



LAGRANGE
GEORGIA

**CITY OF LAGRANGE
WATERSHED PROTECTION PLAN
ANNUAL REPORT TO GEORGIA EPD**

June 30, 2024

Submitted to:

Watershed Protection Branch
Georgia Environmental Protection Division
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City of LaGrange
Watershed Protection Plan Annual Report
June 30, 2024

I. Background:

The City of LaGrange, Georgia treats its wastewater at the Long Cane Creek Water Pollution Control Plant located southwest of the City, with the reclaimed water discharged to the Chattahoochee River downstream of West Point Lake. As a condition of the National Pollutant Discharge Elimination System (NPDES) Permit No. GA0036951 for the Long Cane Creek WPCP, the City was required to conduct a Watershed Assessment and prepare a Watershed Protection Plan. The Watershed Assessment (WA) was conducted in 2004-7 and submitted to the Georgia Environmental Protection Division (EPD) in July 2007. The WA focused on areas within the four watersheds that traverse the City. These watersheds are Upper Long Cane Creek, Blue John Creek, Dixie Creek, and Shoal Creek.

Based on findings of the Watershed Assessment, a Watershed Protection Plan (WPP) was developed to improve and protect the streams and water bodies within the City of LaGrange. The Watershed Protection Plan was approved by Georgia EPD on May 4, 2009.

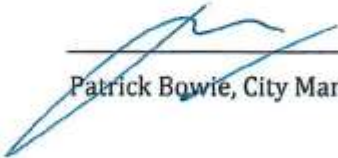
To monitor the progress of achieving water quality and watershed goals, a long-term monitoring program is conducted. Each June 30, the City is required to submit the following to EPD:

- Annual certification of WPP implementation
- Electronic submittal of long-term trend monitoring data
- Progress Report which includes
 - i. Specific actions or BMPs that have been implemented
 - ii. Documentation of water quality improvements.
 - iii. Summary of any changes and/or revisions to the Watershed Protection Plan

The purpose of this document is to fulfill these annual reporting requirements for the program implementation period ***Year 15: June 1, 2023 – May 30, 2024.***

II. Annual Certification of Watershed Protection Plan Implementation:

I certify, under penalty of law, that the City of LaGrange Watershed Protection Plan is being implemented. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. This certification is made for the period of May 2023 to June 2024.



Patrick Bowie, City Manager

6/10/24

Date signed

III. Long –Term Monitoring:

III. A. Summary of Long Term Monitoring Plan:

In order to monitor the progress toward achieving water quality and watershed goals based upon adaptive management, a long term monitoring plan of watershed conditions has been established. The plan consists of two main types of monitoring activities: water quality and aquatic biology. Sites to be assessed are identified in Table 1 and shown in Figure 1.

Table 1. LaGrange Monitoring Stations

Station Name	Station Location	Monitoring Type	Latitude	Longitude
1	Shoal Creek at Hammett Road	Water Quality and Aquatic Biology	33.07758	-84.9973
2	Dixie Creek at Mooty Bridge Road	Water Quality and Aquatic Biology	33.07326	-85.04438
3.1	Blue John Creek at WPC Plant	Water Quality	32.97883	-85.06587
3a	Blue John Creek at Orchard Hill Rd	Aquatic Biology	32.99880	-85.05171
7	Long Cane Creek at Hood Rd	Water Quality and Aquatic Biology	33.01103	-84.98335

The stations monitor outflow from each of the four HUC12 watersheds within which the City is located as discussed below:

