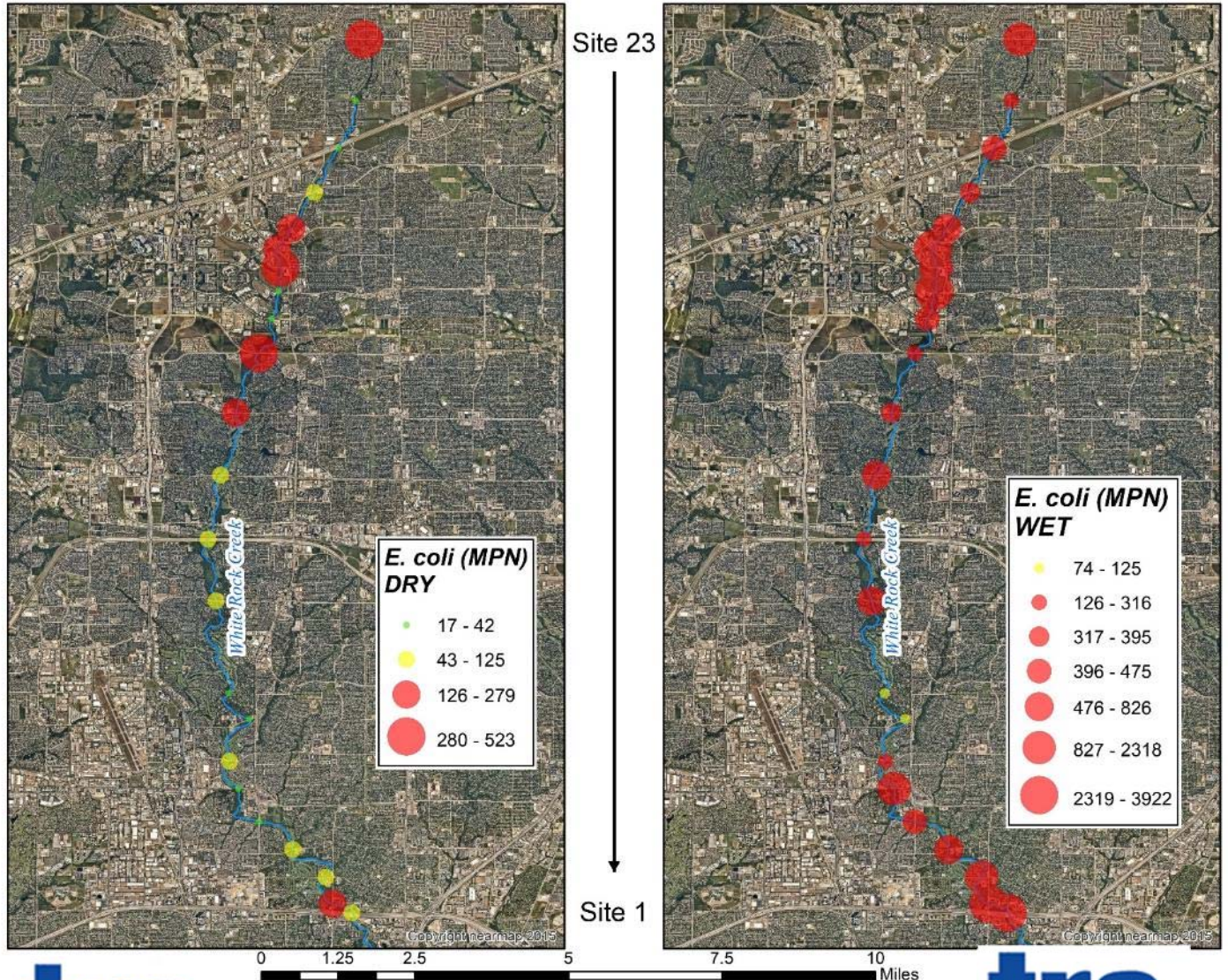


2020 White Rock Creek *E. coli* Data Report

Trinity River Authority of Texas



Acknowledgements

The preparation of this report was financed through funding from the Texas Commission on Environmental Quality under Agreement No. 582-18-80164. Additional cooperators include the cities of Dallas, Fort Worth, Grand Prairie, Arlington, and Irving, as well as Tarrant Regional Water District, TRA Lake Livingston Project, Dallas/Fort Worth International Airport Environmental Affairs Department, and North Texas Municipal Water District, as well as members of the Trinity River Authority's Clean Rivers Program Steering Committee.

Acronyms

CRP – Clean Rivers Program

MPN – Most Probable Number

TCEQ – Texas Commission on Environmental Quality

TRA – Trinity River Authority of Texas

TX – Texas

Table of Contents

2020 White Rock Creek <i>E. coli</i> Data Report.....	1
Acknowledgements	2
Acronyms	3
Introduction	5
Methods	8
Sites and Parameters	8
Sampling.....	8
Phase I – Coarse-scale Sampling	9
Phase II – Targeted Sampling.....	9
Results	10
Dry-weather	14
Coarse-scale Sampling	14
Targeted Sampling.....	14
Wet-weather	20
Coarse-scale Sampling	20
Discussion.....	24
References.....	25
Appendix A – Site Locations and Schedule.....	26
Appendix B – Measurement Performance Specifications.....	29
Appendix C – Field Data Table and Data Review Checklist.....	31

Introduction

White Rock Creek begins near Frisco, TX in the northern part of the Dallas/Fort Worth Metroplex, and travels approximately 30-miles through the heart of Dallas before terminating into the West Fork Trinity River. Along the way, the creek is impounded for small amenity ponds, used for irrigation water, and modified at many bridge crossings. Surprisingly, the majority of White Rock Creek is still protected by a significant riparian buffer. In 1913, White Rock Creek was dammed just upstream of what is now Interstate 30 to create White Rock Lake as a water supply for Dallas. Today, White Rock Creek and Lake are heavily utilized recreational areas with an extensive hike and bike trail network that gives people in this highly urbanized watershed access to open and natural spaces.

Urban streams with large riparian areas can have unique water quality challenges because they encounter both anthropogenic and natural point and non-point sources. Segment 0827A, White Rock Creek above White Rock Lake, has previously been found to have concerns for elevated levels of *E. coli* bacteria. The 2016 Texas Integrated Report identified this segment as not supporting the contact recreation use. This impairment was also identified in the 2018 Texas Integrated Report as well as the 2020 Texas Integrated Report.

The non-support designation was based solely on Trinity River Authority (TRA) routine data collected at a single sampling site (20289) located at White Rock Creek and Interstate 635 in Dallas, TX. Data from a single site can be appropriate for problem identification, but additional sites are needed to identify potential *E. coli* sources. Hydrologic conditions are known to be drivers of bacteria impairments throughout Texas and can be indicators of potential sources. For example, high *E. coli* values during rising flows can indicate that bacteria is being washed into the stream from water flowing across the landscape. Conversely, high *E. coli* values during periods of low flow with little to no overland runoff indicate potential point sources like broken wastewater infrastructure.

The Texas Clean Rivers Program (CRP) was established in 1991 to provide a non-regulatory framework for addressing water quality issues in a holistic manner. TRA is the CRP partner in the Trinity basin and implements the program under a grant from the Texas Commission on Environmental Quality (TCEQ). One of the objectives for the CRP is to identify and evaluate water quality issues. This project used bracketed field data collection during both wet and dry-weather conditions to identify potential sources

of *E. coli* in White Rock Creek (above White Rock Lake) and to provide the results to the appropriate regulatory authority for that subwatershed for enforcement.

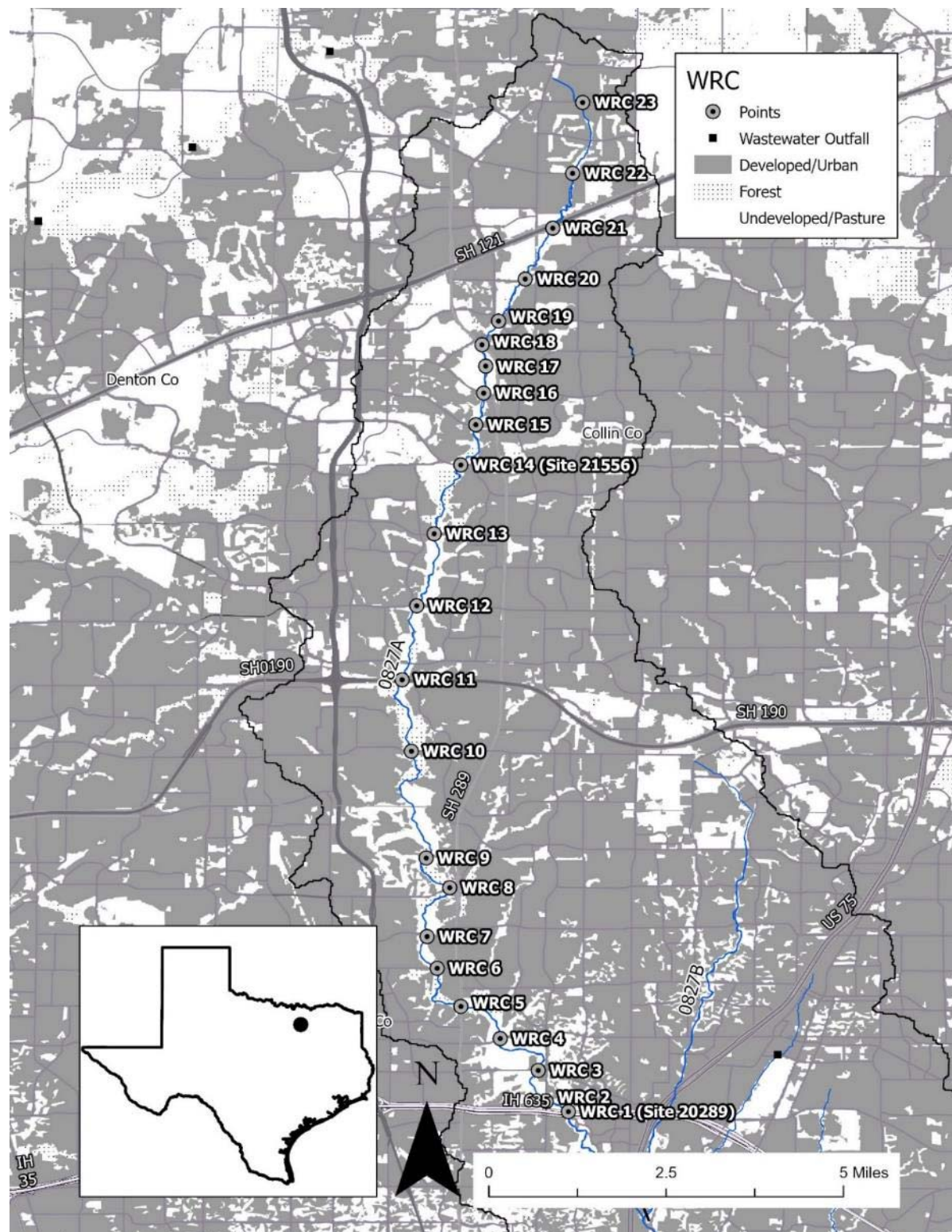


Figure 1. Map of the White Rock Creek *E. coli* Study Area showing sites and land cover.

Methods

Sites and Parameters

To bracket potential sources, twenty-three bridge crossings (Appendix A – Site Locations and Schedule) were identified in segment 0827A, White Rock Creek above White Rock Lake, that were approximately evenly spaced apart, could be completed on the same day, bracketed ephemeral tributaries and engineered drainages, and provided all-weather safe sampling conditions to collect the following water sample parameters:

1. *E. coli*;
2. Optical brighteners¹
3. Dissolved oxygen;
4. Water temperature;
5. pH; and
6. Specific conductance.

