	27.8	1517.0	7.5	0.27	0.83	37.3	63
2023-10-17	13.8	1334.0	7.3	0.65	5.44	7.5	4
2023-11-08	20.4	1348.0	7.0	0.60	1.55	145	9
2023-12-06	9.5	1314.0	7.1	0.74	3.41	13.2	7
2024-01-09	10.3	388.7	7.2	0.10	8.57	161	1
2024-02-08	14.2	475.5	7.1	0.25	8.67	162	5
2024-03-13	19.3	791.8	6.9	0.25	7.19	166	14
2024-04-11	19.4	977.0	6.8	0.17	6.74	1,730	1
2024-05-09	25.7	617.0	7.3	0.17	6.66	326	< 1
2024-06-13	27.5	560.0	7.22	1.07	5.99	1,550	1
2024-07-10	28.8	634.0	7.22	0.55	6.14	40.4	2
2024-08-01	28.4	392.2	7.19	121	6.09	121	5

Davidson Creek

Intermittent stream with perennial pools from the confluence with Yegua Creek to 1.7 km above CR 322, Milam County.

Station 11729

Davidson Creek upstream of SH 21.

Table 7: Sample event data for routine data collection at Station 11729 along Davidson Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100559	2022-01-26	12:26:00 PM	0.15	WR	TX
TX100565	2022-02-17	12:50:00 PM	0.06	WR	TX
TX100571	2022-03-16	12:57:00 PM	0.08	WR	TX
TX100577	2022-04-07	11:52:00 AM	0.17	WR	TX
TX100583	2022-05-11	12:34:00 PM	0.10	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100589	2022-06-16	11:02:00 PM	0.10	WR	TX
TX100595	2022-07-21	10:48:00 AM	0.20	WR	TX
TX100601	2022-08-31	12:08:00 PM	0.11	WR	TX
TX100607	2022-09-28	10:46:00 AM	0.20	WR	TX
TX100613	2022-10-19	12:40:00 PM	0.20	WR	TX
TX100619	2022-11-09	11:20:00 AM	0.20	WR	TX
TX100625	2022-12-15	12:15:00 PM	0.09	WR	TX
TX100631	2023-01-25	13:01:00 PM	0.30	WR	TX
TX100637	2023-02-15	13:06:00 PM	0.20	WR	TX
TX100643	2023-03-02	12:55:00 PM	0.16	WR	TX
TX100647	2023-04-04	12:50:00 PM	0.12	WR	TX
TX100655	2023-05-03	13:42:00 PM	0.22	WR	TX
TX100661	2023-06-01	13:04:00 PM	0.15	WR	TX
TX100667	2023-07-11	12:19:00 PM	0.20	WR	TX
TX100673	2023-08-10	11:34:00 AM	0.20	WR	TX
TX100678	2023-09-07	12:15:00 PM	0.00	WR	TX
TX100685	2023-10-17	11:54:00 AM	0.30	WR	TX
TX100691	2023-11-08	12:19:00 PM	0.20	WR	TX
TX100697	2023-12-06	13:11:00 PM	0.27	WR	TX
TX100703	2024-01-09	13:05:00 PM	0.18	WR	TX
TX100709	2024-02-08	13:52:00 PM	0.13	WR	TX
TX100715	2024-03-13	14:25:00 PM	0.11	WR	TX
TX100721	2024-04-11	13:27:00 PM	0.09	WR	TX
TX100727	2024-05-09	14:20:00 PM	0.21	WR	TX
TX100733	2024-06-13	13:19:00 PM	0.13	WR	TX
TX100739	2024-07-10	12:50:00 PM	0.30	WR	TX
TX100745	2024-08-01	14:06:00 PM	0.12	WR	TX

Table 8: Field measurement for Station 11729. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	9.5	621.0	7.3	0.41	9.07	388	1
2022-02-17	16.5	894.0	7.0	0.28	7.29	1,120	0
2022-03-16	14.4	910.0	7.2	0.35	7.77	488	2
2022-04-07	17.5	951.0	7.1	0.24	4.93	272	8
2022-05-11	25.7	649.0	7.0	0.13	2.93	214	4
2022-06-16	27.5	752.0	7.5	0.16	4.99	308	13
2022-07-21	27.2	739.0	7.8	0.12	2.26	70.3	10
2022-08-31	25.0	274.1	7.1	0.09	5.18	4,810	0