- Station #1 Shoal Creek at the Hammett Road crossing. The station is used as an indicator for Shoal Creek water quality as it leaves the City and prior to entering West Point Lake. The lower portion of Shoal Creek affected by the City of LaGrange (from I-85 to WPL) is classified as supporting its designated use of fishing (2012).
- Station #2 is located on Dixie Creek at Mooty Bridge Road. This station is used as an indicator for Dixie Creek water quality as it leaves the northern portion of the City and prior to entering West Point Lake. Dixie Creek is classified (2012) as Not Supporting its designated use of fishing due to fecal coliform from urban runoff.
- Station #3.1 is located on Blue John Creek upstream of the Long Cane WPCP on Old Hutchinson Mill Road. This station is used as an indicator of Blue John Creek water quality as it leaves the City. This station was established during the 2017-18 reporting period to take the place of Station #3 at the Long Cane WPC Plant and is located approximately 3,700 feet upstream of the original station #3. The station location change was made in 2017 for the sake of better accessibility for sampling and measurements.
- Station #3a is located on Blue John Creek upstream of the Orchard Hill Road crossing just after confluence with Troup Branch. This station is used as the Biological Monitoring station for Blue John Creek and is conducted upstream of the water quality monitoring station (Station #3.1).
- Station #7 is located on Upper Long Cane Creek off Hood Road. This station is used as an indicator of Upper Long Cane Creek water quality as it leaves the eastern portion of the City. Upper Long Cane Creek is classified (2012) as supporting its designated use of fishing.