Sampling

Sampling was completed according to the schedule below:

1. Dry Study-area Wide – 7/16/2019
2. Dry Fine-scale – 10/10/2019
3. Wet Study-area Wide – 5/12/2020
4. Wet Fine-scale – 6/23/2020

All data were collected according to plan, except for a single missing Secchi depth measurement from the Wet Fine-scale event, which was not recorded in the field, and most of the optical brightener measurements. Optical brightener samples were inconclusive during the first sampling event, so the parameter was dropped as it provided no information or context to the results. TRA has found during other sampling activities that the dyes used to stain golf course turfs green fluoresce the same color as optical brighteners seen in wastewater but completely saturate the sample media. Therefore, no conclusions about sources can be made from optical brightener samples impacted by golf courses.

¹ Optical brighteners are a common component of laundry detergents and other cleansers and have been used to identify area of anthropogenic pollutant inputs (Chandler and Lerner, 2015).

All results have been quality assured and the final data table is included at the end of this report (Appendix C – Field Data Table and Data Review Checklist)

Sampling was divided into two phases in order to capture a range of conditions and potentially bracket point and non-point sources of *E. coli*. Each phase is discussed in detail below.

Phase I – Coarse-scale Sampling

Wet-weather

Sampling was completed from bridges during wet-weather conditions. Wet-weather was defined as at least 0.2 inches of rainfall in the preceding 24-hours and a rising hydrograph as indicated by USGS Gage #08057200 White Rock Creek at Greenville Avenue in Dallas.

Dry-weather

Sampling was completed from bridges and defined as baseflow conditions with flow reported below 20 cfs at the USGS gage at Greenville and no appreciable rain within the previous two days.

Phase II – Targeted Sampling

Wet and Dry-weather

Wet and dry-weather study area-wide events were analyzed individually as separate, disconnected events and the process used to select targeted reaches for further sampling was the same. If the results between two consecutive sites were above the 126 MPN/100 mL standard and resulted in an order of magnitude or greater increase in *E. coli*, then fine-scale sampling was completed in that reach. If no reaches fit these criteria, then the two reaches with the largest relative percent increase were investigated. Sampling methods consisted of TRA staff walking the reach between the bridge sites and collecting water samples in locations that appear to be potential *E. coli* inputs that may not be visible in aerial imagery. The targeted sampling locations were intentionally non-prescriptive and based on field observations and best professional judgement. Examples include unknown pipe outfalls, odor, water color changes, broken infrastructure, storm drains, seeps, rills, and etcetera. No obvious infrastructure damage was found. However, if this had occurred, field staff were instructed to halt sampling activities and the appropriate entity would have been notified to initiate repairs.

Results

The *E. coli* geomean for the for the Dry-weather study area-wide sampling event was 91.36 MPN/100 mL, which is below the 126 MPN/100 mL standard, with 7 of 23 sites exceeding. For Wet-weather study area-wide sampling, the geomean was 696 MPN/100 mL with 21 of the 23 samples exceeding the standard. These values indicate that there are likely both point and non-point sources of *E. coli* affecting the water quality in White Rock Creek (Figure 2 & Figure 3)

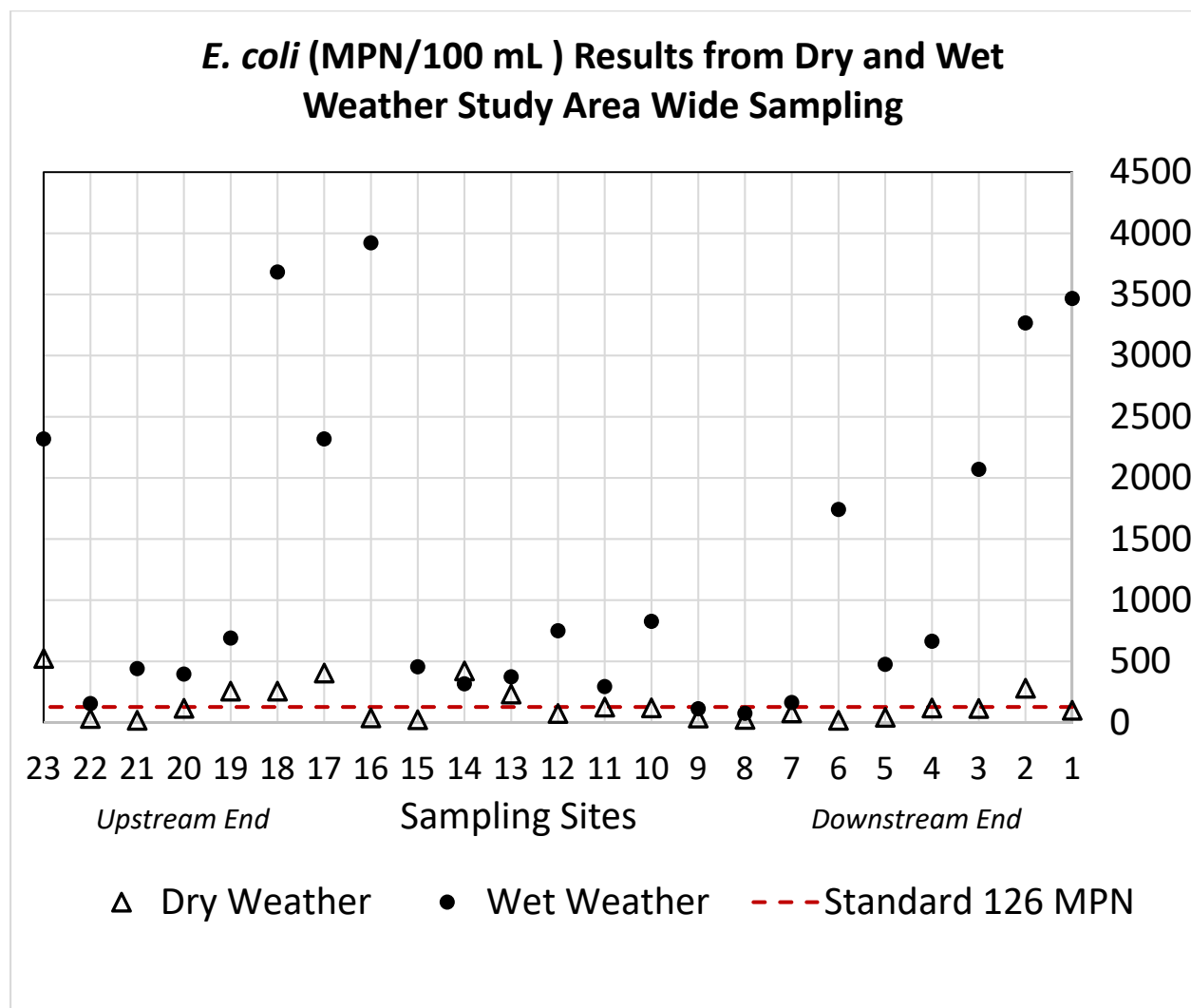


Figure 2. Comparison of *E. coli* Results Between the Coarse-scale Wet and Dry Sampling Events.

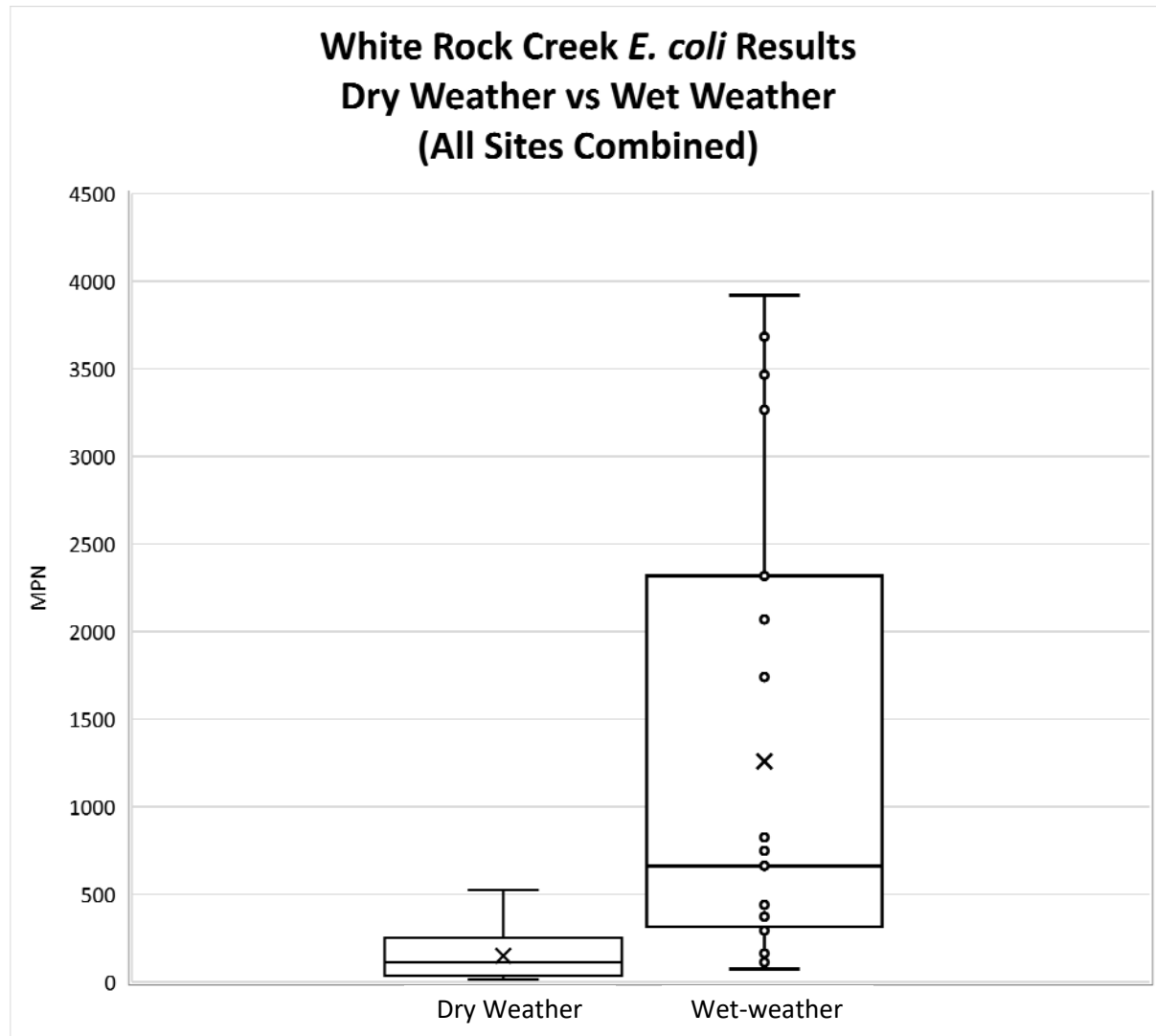


Figure 3. Boxplot of Coarse-scale Dry-weather and Wet Weather samples.

It is common for *E. coli* values to vary widely between sites and many times, consecutive samples within the same reach of a waterbody can be highly variable. Therefore, it is appropriate to study *E. coli* results at a broad scale. A visual analysis of the data shown in Figure 4 suggests that bacteria concentrations follow the same general pattern for both wet and dry events, though the concentrations are very different. The upstream site near the headwaters flows directly from a very dense, single-family development and is likely delivered to White Rock Creek through stormwater drains. Concentrations reduce as the valley opens and a small riparian buffer begins.