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-09-28	20.2	421.2	7.4	0.14	2.46	41.7	20
2022-10-19	16.3	549.0	5.9	0.06	0.49	2,420,000	2
2022-11-09	20.7	315.4	7.1	0.31	1.39	7,330	4
2022-12-15	12.4	317.8	7.5	0.30	4.97	687	1
2023-01-25	9.4	499.3	7.7	0.06	10.24	12,700	1
2023-02-15	15.8	735.0	7.2	0.30	8.52	488	1
2023-03-02	20.9	991.0	7.5	0.30	5.90	548	14
2023-04-04	22.7	945.0	7.4	0.25	4.79	461	1
2023-05-03	21.1	614.6	7.4	0.23	6.68	488	5
2023-06-01	24.2	855.0	7.6	0.30	6.19	326	6
2023-07-11	28.6	857.8	7.3	0.40	4.28	18.5	31
2023-08-10	27.5	1017.0	7.7	0.11	4.49	7.4	34
2023-09-07	*dry*	*dry*	*dry*	*dry*	*dry*	*dry*	14
2023-10-17	14.6	280.9	7.4	0.14	4.60	649	5
2023-11-08	21.2	247.1	7.5	0.10	2.42	921	9
2023-12-06	12.2	362.3	7.3	0.20	0.86	727	7
2024-01-09	9.2	364.7	7.2	0.22	8.28	214	< 1
2024-02-08	15.8	658.1	7.3	0.08	8.23	816	< 1
2024-03-13	19.4	865.7	6.9	0.14	6.99	201	5
2024-04-11	18.2	719.0	7.2	0.16	6.70	2420	1
2024-05-09	25.5	553.0	7.0	0.08	5.55	461	4
2024-06-13	26.2	632.0	7.32	0.27	6.01	866	1
2024-07-10	27.9	366.9	7.16	0.41	2.62	921	2
2024-08-01	27.7	466.6	7.34	0.20	4.41	345	5

Station 18349

Davidson Creek near FM 60.

Table 9: Sample event data for routine data collection at Station 18349 along Davidson Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100557	2022-01-26	10:25:00 AM	0.3	WR	TX
TX100563	2022-02-17	11:20:00 AM	0.3	WR	TX
TX100569	2022-03-16	11:16:00 AM	0.3	WR	TX
TX100575	2022-04-07	10:40:00 AM	0.3	WR	TX
TX100581	2022-05-11	11:04:00 AM	0.3	WR	TX
TX100587	2022-06-16	10:01:00 AM	0.3	WR	TX
TX100593	2022-07-21	09:38:00 AM	0.2	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100599	2022-08-31	10:15:00 AM	0.3	WR	TX
TX100605	2022-09-28	09:44:00 AM	0.2	WR	TX
TX100611	2022-10-19	10:40:00 AM	0.2	WR	TX
TX100617	2022-11-09	10:02:00 AM	0.2	WR	TX
TX100623	2022-12-15	10:38:00 AM	0.3	WR	TX
TX100629	2023-01-25	11:24:00 AM	0.3	WR	TX
TX100635	2023-02-15	11:20:00 AM	0.3	WR	TX
TX100641	2023-03-02	11:08:00 AM	0.3	WR	TX
TX100649	2023-04-04	11:20:00 AM	0.3	WR	TX
TX100653	2023-05-03	11:50:00 AM	0.3	WR	TX
TX100659	2023-06-01	11:20:00 AM	0.3	WR	TX
TX100665	2023-07-11	11:09:00 AM	0.3	WR	TX
TX100671	2023-08-10	10:01:00 AM	0.2	WR	TX
TX100676	2023-09-07	10:20:00 AM	0.2	WR	TX
TX100683	2023-10-17	10:19:00 AM	0.25	WR	TX
TX100689	2023-11-08	10:30:00 AM	0.3	WR	TX
TX100694	2023-12-06	11:26:00 AM	0.2	WR	TX
TX100701	2024-01-09	11:15:00 AM	0.3	WR	TX
TX100707	2024-02-08	11:57:00 AM	0.3	WR	TX
TX100713	2024-03-13	12:43:00 PM	0.4	WR	TX
TX100719	2024-04-11	11:20:00 AM	0.3	WR	TX
TX100725	2024-05-09	11:55:00 AM	0.3	WR	TX
TX100731	2024-06-13	11:15:00 AM	0.3	WR	TX
TX100737	2024-07-10	11:32:00 AM	0.3	WR	TX
TX100743	2024-08-01	12:15:00 PM	0.3	WR	TX