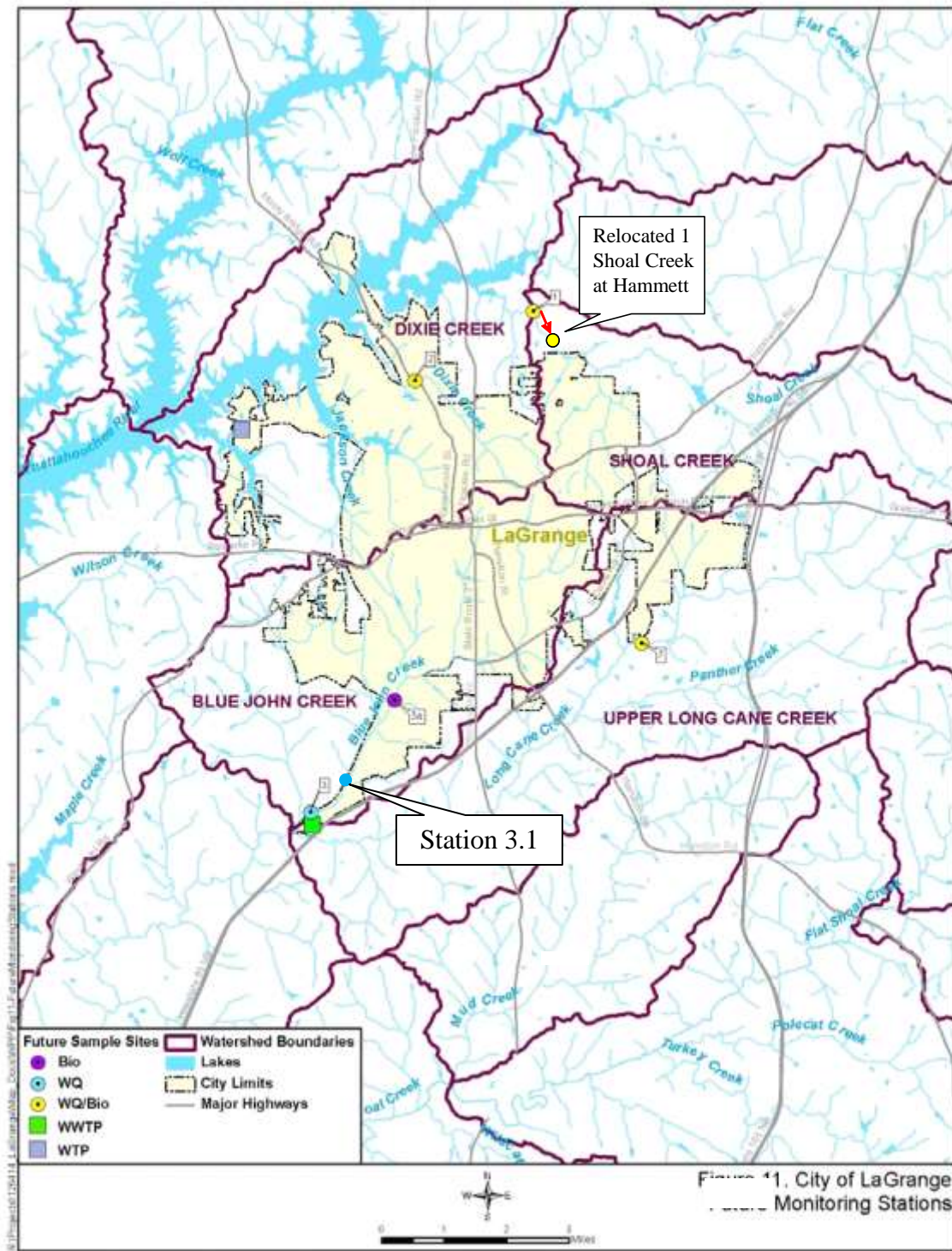


Figure 1. City of LaGrange Monitoring Stations

The specific water quality and field parameters to be monitored include:

- Temperature (air and water)
- pH
- Dissolved oxygen (DO)
- Specific conductance
- Turbidity
- BOD5
- COD
- Phosphorus (total and ortho)
- TSS
- Metals (Cd, Cu, Pb, Zn)-Total & dissolved
- *E. coli*.
- Total Kjeldahl Nitrogen (TKN)
- Ammonia
- NO2/NO3
- Alkalinity
- Hardness

Water quality samples (except fecal coliform and *E. coli*) will be collected quarterly at all four of the stations. One of the sampling events will be a wet weather event and the other three will be dry. A wet weather event is defined as greater than 0.2 inches of rain following at least 72 hours since the previous rain event. A dry weather event is when at least 72 hours has passed since the last rain event of at least 0.2 inch of rainfall.

E. coli samples will consist of at least four samples collected within a 30-day period at intervals no less than 24 hours. The 30-day periods will occur semi-annually, once between November and April and again between May and October. The samples are collected on a regular schedule, regardless of the weather. Until last year, fecal coliform was included as a water quality field parameter included in the program sampling. In August 2022, US EPA approved the revised water quality standards adopted by Georgia's Department of Natural Resources Board. The revised standards included a change in bacteria indicator from fecal coliform to *E. coli* for waterbodies designated "fishing" or "drinking water." As such, there is no longer a need to sample for fecal coliform. The last of fecal coliform samples were taken on April 25, 2023.

Biological monitoring has been being conducted on a biennial basis. A recent change in sampling requirements states that biological monitoring is to be conducted twice every 5 years. However, the City of LaGrange has chosen to continue to do said monitoring every other year. Biological monitoring includes physical habitat monitoring, benthic macro invertebrate monitoring, and fish community monitoring. No biological monitoring was conducted for this report year.

III.B. Long Term Monitoring Data:

The City of LaGrange began implementation of the Long-Term Monitoring Plan following final approval by EPD on May 4, 2009. For Years 1, 3, 5, 7, 10, 12 and 14 (2009-10, 2011-12, 2013-14, 2015-16, 2018-19, 2020-21 and 2022-23) of implementation, both Water Quality and Biological Monitoring were conducted. For Years 2, 4, 6, 8, 9, 11 and 13 (2010-11, 2012-13, 2014-15, 2016-17, 2017-18, 2019-20, 2021-22 and 2023-24) only Water Quality monitoring was performed. The City of LaGrange Water Quality Monitoring and Laboratory staff performed sampling and testing for conventional pollutants. Analysis for metals, TKN, Nitrate/Nitrite and COD was contracted out to Analytical Environmental

Services, Inc. (NELAC/Florida Certification number E87582). A Flash Drive containing the 2023-24 Water Quality data using EPD’s most recent revision of the Watershed Assessment Data Reporting Template is included in Appendix 1.A.

III.B.1. Water Quality Sampling Results:

Water Quality monitoring (except *Escherichia coli*) during the 2023-24 report year consisted of four dry weather sampling events. The LT Monitoring plan calls for at least one wet weather sampling; however, no wet weather events occurred during the City’s working hours and dates. The dry weather WQ sampling events were conducted 8/22/23, 11/14/23, 2/7/24 and 4/17/24.

Table 2 summarizes WQ sampling results. Detailed data by parameter and sample event may be found in Appendix 1.B. Comparison of Long Term monitoring results with that of previous years can be found in Appendix 1.C.