As White Rock Creek passes through the highly developed, multi-use area near Stonebriar Mall and south of TX 121 in Plano, the values begin to spike². Downstream of Parker Road in Plano, White Rock Creek *E. coli* concentrations show significant reduction as the riparian buffer returns and development generally returns to single family. As the stream passes the area near Dallas Love Field Airport, the concentrations begin to increase slightly, though the generally wide and contiguous riparian buffer and open space may mitigate some of the loadings. Towards the downstream end near I-635 in Dallas, *E. coli* concentrations begin to spike again.

² With the exception of the reaches that are impounded; possibly due to ultraviolet die off.

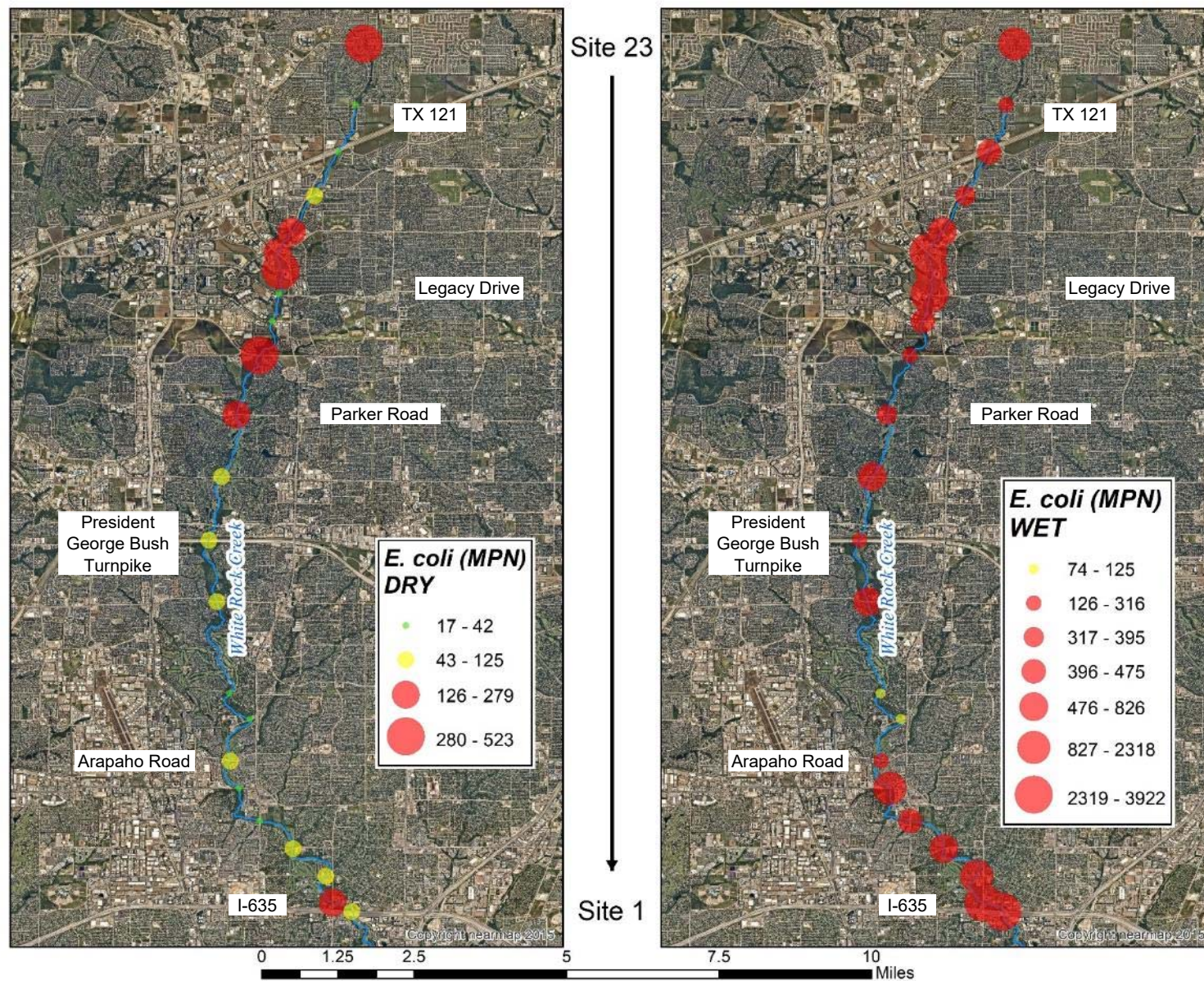


Figure 4. Aerial imagery showing the *E. coli* concentration results from both the dry and wet-weather sampling events.

Dry-weather

Coarse-scale Sampling

The required threshold for targeted sampling was not met between any of the sampling sites, so the two reaches that showed the highest increase in relative percent increase were selected for detailed, dry-weather targeted sampling (Table 1).

Table 1. Table Showing the Two Reaches Selected for Further Dry-weather Fine-scale sampling.

Site	Description	<i>E. coli</i> (MPN/100 mL)	Absolute Difference (MPN)	Relative Percent Increase (%)
21	WRC 21 White Rock Creek at SH 121	17	98	148
20	WRC 20 White Rock Creek at McDermott Rd	115		
15	WRC 15 White Rock Creek at Tennyson Pkwy	22	398	1810
14	WRC 14 (21556) White Rock Creek at West Spring Creek	420		

Targeted Sampling

Reach 20-21

TRA staff walked the stream reach between sites 20 and 21 and the results are shown in Table 2 and the map in Figure 5. The most upstream sampling site showed a high *E. coli* value of 2,092 MPN/100 mL, but that number dropped to 117 MPN/100 mL and 90 MPN/100 mL at the next two sampling sites. The next sample was taken just downstream of a creek confluence that came in from the northwest. This sample result was very large, >4,839 MPN/100 mL, indicating that this watershed is contributing quite a bit of *E. coli* at low flows (Figure 6). At the downstream boundary, the *E. coli* was down to 821.

Analysis of aerial imagery showed that between August 1 and October 17, the watershed that drains the land upstream of the creek confluence where the extremely high *E. coli* value (>4,839 MPN/100 mL) was reported was converted from pasture into a major, active construction site (Figure 7). It is likely that runoff from the construction site is the cause for the *E. coli* loadings. This information was shared with the City of Plano. There were no other notable changes between the sites to any of the other water quality parameters collected.

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Table 2. Table Showing Reach 20-21 Dry-weather, Fine-scale *E. coli* Results.

Fine-scale Site	Description	<i>E. coli</i> (MPN/100 mL)
WRC DRY FS10	Downstream of SH 121	2,092
WRC DRY FS12	Culvert, cloudy water	117
WRC DRY FS11	Downstream culvert	90
WRC DRY FS9	DS Creek inlet on river right	>4,839
WRC DRY FS8	McDermott Rd Bridge	821

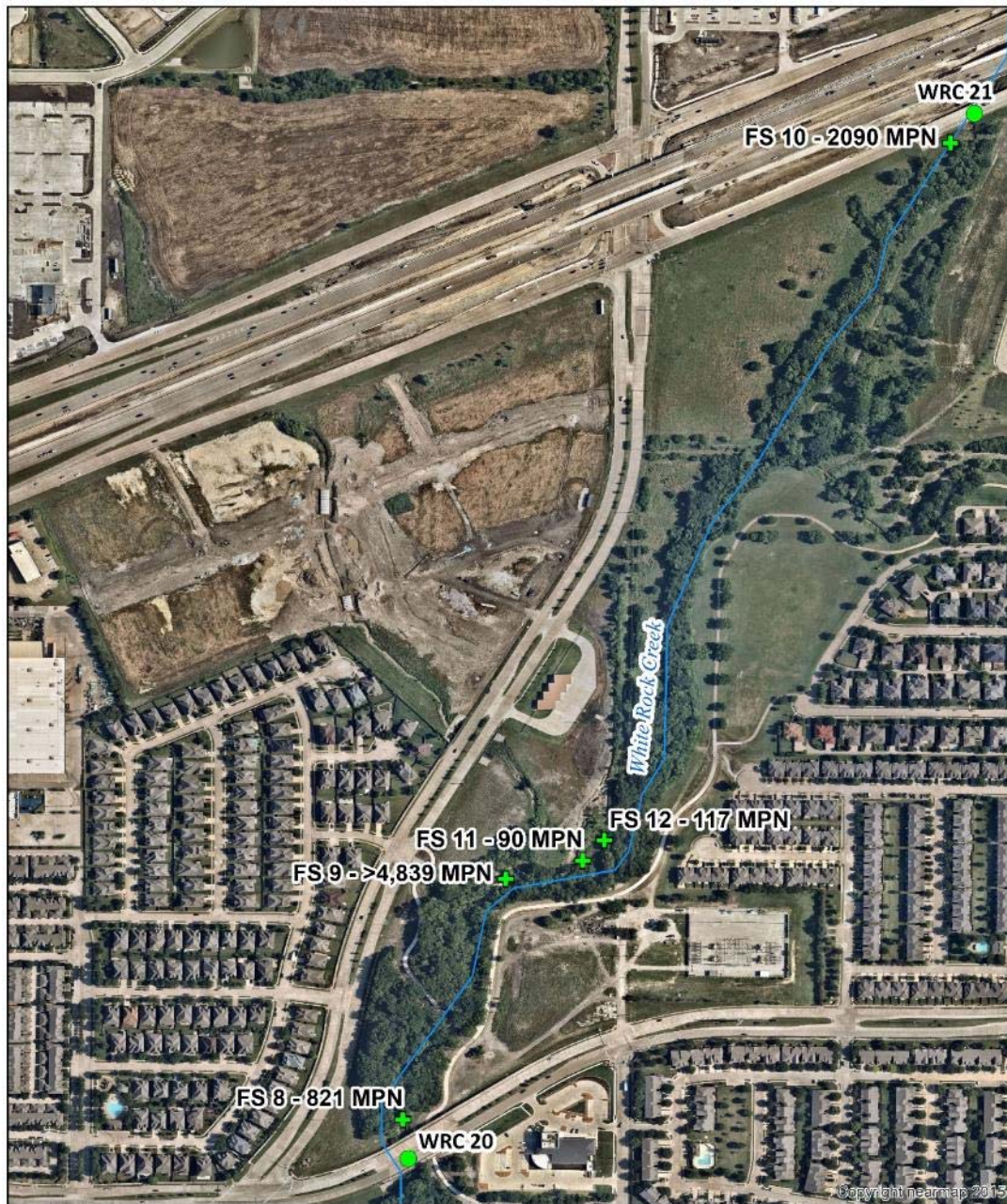


Figure 5 Map showing reach 20-21 Dry-weather, Fine-scale *E. coli* Results.



Figure 6. Two photographs showing the inflow location from the tributary just upstream of FS 9 ($> 4,839$ MPN/100 mL *E. coli*).



Figure 7. Comparison of two aerial images taken before and after the conversion of pastureland to a large construction site (NearMap, 2020).

Reach 14-15

TRA staff walked the stream reach between sites 14 and 15 and selected seven sites for targeted sampling. The sites are described and the *E. coli* results are shown in Table 3 and the map in Figure 8. No notable inputs of *E. coli* were identified and all of the results were far below the 126 MPN/100 mL standard, except for the downstream site (WRC DRY FS2) which showed 321 MPN/100 mL. No potential outfalls or source locations were observed; it is likely the bridge facilitates the direct input of *E. coli* either through wildlife or anthropogenic sources. Previous studies have shown that birds nesting under bridges can be a driver of *E. coli* loadings in the Dallas/Fort Worth area (Pendergrass, Huack, & McFarland, 2013).