Table 10: Field measurements for Station 18349. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	8.6	733.0	7.8	0.95	11.13	178	2
2022-02-17	16.3	782.0	7.5	0.28	9.71	365	0
2022-03-16	14.8	812.0	7.4	0.25	10.65	1,990	1
2022-04-07	18.2	925.0	7.7	0.50	8.72	126	8
2022-05-11	26.4	907.0	7.6	0.31	7.38	816	5
2022-06-16	27.5	905.0	7.7	0.32	5.58	105	12
2022-07-21	27.0	1195.0	7.6	0.29	3.27	15	12
2022-08-31	25.0	211.8	7.6	0.05	4.97	14,700	0
2022-09-28	18.7	589.0	7.3	0.26	4.99	51	13
2022-10-19	13.2	689.0	7.5	0.19	5.04	48	2

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-11-09	20.2	593.0	7.4	0.19	3.38	127	5
2022-12-15	13.5	282.4	7.6	0.15	9.07	1,200	1
2023-01-25	9.6	544.0	7.5	0.05	10.61	12,200	1
2023-02-15	15.6	518.0	7.2	0.13	9.46	411	1
2023-03-02	21.6	762.0	7.6	0.36	9.13	866	14
2023-04-04	22.9	1031.0	7.5	0.35	7.03	397	1
2023-05-03	21.8	416.2	7.5	*	7.56	387	6
2023-06-01	25.3	756.0	7.6	0.31	7.71	276	6
2023-07-11	28.6	1091.0	7.6	0.10	5.22	435	31
2023-08-10	27.0	1609.0	7.6	0.34	5.07	18	34
2023-09-07	27.9	1420.0	7.7	0.38	1.05	1	14
2023-10-17	14.2	1991.0	7.3	0.75	4.60	196	6
2023-11-08	21.0	1404.0	7.3	0.26	5.05	156	9
2023-12-06	8.9	1474.0	7.0	0.21	2.44	47	7
2024-01-09	9.3	321.5	7.4	0.13	10.28	461	1
2024-02-08	15.3	504.0	7.4	0.15	9.20	365	1
2024-03-13	20.0	946.3	7.7	0.40	8.40	613	31
2024-04-11	19.2	516.0	7.5	0.30	7.72	7,760	1
2024-05-09	25.7	373.9	7.5	0.11	6.97	613	4
2024-06-13	27.2	572.0	7.61	0.11	7.26	1,550	1
2024-07-10	28.1	707.0	7.64	0.17	6.35	435	2
2024-08-01	29.2	360.9	7.50	0.16	6.97	161	5

*Secchi depth was not recorded for this event.

Station 21420

Davidson Creek at Burleson CR 122.

Table 11: Sample event data for routine data collection at Sation 21420 along Davidson Creek.

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100558	2022-01-26	11:50:00 AM	0.3	WR	TX
TX100564	2022-02-17	12:09:00 PM	0.2	WR	TX
TX100570	2022-03-16	12:08:00 PM	0.3	WR	TX
TX100576	2022-04-07	11:20:00 AM	0.2	WR	TX
TX100582	2022-05-11	12:00:00 PM	0.2	WR	TX
TX100588	2022-06-16	10:45:00 AM	0.2	WR	TX
TX100594	2022-07-21	10:30:00 AM	0.3	WR	TX
TX100600	2022-08-31	11:32:00 AM	0.3	WR	TX
TX100606	2022-09-28	10:29:00 AM	0.1	WR	TX
TX100612	2022-10-19	12:13:00 PM	0.3	WR	TX