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
DO (mg/l)	6.79-10.58		1.39-9.92		6.55-10.38		6.90-10.00	
pH (pHU)	6.92-7.18		6.95-7.17		6.90-7.36		6.74-7.34	
Water Temp (C)	6.27-24.33		7.02-23.4		6.21-24.0		6.85-24.1	
Cond (us/cm)	68-94		98-122		130-176		61.83	
Turb (NTU)	10.7-36.3		4.3-30.2		4.0-86.2		8.5-16	
BOD5 (mg/l)	<0.61-0.85		<0.61-0./85		<0.61-1.31		<0.61-1.29	
COD (mg/l)	<10		<10		<10		<10	
TKN (mg/l as N)	<0.5-0.161		<0.5		<0.5-0.543		<0.5	
NH3 (mg/l as N)	0.01-0.05		0.01-0.02		0.03-0.08		0.01-0.05	
NO2NO3 (mg/l as N)	0.053-0.186		0.493-0.689		0.073-0.408		<0.05-0.131	
P Total (mg/l as P)	0.003-0.02		0.003-0.01		0.01-0.03		0.003-0.02	
P Ortho (mg/l as P)	0.003-0.02		0.003-0.02		0.003-0.01		0.003-0.02	
TSS (mg/l)	6-12		4-13		6-14		4-10	
Cd Total (µg/l)	<0.7		<0.7		<0.7		<0.7	
Cu Total (µg/l)	<5		<5		<5		<5	
Pb Total (µg/l)	<1		<1		<1		<1	
Zn Total (µg/l)	<10.0-15.4		<10.0		<10.0-16.4		<10.0-28.6	
Cd Dissolved (µg/l)	<0.7		<0.7		<0.7		<0.7	
Cu Dissolved (µg/l)	<5		<5		<5		<598.2	
Pb Dissolved (µg/l)	<1		<1		<1		<1-2.17	
Zn Dissolved (µg/l)	<10		<10		<10		<10-144	
Hardness (mg/l)	14-27.6		13.6-42		30.8-56.0		13.2-24.8	
Alkalinity	48.1-52.0		64.9-80.1		46.4-83.8		33.1-51.3	

**Results are the range of 4 dry weather sampling events..*

For *Escherichia coli* testing, warm weather samples were collected September 13, 20, 25 and 27, 2023. Cool weather samples were collected February 7, 13, 21 and 22, 2024. Bacteria sample events were by available lab schedule rather than weather conditions. Table 3 summarizes the results.

	1-Shoal Ck	2-Dixie Ck	3-Blue John Ck	7- Long Cane Ck
warm weather (May-Oct.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
<i>Escherichia Coli</i> range of 4 samples:	260-380	70-100	50-100	20-90
<i>Escherichia Coli</i> geometric mean:	296	84	70	50
cool weather (Nov.-Apr.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
<i>Escherichia Coli</i> range of 4 samples:	10-80	10-80	10-40	10-60
<i>Escherichia Coli</i> geometric mean:	41	28	20	31

III.B.2. Comparison of Previous Water Quality Data with Current Data

Water Quality samples from the four long-term monitoring sites were collected in 2005-6 as part of the Watershed Assessment (WA). Long Term Monitoring data for years 2009-10, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22 and 2022-23 were included in previous annual reports. Results of this fifteenth year (2023-24) of LT monitoring are generally consistent with historical data. The following Water Quality concerns noted:

pH: Some values less than 6.0 have been measured at all sites over the years. All samples met standards in 2011-12, 2010-11 and 2009-10 year's monitoring. However, since then values less than 6.0 have been recorded at all stations for both dry and wet sampling over the years. This year pH measurements were all within the range of 6.0 to 8.5.

Turbidity: Generally, in the past, increased turbidity in wet weather sampling has been noted at all locations. No wet weather sampling was done this report year. The highest turbidity observed this year was at station 3 (86.2 NTU) during a spring time dry weather sample.

Total Suspended Solids: Total Suspended Solids values for this year were generally consistent with that of previous years. Increased Total Suspended Solids values have historically been noted for wet weather samples No wet weather sampling was done for this report year.