Table 3. Table Showing Reach 14-15 Dry-weather, Fine-scale *E.coli* Results.

Fine-scale Site	Description	<i>E. coli</i> (MPN/100 mL)
WRC DRY FS7	Tennyson Pkwy Rd Bridge	37
WRC DRY FS1	Dam DS Tennyson PKWY	10
WRC DRY FS6	Utility easement upstream of dam	10
WRC DRY FS5	Inlet downstream dam US low water crossing	10
WRC DRY FS4	DS low water crossing	32
WRC DRY FS3	Upstream Spring Creek Parkway Bridge	2
WRC DRY FS2	W Spring Creek Parkway	321

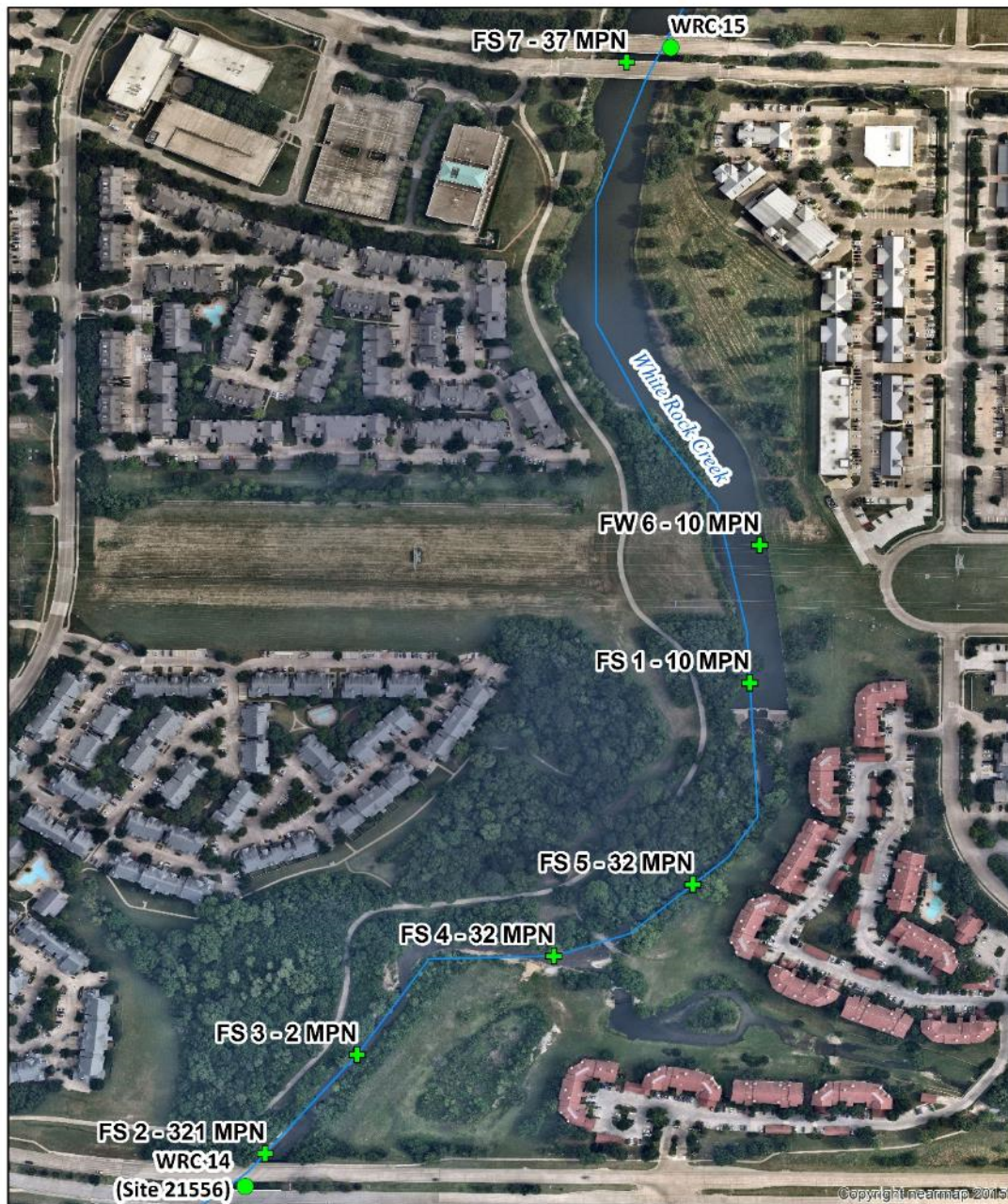


Figure 8. Aerial Imagery showing Reach 14-15 Dry-Weather, Fine-scale *E. coli* Results.

Wet-weather

Coarse-scale Sampling

The required threshold for targeted wet-weather sampling was met for three reaches between sites 18-19, 6-8³, and 3-4 (Figure 1) and the data are shown in Table 4 and the aerial images displayed in Figure 9, Figure 10, and Figure 11.

Table 4. Table showing results from wet-weather, fine-scale sampling for *E. coli*.

Fine-scale Site	Description	<i>E. coli</i> (MPN/100 mL)
WRC WET FS1	WRC 3	9,932
WRC WET FS2	WRC 3.1	9,932
WRC WET FS3	WRC 4	12,098
WRC WET FS4	WRC 6	8,664
WRC WET FS5	WRC 7	7,068
WRC WET FS6	WRC 7.1 West fork trib just US of WRC 7	9,932
WRC WET FS7	WRC 7.2 Eastern fork just US of WRC 7	12,098
WRC WET FS8	WRC 7.3 Pond DS of WRC 7	725
WRC WET FS9	WRC 8	>12,098
WRC WET FS10	WRC 18	4,604
WRC WET FS11	WRC 18.1 Drainage ditch near WRC 18	442
WRC WET FS12	WRC 19.1 Fork downstream of WRC 19	3,434
WRC WET FS13	WRC 19	5,231

All of the results were far above the standard and no discernable pattern or sources of inputs could be determined. In short, *E. coli* was ubiquitous throughout the system and in all three cases, the upstream value for *E. coli* was higher than the downstream indicating a *reduction* throughout the reach. Two of the three reaches bracketed golf courses, but looking at the entire study area, there are an additional four reaches that contain all or part of a golf course, and they did not meet the criteria for fine-scale analysis.

³ These 3 consecutive sites were combined into one reach for brevity of analysis.

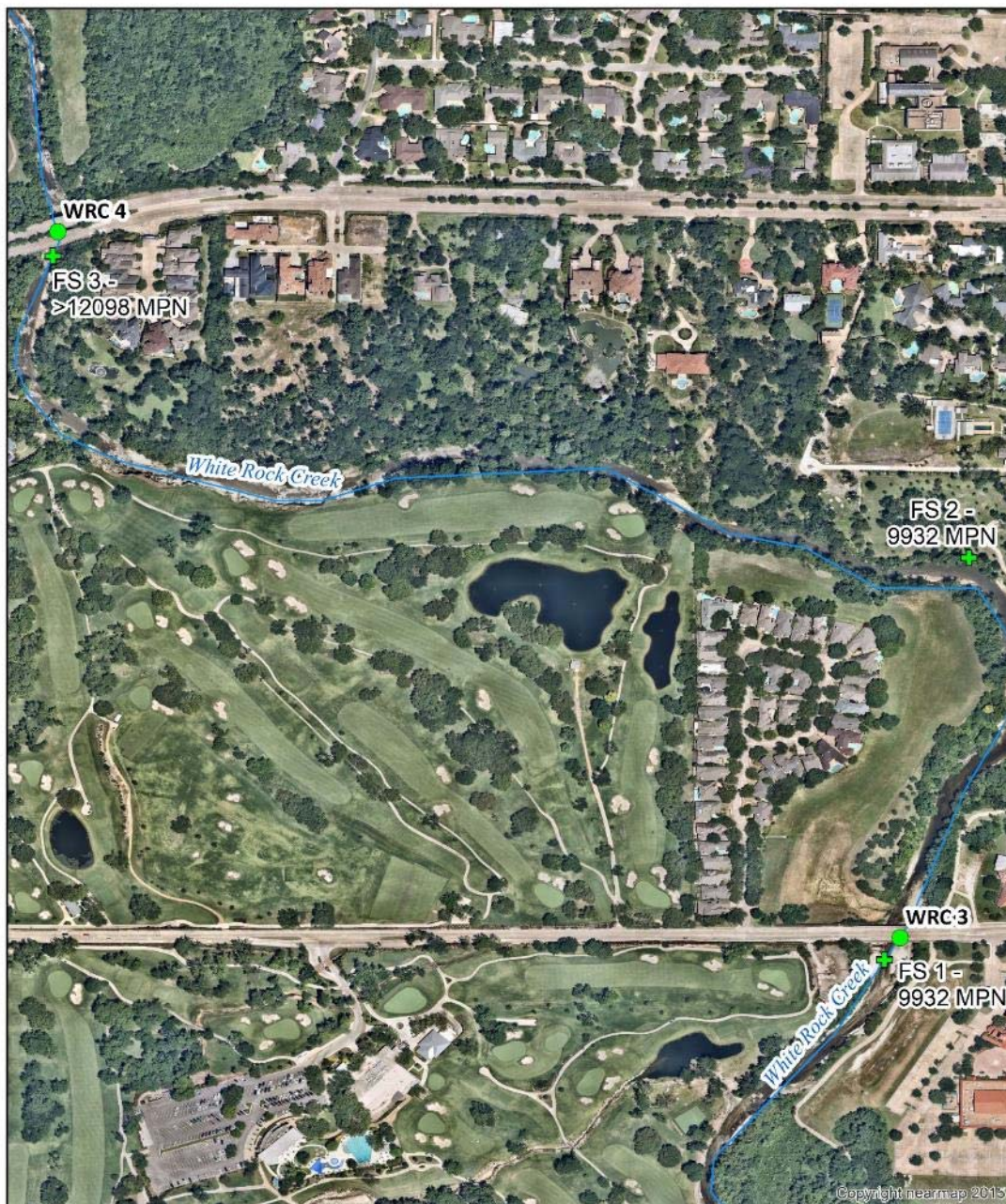


Figure 9. Aerial image showing the results from reach 3-4 wet-weather, fine-scale sampling.