Tag ID	Date	Time	End Depth	Collecting Agency	Submitting Agency
TX100618	2022-11-09	11:00:00 AM	0.3	WR	TX
TX100624	2022-12-15	11:40:00 AM	0.3	WR	TX
TX100630	2023-01-25	12:11:00 PM	0.3	WR	TX
TX100636	2023-02-15	12:26:00 PM	0.3	WR	TX
TX100642	2023-03-02	12:15:00 PM	0.3	WR	TX
TX100648	2023-04-04	12:13:00 PM	0.3	WR	TX
TX100654	2023-05-03	12:58:00 PM	0.3	WR	TX
TX100660	2023-06-01	12:18:00 PM	0.3	WR	TX
TX100666	2023-07-11	11:57:00 AM	0.1	WR	TX
TX100672	2023-08-10	11:02:00 AM	0.2	WR	TX
TX100677	2023-09-07	11:32:00 AM	0.2	WR	TX
TX100684	2023-10-17	11:23:00 AM	0.2	WR	TX
TX100690	2023-11-08	11:48:00 AM	0.3	WR	TX
TX100695	2023-12-06	12:43:00 PM	0.2	WR	TX
TX100702	2024-01-09	12:22:00 PM	0.3	WR	TX
TX100708	2024-02-08	13:15:00 PM	0.3	WR	TX
TX100714	2024-03-13	13:40:00 PM	0.3	WR	TX
TX100720	2024-04-11	12:24:00 PM	0.3	WR	TX
TX100726	2024-05-09	13:06:00 PM	0.3	WR	TX
TX100732	2024-06-13	12:19:00 PM	0.3	WR	TX
TX100738	2024-07-10	12:19:00 PM	0.12	WR	TX
TX100744	2024-08-01	13:21:00 PM	0.13	WR	TX

Table 12: Field measurements for Sation 21420. Red shading indicates that parameter does not meet criterion.

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2022-01-26	9.4	757.0	7.5	0.50	9.72	488	1
2022-02-17	16.1	919.0	7.3	0.50	8.21	727	0
2022-03-16	14.8	948.0	7.4	0.38	10.02	649	2
2022-04-07	18.1	955.0	7.4	0.72	5.41	365	8
2022-05-11	25.5	765.0	7.3	0.11	4.28	225	4
2022-06-16	26.4	763.0	7.7	1.20	4.03	88.4	13
2022-07-21	27.1	892.0	7.8	0.65	2.23	1,410	12
2022-08-31	24.9	228.6	7.2	0.07	5.10	11,400	0
2022-09-28	19.1	910.0	7.7	0.68	5.22	36.4	20
2022-10-19	13.7	940.0	7.5	0.19	1.17	6,630	2
2022-11-09	19.8	507.0	7.3	0.60	2.73	80.1	4
2022-12-15	14.4	439.4	7.4	0.30	5.64	225	1

Date	Water Temperature (Celsius)	Specific Conductance (microS/cm)	pH	Secchi Depth (m)	Dissolved Oxygen (mg/L)	*E. coli* (MPN/ 100mL)	Days Since Last Precipitation Event
2023-01-25	9.6	552.0	7.5	0.14	10.08	13,100	1
2023-02-15	15.4	763.0	7.3	0.40	0.36	613	1
2023-03-02	21.1	969.0	7.5	0.66	6.27	435	14
2023-04-04	22.4	1012.0	7.6	0.25	4.70	313	1
2023-05-03	20.6	635.0	7.5	0.31	6.42	326	6
2023-06-01	24.2	890.0	7.3	0.47	5.21	142	6
2023-07-11	27.7	982.0	7.5	0.87	3.95	291	31
2023-08-10	27.6	954.0	7.8	0.15	2.65	326	34
2023-09-07	27.7	1039.0	7.9	0.12	2.21	108	14
2023-10-17	13.6	407.0	7.6	0.46	6.48	1,300	6
2023-11-08	20.5	844.0	7.8	0.15	4.69	219	9
2023-12-06	10.2	867.0	7.5	0.18	2.76	158	7
2024-01-09	9.3	373.5	7.3	0.14	8.39	488	1
2024-02-08	14.7	672.5	7.2	0.38	7.78	185	< 1
2024-03-13	19.0	936.1	7.2	0.54	6.24	435	13
2024-04-11	18.3	433.0	7.2	0.30	5.08	1,730	1
2024-05-09	25.5	526.0	7.2	0.18	5.11	387	< 1
2024-06-13	26.1	446.1	7.2	0.22	4.40	921	1
2024-07-10	26.2	818.0	7.5	0.58	4.56	308	2
2024-08-01	27.587	558.0	7.3	0.23	4.31	980	5

Data Conclusions

TWRI worked diligently to complete all project tasks and turn in deliverables on time to the TSSWCB through the project time period. As a result, more water quality data was collected for the watersheds and made accessible for future planning within the Middle Yegua Creek and Davidson Creek watersheds. The additional 32 monthly ambient water quality data samples for each creek fill data gaps enabling future water quality assessments and watershed analysis. This data will be a great tool for stakeholders to determine a path forward for improving the water quality in the watersheds.

Projects such as this are why accomplishments are being made toward restoring water quality in Texas. The need for such projects statewide in the future is crucial for continued success.

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