Nutrients: Total Phosphorus and total Nitrogen were consistent with historic values at all stations. During the 2014-15 year, total Kjeldahl Nitrogen and Total Nitrogen values were elevated higher than in previous years at all stations in samples taken during the month of February. With the current NPDES permit required Comprehensive Nutrient Optimization Plan (CNOP) requirements, nutrients will be more of a concern than previous years.

Metals: This year, all stations except for station 7 met criteria for all dissolved metals. Station 7 exceeded criteria for Lead, Copper, and Zinc on samples collected on August 22, 2023. In previous years, the total recoverable metals, for the most part, were below measureable amounts and when there were measureable amounts it was during wet weather sampling. This year there were measurable amounts of total zinc in stations 3 and 7 during dry sampling. There were no wet weather samplings for this report year.

E. coli: This year station 1 exceeded the State warm water criteria of 126 CFU per 100 mlj geometric mean for *e. coli*. In the Watershed Assessment, all sample stations exceeded the State criteria for warm weather. Station 2 has been the most consistent at exceeding the warm weather criteria.

Table 4 represents a comparison of Water Quality sampling results to GAEPD Water Quality Standards or to typical values for the area if no standards have been adopted.

III.B.3. SUMMARY OF NOTED WATER QUALITY ISSUES

TABLE 4: Comparison of Water Quality Results to Standards– Sampling 2023-24		
PARAMETER	STANDARD	COMPLIANCE STATUS BASED ON ANNUAL WQ DATA
Temperature	90°F (32.2°C) ^a	All stations met criteria.
pH	6.0-8.5 ^a	All stations met criteria.
Dissolved Oxygen (DO)	Daily average 5.0 mg/L ^a No less than 4.0 mg/L ^a	All stations met criteria.
Specific Conductance	No state standard 70-150 µS/cm ^b	Most samplings were within the limits of criteria. Stations 1 and 7 had a sampling of 68 and 61 µS/cm respectively. Station 3 had one sampling of 176 µS/cm.
Turbidity	No state standard	All Stations had turbidities that were within the acceptable range. (<130 NTU)
Biochemical Oxygen Demand (BOD)	No state standard	BOD results were consistent with historic data.
Chemical Oxygen Demand (COD)	No state standard	COD results were consistent with historical data
Total Suspended Solids (TSS)	No state standard	TSS were generally consistent with historical data.
Total Phosphorous	No state standard 0.023 - 0.100 mg/L ^d	All stations met criteria and are generally consistent with historical values;
Orthophosphate	No state standard	
Total Nitrogen	No state standard EPA reference conditions: 0.7 - 1 mg/L ^d	TN levels were generally consistent with reference values.
Total Kjeldahl Nitrogen	No state standard	
Ammonia	No state standard	
Nitrate/Nitrite	No state standard	
Hardness	No state standard 10-60 mg/l ^b	All Hardness values were within the 10-60 mg/l range and consistent with historical data
Lead (dissolved)	1.2 µg/L (chronic) ^a	All stations met criteria except Station 7. (2.17 µg/L.)
Copper (dissolved)	5.0 µg/L (chronic) ^a	All stations met criteria except Station 7. (98.2 µg/L.)
Zinc (dissolved)	65 µg/L (chronic) ^a	All stations met criteria. except Station 7. (144 µg/L.)
Cadmium (dissolved)	0.43 µg/L (chronic) ^a	All stations met criteria. (<0.7 µg/L.)
<i>E. coli</i> (Warm Weather- May-Oct)	126 CFU per 100 mL– geometric mean of four Samples in 30 days. No greater than 10% excursion frequency STV of 410 CFU per 100 mL in the 30 day interval ^a .	Stations 1 exceeded the 126 CFU per 100 mL geometric mean of four samples in 30 days. All Stations <410 CFU per 100 mL.
(Cool Weather- Nov.-Apr)	265 CFU per 100 mL geometric mean of four samples in 30 days; No greater than 10% excursion frequency STV of 861 CFU per 100 mL in the 30 day interval ^a	All stations met 265 CFU per 100 mL geometric mean of four samples in 30 days criteria. All stations <861 CFU per 100 mL.