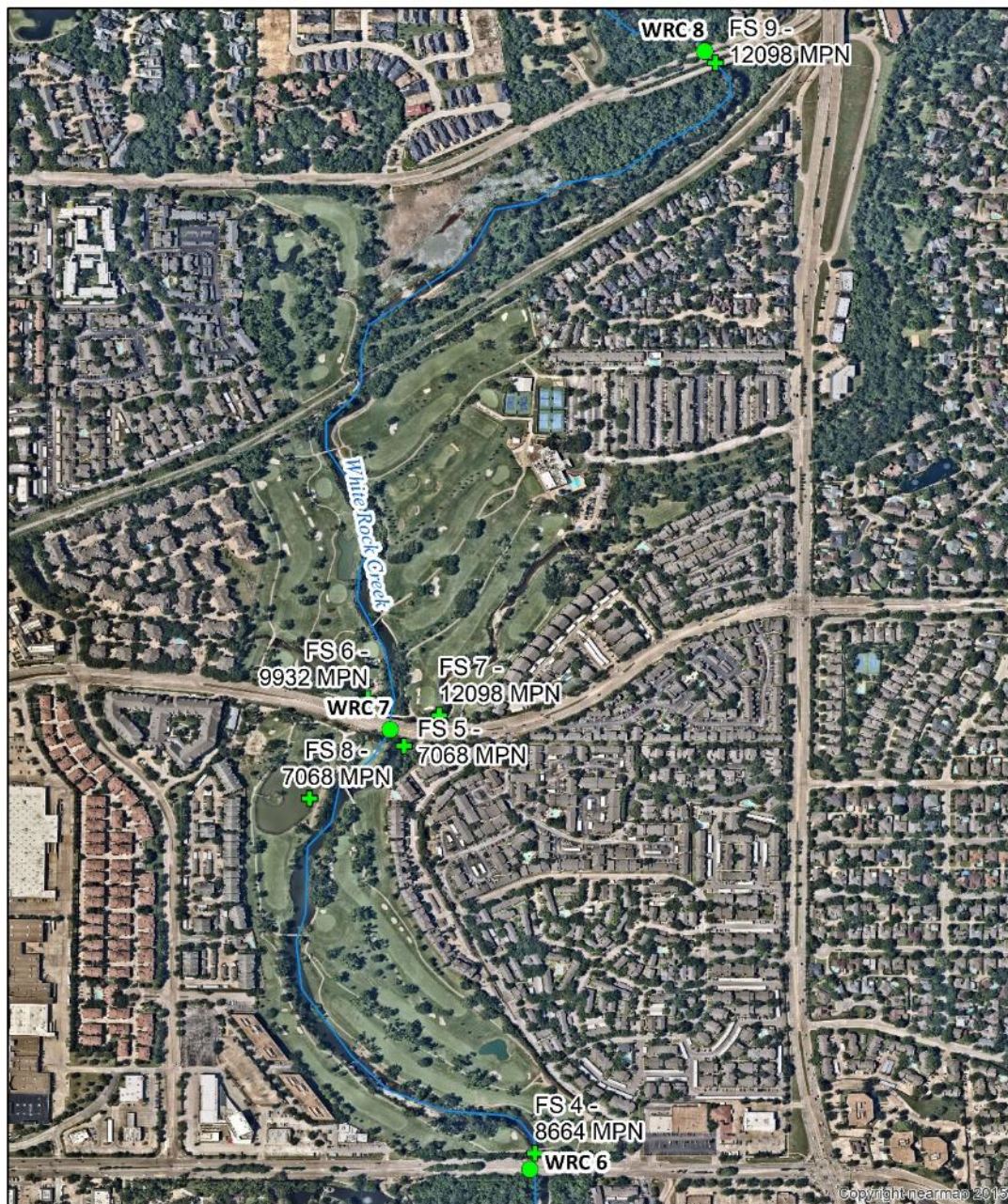


Figure 10. Aerial image showing the results from reach 6-8 wet-weather, fine-scale sampling.

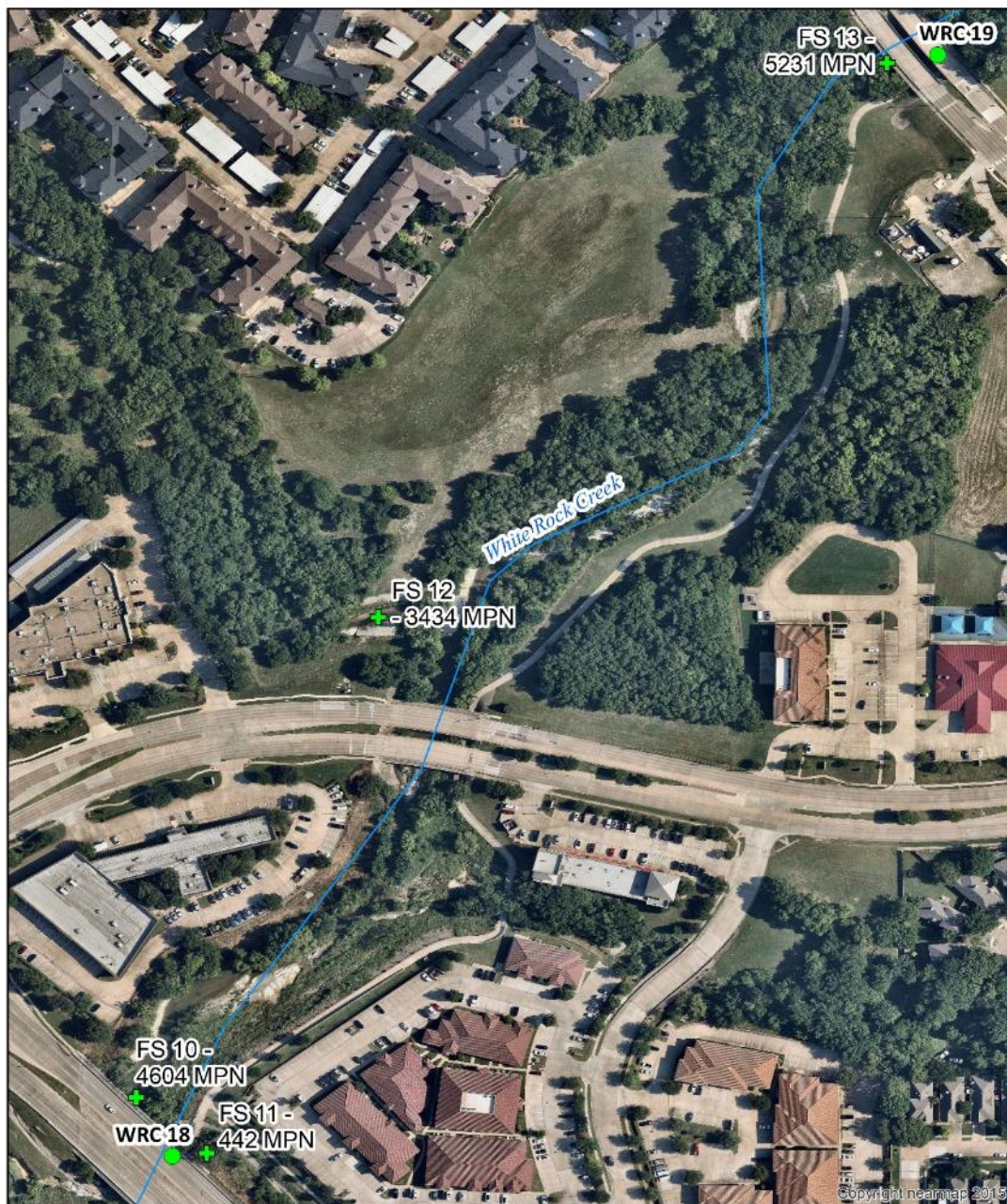


Figure 11. Aerial image showing the results from reach 18-19 wet-weather, fine-scale sampling.

Discussion

The intent of this project was to use empirical data to locate sources of *E. coli* loadings into White Rock Creek and to deliver that information to the appropriate entity for action. As discussed, only one specific location – White Rock Creek downstream of SH 121 - was found and that information was delivered to the City of Plano. Staff from the city have visited that site and have spoken with the landowner. City staff have noted the area immediately adjacent to White Rock Creek is undergoing residential construction. Recent site visits in January 2021 indicate that the construction is ongoing. There are cultivated agricultural fields and additional residential construction upstream of SH 121. As these areas of residential construction disturbed the sediments of previously agricultural fields, runoff from these construction sites may have contributed bacteria to the stream. No follow-up monitoring by the Trinity River Authority Clean Rivers Program is planned at this time.

Unfortunately, the wet weather results were inconclusive and no specific areas of inputs were identified from the data. It is possible that golf courses are significant *E. coli* contributors, but further study is needed. This could include additional sampling in the water features of these golf courses. Bacterial source tracking studies may also be beneficial in identifying golf courses as contributors. These studies would require identification of wildlife in and around the golf courses and collection of their waste in order to build a DNA library. The DNA library could then be used to compare to *E. coli* DNA in downstream samples to track the *E. coli* in the stream back to wildlife fecal samples collected on the golf courses.

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Appendix A – Site Locations and Schedule

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Site Description	Station ID	Waterbody ID	Latitude	Longitude	Region	SE	CE	MT	Bacteria	Field	Comments
White Rock Creek at IH635 north service road immediately west of Park Central Drive	WRC 1 (20289)	0827A	32.9248	-96.7817	04	TR	TR	BFSI	2	2	
White Rock Creek at Hillcrest Rd	WRC 2	0827A	32.92686111	-96.78623333	04	TR	TR	BFSI	2	2	
White Rock Creek at Alpha Rd	WRC 3	0827A	32.93319444	-96.78785833	04	TR	TR	BFSI	2	2	
White Rock Creek at Spring Valley Rd	WRC 4	0827A	32.93969167	-96.79560833	04	TR	TR	BFSI	2	2	
White Rock Creek at Preston Rd (south)	WRC 5	0827A	32.94623333	-96.80362222	04	TR	TR	BFSI	2	2	
White Rock Creek at Belt Line Rd	WRC 6	0827A	32.95401667	-96.80846667	04	TR	TR	BFSI	2	2	
White Rock Creek at Arapaho Rd	WRC 7	0827A	32.96048333	-96.81051944	04	TR	TR	BFSI	2	2	
White Rock Creek at Keller Springs Rd	WRC 8	0827A	32.97044444	-96.80590556	04	TR	TR	BFSI	2	2	
White Rock Creek at Westgrove Dr	WRC 9	0827A	32.97650278	-96.81070278	04	TR	TR	BFSI	2	2	
White Rock Creek at Frankford Rd	WRC 10	0827A	32.99826111	-96.81371944	04	TR	TR	BFSI	2	2	
White Rock Creek at President George Bush Turnpike	WRC 11	0827A	33.01282778	-96.81561111	04	TR	TR	BFSI	2	2	
White Rock Creek at W Park Blvd	WRC 12	0827A	33.02790833	-96.81261944	04	TR	TR	BFSI	2	2	
White Rock Creek at W Parker Rd	WRC 13	0827A	33.04259722	-96.80906944	04	TR	TR	BFSI	2	2	

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Site Description	Station ID	Waterbody ID	Latitude	Longitude	Region	SE	CE	MT	Bacteria	Field	Comments
WHITE ROCK CREEK AT WEST SPRING CREEK PARKWAY IN DALLAS	WRC 14 (21556)	0827A	33.056564	-96.80385	04	TR	TR	BFSI	2	2	
White Rock Creek at Tennyson Pkwy	WRC 15	0827A	33.064825	-96.80058333	04	TR	TR	BFSI	2	2	
White Rock Creek at Legacy Dr	WRC 16	0827A	33.07127778	-96.79899444	04	TR	TR	BFSI	2	2	
White Rock Creek at Quincy Ln	WRC 17	0827A	33.076775	-96.79856111	04	TR	TR	BFSI	2	2	
White Rock Creek at Preston Rd (north)	WRC 18	0827A	33.08113611	-96.79931389	04	TR	TR	BFSI	2	2	
White Rock Creek at Ohio Dr	WRC 19	0827A	33.08596667	-96.79595833	04	TR	TR	BFSI	2	2	
White Rock Creek at McDermott Rd	WRC 20	0827A	33.09453056	-96.79051667	04	TR	TR	BFSI	2	2	
White Rock Creek at SH 121	WRC 21	0827A	33.1049	-96.78489444	04	TR	TR	BFSI	2	2	
White Rock Creek at Lebanon Road	WRC 22	0827A	33.11608056	-96.78086111	04	TR	TR	BFSI	2	2	
White Rock Creek at College Pkwy	WRC 23	0827A	33.13052222	-96.77880833	04	TR	TR	BFSI	2	2	

Appendix B – Measurement Performance Specifications

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	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)	us/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
Flow Parameters										
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood, 5=High,6=Dry	NU	other	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
Bacteriological Parameters in Water										
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert/ Colilert-18	31699	1	1	NA	0.50**	NA	TRA
E. COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	TRA
<p>* Reporting to be consistent with SWQM guidance and based on measurement capability.</p> <p>** 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 SS-B5.</p> <p>References:</p> <p>United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020</p> <p>American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)</p> <p>TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).</p> <p>TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416)</p>										

Appendix C – Field Data Table and Data Review Checklist

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Data Review Checklist

This checklist is to be used by TRA in order to review data before submitting the project report to the TCEQ. This table may not contain all of the data review tasks being conducted.

Data Format and Structure	✓, X, or N/A
Are sampling Dates in the correct format, MM/DD/YYYY with leading zeros?	✓
Are sampling Times based on the 24 hr clock (e.g. 09:04) with leading zeros?	✓
Is the Comments field filled in where appropriate (e.g. unusual occurrence, sampling problems, unrepresentative of ambient water quality)?	✓
Are submitting Entity, Collecting Entity, and Monitoring Type codes used correctly?	✓
Are values represented by a valid parameter code with the correct units?	✓
Are there any duplicate parameter codes for the same station, date, time, and depth?	X
Are there any invalid symbols in the Greater Than/Less Than (GT/LT) field?	X
Data Quality Review	✓, X, or N/A
Are "less-than" values reported at the LOQ? If no, explain in Data Summary.	N/A
Have the outliers been verified and a "1" placed in the Verify_flg field?	N/A
Have checks on correctness of analysis or data reasonableness been performed?	✓
Have at least 10% of the data in the data set been reviewed against the field and laboratory data sheets?	✓
Are all parameter codes in the data set listed in the QAPP?	See comment 1
Documentation Review	✓, X, or N/A
Was documentation of any unusual occurrences that may affect water quality included in the Comments field?	✓
Were there any failures in sampling methods and/or deviations from sample design requirements that resulted in unreportable data? If yes, explain in Data Summary.	X
Were there any failures in field and/or laboratory measurement systems that were not resolvable and resulted in unreportable data? If yes, explain in Data Summary.	See comment 2, 3, 4
Was the laboratory's NELAP Accreditation current for analysis conducted?	✓

Data Summary

Data Set Information

Data Source: White Rock E. coli Source Identification Study

Date Submitted: 7/15/2020

Tag_id Range: WRC 1 DRY - WRC 23 DRY, WRC DRY FS1 - WRC DRY FS12, WRC 1 WET - WRC

23 WET, WRC WET FS1 - WRC WET FS13

Date Range: 7/16/2019 - 6/23/2020

I certify that all data in this data set meets the requirements specified in Texas Water Code Chapter 5, Subchapter R (TWC §5.801 et seq) and Title 30 Texas Administrative Code Chapter 25, Subchapters A & B. This data set has been reviewed using the criteria in the Data Review Checklist.

Planning Agency Data Manager: Angela Kilpatrick

Date: 7/15/2020

Comments

Please explain in the table below any data discrepancies discovered during data review including:

-Inconsistencies with LOQs

-Failures in sampling methods laboratory procedures that resulted in data that could not be used in data analysis for this project (indicate items for which the Corrective Action Process has been initiated and send Corrective Action Status Report with the applicable Progress Report)

1) Data for Sonde Chlorophyll-a, Sonde Blue Green Algae, and Turbidity are included in the data table but have no storet codes and are not listed in the Table A7.1.

2) One air temperature and one secchi depth not recorded in field.

3) One turbidity not recorded in field, 2 turbidity no data due to meter failure.

4) Dry weather fine scale optical brightener results lost. Data are considered inconclusive for all samples due to background levels of golf course dyes.

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Parameter	Station/Date/Time/ Depth Affected	Type of Problem	Reason for Problem	Number Expected	Number Received	Percent Loss*	CAP (Y/N/SOP)
TEMPERATURE, WATER (DEGREES CENTIGRADE) 00010				71	71		
TEMPERATURE, AIR (DEGREES CENTIGRADE) 00020	WRC 12 WET	Field	Did not record	71	70	1%	N
TRANSPARENCY, SECCHI DISC (METERS) 00078	WRC WET FS11	Field	Did not record	71	70	1%	N
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C) 00094				71	71		
OXYGEN, DISSOLVED (MG/L) 00300				71	71		
PH (STANDARD UNITS) 00400				71	71		
OPTICAL BRIGHTENERS: PRESENT, ABSENT, INCONCLUSIVE	WRC DRY FS1 - WRC DRY FS12	Lab	Dry fine scale results lost	71	59	17%	N - data did not provide useful results due to background OB from golf courses
DAYS SINCE PRECIPITATION EVENT (DAYS) 72053				71	71		
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE 82903				21	21		
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SECOND) 00061				71	71		
FLOW SEVERITY: 1=No Flow, 2=Low, 3=Normal, 4=Flood, 5=High, 6=Dry 01351				71	71		
FLOW MTH 1=GAGE, 2=ELEC, 3=MECH4=WETR/FLU, 5=DOPPLER 89835				71	71		
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML 31699				71	71		
E. COLI, COLILERT, IDEXX, HOLDING TIME 31704				71	71		
Sonde Chlorophyll-a (RFU)				71	71		
Sonde Blue Green Algae (RFU)				71	71		
Turbidity (NTU)	WRC DRY FS12, WRC WET FS5, WRC WET FS9	Field	1 not recorded, 2 meter failed to give a reading	71	68	4%	N

* Percent Loss = # Data Points Lost / # Data Points Expected for that parameter in the data set.

Event	Tag #	SAMPLE DESCRIPTION	Date	Time	Sample Depth	Comments	Submitting Entity	Collecting Entity	Monitoring Type	TEMPERATURE, WATER (DEGREES CENTIGRADE) 00010	TEMPERATURE, AIR (DEGREES CENTIGRADE) 00020	TRANSPARENCY, SECCHI DISC (METERS) 00078	SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C) 00094	OXYGEN, DISSOLVED (MG/L) 00300	PH (STANDARD UNITS) 00400	OPTICAL BRIGHTENERS: PRESENT, ABSENT, INCONCLUSIVE	DAYS SINCE PRECIPITATION EVENT (DAYS) 72053	DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE 82903	Flow at USGS Gage #08057200 White Rock Creek at Greenville Avenue in Dallas, not applicable to specific sites	FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry 01351	FLOW MTH 1=GAGE, 2=ELEC, 3=MECH4=WEIFR/FLU, 5=DOPPLER 89835	E. COLI, COLILERT, IDEXX METHOD, MPN/100ML 31699	E. COLI, COLILERT, IDEXX, HOLDING TIME 31704	Sonde Chlorophyll-a (RFU)	Sonde Blue Green Algae (RFU)	Turbidity (NTU)
Dry Coarse Scale	WRC 23 DRY	WRC 23 White Rock Creek at College Pkwy	07/16/2019	08:29	0.01	sunny partly cloudy water clear and shallow flowing from upstream pond lots of algae on culvert bottom one small minnow observed	TR	TR	BFSI	24.3	32	>0.6	760	7.5	7.4	Present	10	0.05	17.5	3	1	523	7.05	0.163	-0.164	0.24
Dry Coarse Scale	WRC 22 DRY	WRC 22 White Rock Creek at Lebanon Rd	07/16/2019	08:47	0.07	small bass observed small trickle thru culvert left bank pond clear algae on bottom sunny warm	TR	TR	BFSI	27.8	30	>0.6	369	6.9	7.4	Present	10	0.2	17.5	3	1	32	6.75	1.478	-0.023	4.95
Dry Coarse Scale	WRC 21 DRY	WRC 21 White Rock Creek at SH 121	07/16/2019	09:04	0.03	sunny few clouds hot water clear very little algae small fish and fish beds observed construction upstream	TR	TR	BFSI	25.6	30	>0.6	709	8.1	7.4	Present	10	0.1	18.1	3	1	17	6.4667	0.165	-0.194	0.74
Dry Coarse Scale	WRC 20 DRY	WRC 20 White Rock Creek at McDermott Rd	07/16/2019	09:20	0.3	sunny hot water clear fish observed stormwater inlet downstream left bank	TR	TR	BFSI	25.8	31	>0.6	666	7.4	7.2	Present	10		15.9	3	1	115	6.2	0.162	-0.134	0.87
Dry Coarse Scale	WRC 19 DRY	WRC 19 White Rock Creek at Ohio Dr	07/16/2019	09:34	0.1	bass and sunfish observed stormwater inlets both banks fish beds	TR	TR	BFSI	25.5	34	>0.6	670	7.3	7.2	Present	10	0.3	16.9	3	1	255	5.9667	0.175	-0.186	3.6
Dry Coarse Scale	WRC 18 DRY	WRC 18 White Rock Creek at Preston Rd (north)	07/16/2019	09:52	0.3	sunny hot water clear stormwater inlet right bank water seep inlet right bank	TR	TR	BFSI	26.3	34	>0.6	633	7.8	7.2	Inconclusive	10		18.1	3	1	255	5.6667	0.141	-0.202	1.43
Dry Coarse Scale	WRC 17 DRY	WRC 17 White Rock Creek at Quincy Ln	07/16/2019	10:08	0.3	sunny hot water clear people fishing and wading deep pool at site attached algae inlet under bridge fish observed aquatic veg observed	TR	TR	BFSI	27.1	32	>0.6	666	9.2	7.4	Inconclusive	10		16.4	3	1	403	5.4	0.185	-0.199	0.98
Dry Coarse Scale	WRC 16 DRY	WRC 16 White Rock Creek at Legacy Dr	07/16/2019	10:19	0.3	sunny hot fish observed water deep and green	TR	TR	BFSI	28.4	35	>0.6	545	11.6	7.3	Present	10		15.9	3	1	37	5.2167	0.264	-0.185	1.57
Dry Coarse Scale	WRC 15 DRY	WRC 15 White Rock Creek at Tennyson Pkwy	07/16/2019	10:33	0.3	sunny hot water green turtles observed deep poot at site	TR	TR	BFSI	29	35	>0.6	523	8.9	6.9	Inconclusive	10		15.2	3	1	22	4.9833	0.298	-0.205	1.92
Dry Coarse Scale	WRC 14 DRY	WRC 14 (21556) White Rock Creek at West Spring Ck	07/16/2019	11:05	0.07	sunny hot water clear flowing stormwater inlets both bank fish observed	TR	TR	BFSI	29.4	35	>0.6	500	8.6	7.6	Inconclusive	10	0.2	18.1	3	1	420	4.45	0.425	-0.146	3.32
Dry Coarse Scale	WRC 13 DRY	WRC 13 White Rock Creek at W Parker Rd	07/16/2019	11:24	0.3	sunny hot water clear still backwater to pond some organic debris	TR	TR	BFSI	28.9	35	>0.6	549	6.9	7.2	Present	10		14.6	3	1	232	4.1333	0.492	-0.195	1.98
Dry Coarse Scale	WRC 12 DRY	WRC 12 White Rock Creek at W Park Blvd	07/16/2019	11:48	0.3	sunny hot water green clear deep pool	TR	TR	BFSI	28.6	35	>0.6	579	7.3	7.2	Inconclusive	10		15.9	3	1	73	3.7333	0.432	-0.141	2.28
Dry Coarse Scale	WRC 11 DRY	WRC 11 White Rock Creek at President George Bush	07/16/2019	12:14	0.3	sunny hot water green clear deep lots of fish catfish sunfish	TR	TR	BFSI	29.2	34	>0.6	603	8.2	7.5	Present	10		14.6	3	1	125	3.3	0.346	-0.199	2.79
Dry Coarse Scale	WRC 10 DRY	WRC 10 White Rock Creek at Frankford Rd	07/16/2019	12:25	0.3	sunny hot water clear shallow pipeline in creek bed manhole cover under water	TR	TR	BFSI	28.9	35	>0.6	623	9.4	7.4	Inconclusive	10		14.6	3	1	119	4.1167	0.314	-0.178	1.35
Dry Coarse Scale	WRC 9 DRY	WRC 9 White Rock Creek at Westgrove Dr	07/16/2019	12:47	0.3	sunny hot water green and cloudy very large fish observed large bass and catfish smaller sunfish	TR	TR	BFSI	30.4	34	0.56	601	6.9	7.1	Present	10		14.6	3	1	35	2.75	0.719	-0.105	3.47
Dry Coarse Scale	WRC 8 DRY	WRC 8 White Rock Creek at Keller Springs Rd	07/16/2019	13:10	0.3	sunny hot water green and cloudy lots of large fish observed	TR	TR	BFSI	31.6	34	>0.6	603	9.1	7.2	Present	10		14.1	3	1	24	2.3667	0.478	-0.182	2.64
Dry Coarse Scale	WRC 7 DRY	WRC 7 White Rock Creek at Arapaho Rd	07/16/2019	13:47	0.3	sunny hot water green and cloudy deep pool large trees observed in water side channel left bank geese on golf course right bank	TR	TR	BFSI	30.7	35	>0.6	656	9.1	7.4	Inconclusive	10		14.1	3	1	78	1.75	0.415	-0.238	2.38
Dry Coarse Scale	WRC 6 DRY	WRC 6 White Rock Creek at Beltline Rd	07/16/2019	14:01	0.3	sunny hot water green and cloudy stormwater inlets both banks pipeline in bedrock	TR	TR	BFSI	31.1	34	>0.6	609	9.1	7.4	Inconclusive	10		13.5	3	1	17	1.5167	0.442	-0.194	3.23
Dry Coarse Scale	WRC 5 DRY	WRC 5 White Rock Creek at Preston Rd south	07/16/2019	14:14	0.3	sunny hot water clear storm inlet left bank 3 manhole covers in creek bed one under water	TR	TR	BFSI	32.5	35	>0.6	597	10.1	7.6	Inconclusive	10		11.4	3	1	42	1.3	0.398	-0.22	2.26
Dry Coarse Scale	WRC 4 DRY	WRC 4 White Rock Creek at Spring Valley Rd	07/16/2019	14:26	0.3	sunny hot water clear pipeline in creek fish observed junction box (?) under bridge	TR	TR	BFSI	34.8	35	>0.6	595	10.3	7.6	Present	10		11.9	3	1	117	0.7667	0.409	-0.191	2.06
Dry Coarse Scale	WRC 3 DRY	WRC 3 White Rock Creek at Alpha Rd	07/16/2019	14:39	0.3	sunny hot water clear fish observed	TR	TR	BFSI	31.4	35	>0.6	644	10.6	7.6	Inconclusive	10		11.9	3	1	113	0.8833	0.512	-0.139	1.78
Dry Coarse Scale	WRC 2 DRY	WRC 2 White Rock Creek at Hillcrest Rd	07/16/2019	14:48	0.3	sunny hot water clear large manhold mid channel upstream	TR	TR	BFSI	32	35	>0.6	663	10.8	7.4	Inconclusive	10		11.9	3	1	279	0.7333	0.596	-0.156	9.65
Dry Coarse Scale	WRC 1 DRY	WRC 1 20289 White Rock Creek at I635 north servc	07/16/2019	15:01	0.3	sunny hot water clear	TR	TR	BFSI	33.1	35	>0.6	638	12.4	7.6	Present	10		11.9	3	1	99	0.5167	0.472	-0.203	2.02
Dry Fine Scale	WRC DRY FS1	Dam DS Tennyson Pkwy	10/10/2019	10:08	0.3	overcast dog park upstream storm drain upstream sample at dam overflow	TR	TR	BFSI	23.8	27	>0.6	608	6.9	7.4	Discontinued	3		3.43	2	1	10	5.6167	0.466	0.185	2.61
Dry Fine Scale	WRC DRY FS2	W Spring Creek Parkway	10/10/2019	10:44	0.2	cool partly cloudy two storm inlets upstream of site within 30 meters fish observed	TR	TR	BFSI	23.9	27	>0.6	622	8.2	7.5	Discontinued	3	0.5	3.43	2	1	321	5.0167	0.566	0.219	0.9