^a Georgia Environmental Protection Division, Environmental Rule 391-3-6 at 50 mg/l hardness
^b Typical range for Piedmont area
^c Georgia General Stormwater Permit for Construction Activity, Appendix B
^d USEPA (2022)

The Watershed Assessment identified a number of issues to be addressed in the Watershed Protection Plan. This year’s sampling did not indicate issues other than those noted in the original Watershed Assessment:

- Occasional warm weather bacterial count exceedances.
- Occasional nutrient values exceeding reference criteria
- Occasional high turbidities, but mostly during wet weather.
- Sanitary Sewer Overflow that occur as a result of Inflow/Infiltration (I/I) during heavy rains.

IV. PROGRESS REPORT

The City of LaGrange Watershed Protection Plan uses an adaptive management approach and focuses on five broad strategies for addressing watershed issues: ordinance revision; increasing pollution control measures; implementation support; riparian area protection and Phase II Program; and public outreach. A five year implementation schedule was adopted by the LaGrange Mayor and Council as depicted in Table 7.

Strategy	Action	Schedule
1 Revising City of LaGrange Ordinances	1: Water quality and stream channel protection 2: Water quality volume for new development 3: Expand the riparian buffer to 50 feet 4: Maintenance of detention ponds 5: Protection during redevelopment 6: Georgia Stormwater Management Manual 7: Septic tank maintenance 8: Comprehensive sewer extension policy 9: DIRT 2 TMDL implementation	Year 1 Year 1 Year 1 Year 1 Year 1 Year 1 Year 1 Year 2 Year 5
2 Pollution Control	1: CMOM audit 2: Sewer collection system inspection program 3: Coordinate with Health Department 4: I/I reduction program 5: Sewer Improvement Plan and Implementation Schedule 6: Watershed Improvement Plan (if needed) 7: BMPs for forestry 8/9: NRCS Conservation Practices	Year 2 Year 2 Year 2 Year 2 Year 3 Year 5 Year 5 Year 5
3 Implementation Support	All: Provide implementation support	Year 1
4a Riparian Area Protection	All: Protection of riparian areas	Year 2
4b Phase II Program	1: Illicit discharge detection and elimination 2: Good housekeeping 3: Implement TMDL plan action items	Year 4 Year 4 Year 4
5 Public Awareness, Outreach, and Education	1: “Pick Up After Your Pet” program 2: Stormwater drain stenciling 3: Brochure about riparian protection 4: Septic system brochure 5: Sensible lawn management brochure 6: Signs at stream and watershed crossings 7: Fecal coliform education	Year 1 Year 1 Year 2 Year 2 Year 3 Year 4 Continuous

By the end of year 5 (2013-14), all of the initial action items in Table 7 had been implemented or started and other action items were added during and after year 6 as depicted in Table 8.

TABLE 8. WPP Implementation Schedule (updated 6/17/20)		
Strategy	Action	Schedule
1 Revising City of LaGrange Ordinances	1: Water quality and stream channel protection 2: Water quality volume for new development 3: Expand the riparian buffer to 50 feet 4: Maintenance of detention ponds 5: Protection during redevelopment 6: Georgia Stormwater Management Manual 7: Septic tank maintenance 8: Comprehensive sewer extension policy 9: DIRT 2 TMDL implementation	Year 1 Year 1 Year 1 Year 1 Year 1 Year 1 Year 1 Year 2 Year 5
2 Pollution Control	1: CMOM audit action items 2: Sewer collection system inspection program 3: Coordinate with Health Department 4: I/I reduction program 5: Sewer Improvement Plan and Implementation Schedule 6: Watershed Improvement Plan (if needed) 7: BMPs for forestry 8/9: NRCS Conservation Practices 10: Inspect car washes and maintenance shops 11: Inventory and develop action plan on detention ponds	Implemented Continuous Year 2 Continuous Continuous As Needed N/A Continuous Year 6 Year 6
3 Implementation Support	All: Provide implementation support	Year 1
4a Riparian Area Protection	All: Protection of riparian areas 1: Dixie Creek restoration project 2: Evaluate areas for restoration Dixie & Blue John	On Hold Year 6
4b Phase II Program	1: Illicit discharge detection and elimination 2: Good housekeeping 3: Implement TMDL plan action items 4. Implement GH training	Continuous Year 4 Year 4 Year 6
5 Public Awareness, Outreach, and Education	1: "Pick Up After Your Pet" program 2: Stormwater drain stenciling 3: Brochure about riparian protection 4: Septic system brochure 5: Sensible lawn management brochure 6: Signs at stream and watershed crossings 7: E. coli education 8: Disposable wipes	Year 1 Continuous Year 2 Year 2 Year 3 Year 4 Continuous Continuous