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Event	Tag #	SAMPLE DESCRIPTION	Date	Time	Sample Depth	Comments	Submitting Entity	Collecting Entity	Monitoring Type	TEMPERATURE, WATER (DEGREES CENTIGRADE) 00010	TEMPERATURE, AIR (DEGREES CENTIGRADE) 00020	TRANSPARENCY, SECCHI DISC (METERS) 00078	SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C) 00094	OXYGEN, DISSOLVED (MG/L) 00300	PH (STANDARD UNITS) 00400	OPTICAL BRIGHTENERS: PRESENT, ABSENT, INCONCLUSIVE	DAYS SINCE PRECIPITATION EVENT (DAYS) 72053	DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE 82903	Flow at USGS Gage #08057200 White Rock Creek at Greenville Avenue in Dallas, not applicable to specific sites	FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry 01351	FLOW MTH 1=GAGE, 2=ELEC, 3=MECH4=WEIR/FLU, 5=DOPPLER 89835	E. COLI, COLILERT, IDEXX METHOD, MPN/100ML 31699	E. COLI, COLILERT, IDEXX, HOLDING TIME 31704	Sonde Chlorophyll-a (RFU)	Sonde Blue Green Algae (RFU)	Turbidity (NTU)
Dry Fine Scale	WRC DRY FS3	Upstream Spring Creek Parkway Bridge	10/10/2019	10:57	0.03	cool partly cloudy clear water with filamentous algae present sampled at pipeline crossing	TR	TR	BFSI	24.6	27	>0.6	802	6.5	7.4	Discontinued	3	0.1	3.43	2	1	2	4.8	0.493	0.118	5.25
Dry Fine Scale	WRC DRY FS4	DS low water crossing	10/10/2019	11:15	0.1	cool scattered clouds mixing zone of white rock creek and pond overflow pipeline present upstream of crossing and arial pipeline just upstream at pond overflow	TR	TR	BFSI	24.1	27	>0.6	603	7.6	7.6	Discontinued	3	0.3	3.43	2	1	32	4.5	0.174	0.069	1.06
Dry Fine Scale	WRC DRY FS5	Inlet downstream dam US low water crossing	10/10/2019	11:25	0.1	cool scattered clouds slight odor sampled immediately downstream of pipe outlet with slight odor heavy algae growth and stalagmite formations below outlet	TR	TR	BFSI	24	28	>0.6	675	7	7.3	Discontinued	3	0.3	3.83	2	1	10	4.3333	1.68	0.474	9.06
Dry Fine Scale	WRC DRY FS6	Utility placement upstream of dam	10/10/2019	11:50	0.3	cool scattered clouds dog park at sample location sewer manholes on both sides of creek noticable groundwater seepage on river left	TR	TR	BFSI	24.4	30	>0.6	627	7.9	7.3	Discontinued	3		3.24	2	1	10	3.9167	0.552	0.186	4.04
Dry Fine Scale	WRC DRY FS7	Tennylon Pkwy Rd Bridge	10/10/2019	12:15	0.3	bridge sample most upstream at reach sunny warm weather	TR	TR	BFSI	24.4	30	>0.6	611	8.2	7.4	Discontinued	3		3.83	2	1	37	3.5	0.051	0.097	2.03
Dry Fine Scale	WRC DRY FS8	McDermott Rd Bridge	10/10/2019	13:05	0.3	warm sunny water cloudy storm drain upstream of sample	TR	TR	BFSI	25.1	32	0.49	638	8.9	7.6	Discontinued	3	1	3.83	2	1	821	2.6667	0.22	0.044	4.93
Dry Fine Scale	WRC DRY FS9	DS Creek inlet on river right	10/10/2019	13:35	0.1	water cloudy creek inlet has significant amount of flow weather hot sunny	TR	TR	BFSI	24.5	32	0.35	655	6.8	7.4	Discontinued	3	0.3	3.62	2	1	>4839	2.1667	0.181	0.055	10.03
Dry Fine Scale	WRC DRY FS10	DS 121	10/10/2019	14:25	0.2	water really cloudy lots of leaf litter and organic debris in stream weather sunny	TR	TR	BFSI	23.9	32	0.23	674	6.7	7.4	Discontinued	3	0.6	3.43	2	1	2092	1.3333	0.914	0.262	17.6
Dry Fine Scale	WRC DRY FS11	Downstream culvert	10/10/2019	14:50	0.4	water cloudy DS culvert clear upstream sanitary sewer pipeline crossing	TR	TR	BFSI	24.8	34	>0.6	662	6.7	7	Discontinued	3		2.9	2	1	90	0.9167	2.219	0.412	1.73
Dry Fine Scale	WRC DRY FS12	Culvert cloudy H2O	10/10/2019	14:55	0.4	cloudy weird water same general site as site 11	TR	TR	BFSI	24.8	32	0.49	662	6.7	7	Discontinued	3		3.07	2	1	117	0.8333	2.219	0.412	NR
Wet Coarse Scale	WRC 23 WET	WRC 23 White Rock Creek at College Pkwy	05/12/2020	10:55	0.03	overcast sprinkling water clear lots of filamentous algae attached to bed ducks in stream level up from last visit lots of ducks in upstream culvert	TR	TR	BFSI	21.1	21.1	>0.6	412	8.1	7.3	Discontinued	0	0.1	250	3	1	2318	5.5833	0.665	0.187	1.77
Wet Coarse Scale	WRC 22 WET	WRC 22 White Rock Creek at Lebanon Rd	05/12/2020	11:25	0.06	water is clear and green lots of attached algae and macrophyts bioscum and ducks	TR	TR	BFSI	22	21.1	0.39	483	8.4	8	Discontinued	0	0.2	261	3	1	154	5.0833	5.628	0.852	4.26
Wet Coarse Scale	WRC 21 WET	WRC 21 White Rock Creek at SH 121	05/12/2020	11:55	0.06	water green and slightly turbid a little attached algae lots of macrophytes	TR	TR	BFSI	21.5	21.1	0.37	514	8	7.6	Discontinued	0	0.2	241	3	1	440	4.5833	2.96	0.33	7.38
Wet Coarse Scale	WRC 20 WET	WRC 20 White Rock Creek at McDermott Rd	05/12/2020	12:15	0.1	overcast water greenish brown and turbid	TR	TR	BFSI	21.1	21.7	0.29	538	8.3	7.6	Discontinued	0	0.3	224	3	1	395	4.25	1.202	0.216	8.92
Wet Coarse Scale	WRC 19 WET	WRC 19 White Rock Creek at Ohio Dr	05/12/2020	12:40	0.3	water is greenish brown turbid some organic debris overcast inlets on both banks	TR	TR	BFSI	21	22.2	0.285	614	8.1	6.8	Discontinued	0	1	185	3	1	690	3.8333	1.414	0.212	10.7
Wet Coarse Scale	WRC 18 WET	WRC 18 White Rock Creek at Preston Rd (north)	05/12/2020	13:10	0.3	water is greenish brown slightly turbid weather overcast misting	TR	TR	BFSI	21.1	23.3	0.32	470	8.4	7.3	Discontinued	0	1	152	3	1	3683	3.3333	0.94	0.208	7.97
Wet Coarse Scale	WRC 17 WET	WRC 17 White Rock Creek at Quincy Ln	05/12/2020	13:30	0.3	lots of organic debris ducks some trash water is green and turbid	TR	TR	BFSI	21.6	23.3	0.3	460	8.7	7.3	Discontinued	0		134	3	1	2318	3	0.684	0.191	9.22
Wet Coarse Scale	WRC 16 WET	WRC 16 White Rock Creek at Legacy Dr	05/12/2020	13:55	0.3	brown turbid water lots of organic debris bridge swallows	TR	TR	BFSI	21.6	23.9	0.145	316	8.1	7.1	Discontinued	0		120	3	1	3922	2.5833	0.375	0.144	16.5
Wet Coarse Scale	WRC 15 WET	WRC 15 White Rock Creek at Tennyson Pkwy	05/12/2020	14:20	0.3	overcast water green lots of floating filamentous algae and macrophytes	TR	TR	BFSI	22.9	25.6	>0.6	564	9.6	7.6	Discontinued	0		102	3	1	455	2.1667	1.154	0.289	2.61
Wet Coarse Scale	WRC 14 WET	WRC 14 (21556) White Rock Creek at West Spring Ck	05/12/2020	14:43	0.04	flow much higher than normal storm drain inlets flowing immediately upstream on both sides	TR	TR	BFSI	22.4	25	>0.6	518	9.1	7.9	Discontinued	0	0.15	95	3	1	316	1.7833	1.215	0.292	3.79
Wet Coarse Scale	WRC 13 WET	WRC 13 White Rock Creek at W Parker Rd	05/12/2020	15:10	0.3	overcast water green and slightly turbid some organic debris	TR	TR	BFSI	22.4	25	0.44	565	9.1	7	Discontinued	0		130	3	1	373	1.3333	1.47	0.31	4.45
Wet Coarse Scale	WRC 12 WET	WRC 12 White Rock Creek at W Park Blvd	05/12/2020	15:30	0.3	water green large log jam against bridge filamentous algae	TR	TR	BFSI	21.8	NR	0.48	527	8.6	6.9	Discontinued	0		157	3	1	749	1	0.755	0.175	3.88

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

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Wet Coarse Scale	WRC 11 WET	WRC 11 White Rock Creek at President George Bush	05/12/2020	10:55	0.3	overcast and mild water is green	TR	TR	BFSI	21.2	22	0.59	593	8.3	7.2	Discontinued	0		250	5	1	293	4.3333	0.82	0.16	2.47
Wet Coarse Scale	WRC 10 WET	WRC 10 White Rock Creek at Frankford Rd	05/12/2020	11:16	0.3	overcast and mild water is green	TR	TR	BFSI	21.8	21	0.41	537	8.3	7.3	Discontinued	0		261	5	1	826	3.9833	1.18	0.25	4.42
Wet Coarse Scale	WRC 9 WET	WRC 9 White Rock Creek at Westgrove Dr	05/12/2020	11:32	0.3	overcast and mild water is green with a central foam line	TR	TR	BFSI	21.6	22	0.52	643	7.6	7.1	Discontinued	0		261	5	1	112	3.7167	0.95	0.22	3.95
Wet Coarse Scale	WRC 8 WET	WRC 8 White Rock Creek at Keller Springs Rd	05/12/2020	12:19	0.3	overcast and mild water is green	TR	TR	BFSI	21.9	23	0.49	593	7.7	7.3	Discontinued	0		224	5	1	74	2.9333	1.2	0.24	4.46
Wet Coarse Scale	WRC 7 WET	WRC 7 White Rock Creek at Arapaho Rd	05/12/2020	12:40	0.3	overcast and mild water is green	TR	TR	BFSI	22.1	23	>0.6	608	6.6	6.8	Discontinued	0		185	5	1	163	2.5833	0.81	0.1	2.28
Wet Coarse Scale	WRC 6 WET	WRC 6 White Rock Creek at Beltline Rd	05/12/2020	12:55	0.3	overcast and mild water is green	TR	TR	BFSI	22.2	24	0.59	610	7.8	7.1	Discontinued	0		164	5	1	1741	2.3333	1.01	0.19	3.21
Wet Coarse Scale	WRC 5 WET	WRC 5 White Rock Creek at Preston Rd south	05/12/2020	13:11	0.3	mostly cloudy and mild water is green	TR	TR	BFSI	22.5	24	0.5	592	7.3	7.2	Discontinued	0		152	5	1	475	2.0667	1.28	0.24	4.53
Wet Coarse Scale	WRC 4 WET	WRC 4 White Rock Creek at Spring Valley Rd	05/12/2020	13:27	0.3	overcast and warm water is green	TR	TR	BFSI	22.8	25	0.4	585	8.6	7.4	Discontinued	0		134	5	1	663	1.8	1.5	0.26	6.83
Wet Coarse Scale	WRC 3 WET	WRC 3 White Rock Creek at Alpha Rd	05/12/2020	13:42	0.3	overcast and mild water mostly clear and green	TR	TR	BFSI	22.4	24	0.46	497	8.5	7.5	Discontinued	0		120	5	1	2069	1.55	1.54	0.26	5.08
Wet Coarse Scale	WRC 2 WET	WRC 2 White Rock Creek at Hillcrest Rd	05/12/2020	13:57	0.3	overcast and mild water is green	TR	TR	BFSI	22.7	24	0.47	470	8.8	7.5	Discontinued	0		113	5	1	3266	1.3	1.49	0.27	4.27
Wet Coarse Scale	WRC 1 WET	WRC 1 20289 White Rock Creek at I635 north servic	05/12/2020	14:13	0.3	mostly cloudy and mild water is brownish green	TR	TR	BFSI	22.7	25	0.47	488	8.8	7.2	Discontinued	0		102	5	1	3466	1.0333	1.63	0.24	4.53
Wet Fine Scale	WRC WET FS1	WRC 3	06/23/2020	08:54	0.3	raining high flow with debris floating	TR	TR	BFSI	25.1	21	0.08	168	8.4	7.6	Discontinued	0		4170	5	1	9932	7.7167	1.33	0.68	47.5
Wet Fine Scale	WRC WET FS2	WRC 3.1	06/23/2020	09:23	0.1	just upstream of WRC3 capturing runoff from Hillcrest park OB sample this site on the other side of WRC from the golf course so any bacteria may more likely be from the park dogs maybe	TR	TR	BFSI	23.9	22	0.08	246	5.8	7.3	Discontinued	0	0.3	4810	5	1	9932	7.2333	1.02	0.21	44.7
Wet Fine Scale	WRC WET FS3	WRC 4	06/23/2020	09:50	0.3	high stage lots of debris turbid	TR	TR	BFSI	24.9	22	0.06	102	8.6	7.4	Discontinued	0		4820	5	1	>12098	6.7833	0.89	0.59	46.3
Wet Fine Scale	WRC WET FS4	WRC 6	06/23/2020	10:11	0.3	high stage lots of floating debris turbid turbidity meter failed likely turbidity is too high downstream end of golf course	TR	TR	BFSI	24.7	22	0.06	142	8.8	7.7	Discontinued	0		4440	5	1	8664	6.4333	0.94	0.62	55.3
Wet Fine Scale	WRC WET FS5	WRC 7	06/23/2020	10:40	0.3	high stage water is brown and turbid with debris turbidity sensor failed likely due to high turbidity northern side of golf course just DS of where WRC and two tribs come together	TR	TR	BFSI	24.7	23	0.045	164	8.6	7.6	Discontinued	0		3990	5	1	7068	5.95	0.93	0.49	ND
Wet Fine Scale	WRC WET FS6	WRC 7.1 West fork trib just US of WRC 7	06/23/2020	11:10	0.3	water is greenish brown and calm sampled just upstream of check dam so sample isn't being influenced by WRC	TR	TR	BFSI	23.9	23	0.41	156	8	6.8	Discontinued	0		3510	5	1	9932	5.45	0.34	0.02	7.88
Wet Fine Scale	WRC WET FS7	WRC 7.2 Eastern fork just US of WRC 7	06/23/2020	11:22	0.3	OB sampled water mostly calm and very turbid several people walking dogs nearby small outfall upstream	TR	TR	BFSI	24.2	23	0.1	162	8.3	7.4	Discontinued	0		3510	5	1	12098	5.25	0.6	0.21	26.3
Wet Fine Scale	WRC WET FS8	WRC 7.3 Pond DS of WRC 7	06/23/2020	11:36	0.3	sample taken from eastern edge of pond water greenish brown and calm no visible connection to WRC OB sampled	TR	TR	BFSI	26.3	23	0.32	485	6.4	7.1	Discontinued	0		3250	5	1	725	5.0167	1.11	0.76	11.4
Wet Fine Scale	WRC WET FS9	WRC 8	06/23/2020	13:24	0.3	stage is high water very turbid OB sampled turbidity meter failed false reading likely due to high turbidity this site downstream of dog park	TR	TR	BFSI	24.2	24	0.035	169	8.9	7.5	Discontinued	0		1410	5	1	12098	3.2167	0.76	0.34	ND
Wet Fine Scale	WRC WET FS10	WRC 18	06/23/2020	14:05	0.3	flowing high and turbid OB sampled	TR	TR	BFSI	24.5	24	0.09	347	8.2	7.6	Discontinued	0		1210	5	1	4604	2.5333	1.36	0.3	28.1
Wet Fine Scale	WRC WET FS11	WRC 18.1 Drainage ditch near WRC 18	06/23/2020	14:22	0.1	water is flowing in from nearby field and roadside bridge water mostly clear	TR	TR	BFSI	24.5	24	NR	667	8.2	7.7	Discontinued	0	0.3	1120	5	1	442	2.25	0.59	0.05	3.92

TRA Clean Rivers Program
2020 White Rock Creek *E. coli* Report

Event	Tag #	SAMPLE DESCRIPTION	Date	Time	Sample Depth	Comments	Submitting Entity	Collecting Entity	Monitoring Type	TEMPERATURE, WATER (DEGREES CENTIGRADE) 00010	TEMPERATURE, AIR (DEGREES CENTIGRADE) 00020	TRANSPARENCY, SECCHI DISC (METERS) 00078	SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C) 00094	OXYGEN, DISSOLVED (MG/L) 00300	PH (STANDARD UNITS) 00400	OPTICAL BRIGHTENERS: PRESENT, ABSENT, INCONCLUSIVE	DAYS SINCE PRECIPITATION EVENT (DAYS) 72053	DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE 82903	Flow at USGS Gage #08057200 White Rock Creek at Greenville Avenue in Dallas, not applicable to specific sites	FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry 01351	FLOW MTH 1=GAGE, 2=ELEC, 3=MECH4=WEIR/FLU, 5=DOPPLER 89835	E. COLI, COLILERT, IDEXX METHOD, MPN/100ML 31699	E. COLI, COLILERT, IDEXX, HOLDING TIME 31704	Sonde Chlorophyll-a (RFU)	Sonde Blue Green Algae (RFU)	Turbidity (NTU)
Wet Fine Scale	WRC WET FS12	WRC 19.1 Fork downstream of WRC 19	06/23/2020	14:53	0.3	water is gray and turbid OB sampled	TR	TR	BFSI	24.3	24	0.1	267	8.2	7.7	Discontinued	0		971	5	1	3434	1.7333	0.65	0.16	24.1
Wet Fine Scale	WRC WET FS13	WRC 19	06/23/2020	15:20	0.3	water calm and turbid outfalls likely street drains all trickling people walking dogs on trail	TR	TR	BFSI	24.6	24	0.12	413	8.1	7.5	Discontinued	0		854	5	1	5231	1.2833	1.94	0.35	16.5