IV. A. Actions Implemented

This report year corresponds to Year 15. All items scheduled for Year 6 described in table 8 were initiated in year 6 and have for the most part been continued in years that followed. Most will involve long-term efforts for full implementation. Strategy activities listed in Table 8 were implemented as follows:

Strategy 1. Revision of City Ordinances:

The Watershed Protection Plan recommended actions to enhance the legal framework for water quality protection and minimize the impacts of development. During Year 1 the *Stormwater Management Ordinance* (Chapter 25-29) and the *Soil Erosion, Sedimentation, and Pollution Control Ordinance* (Chapter 25-31) were amended. A *Stormwater System Protection Ordinance* (Chapter 20-15-120) and an *On-site Sewage Management System Maintenance Ordinance* (Chapter 25-31) were established as well. During Year 3 revisions to the *Stormwater Management Ordinance* to facilitate implementation were adopted.

A “Comprehensive Sewer Extension Policy” was developed by City staff during Year 2 with final approval by the City Council in Year 3. The policy formalizes methods for sewer extensions, addresses cost responsibility including oversizing for future service, and establishes provisions for extensions to areas of failing septic systems.

The Year 5 action item was “DIRT 2 TMDL implementation”. A review of DIRT 2 and current City Ordinances determined that no revisions were needed as DIRT 2 was already incorporated within the *City Soil Erosion, Sedimentation and Pollution Control Ordinance*.

No changes to ordinances or policies have been made since year 5.

Strategy 2. Increase Pollution Control Activities:

A major focus of the WPP is improvement to the sanitary sewer system to prevent overflows. A small area of the city is on septic tanks, so septic tanks are also addressed.

Sewer System Improvement- the Watershed Protection Plan calls for a number of action items to address sanitary sewer overflows (SSO's) and improve management of the sewer collection system. The WPP action items related to sewer improvement were included in Consent Order EPD-WQ -5236 executed December 3, 2010 for SSO's from the City of LaGrange sewer system. This Consent Order is included in Appendix 2. The Consent Order contained an implementation schedule with penalties for missed milestones. Work began on many of these items in Year 1 and has continued with increased effort and emphasis on collection system maintenance and I/I identification. Sewer improvement activities that were implemented are summarized in paragraphs below. After several years of addressing the items in the Consent Order, on April 30, 2024, EPD notified the City of LaGrange that the City has satisfied all conditions of the Consent Order and that EPD now considers the Consent Order Closed. The notification of Consent Order closure is included in Appendix 2.

1. *CMOM Audit Implementation* – A Capacity, Management, Operation and Maintenance (CMOM) Audit was conducted in 2010-11. Many of the audit recommendations were covered in specific WPP and Consent Order items. The

City worked on implementing CMOM recommendations as budgets and staff time allowed.

One CMOM recommendation was for Sewer Modeling. The City contracted with a consulting firm to develop models of Sanitary Sewer basins. Models were completed and identified areas with potential flow constraints to be investigated and addressed.

Sewer Collection System Inspection Program – The WPP recommended implementation of an improved sewer collection system mapping and inspection program, including stream crossing inspections at regular intervals.

a. Mapping: The AutoCAD system map was converted to a GIS database. Collection of existing manhole GIS attribute data is now complete and updated as the system grows. iPads with links to allow in-field access to data and allow input of corrected data were purchased in Year 6 for all sewer crews and corrections and additions continue to be made to improve the accuracy of the map. The map continues to be updated as development occurs and new sewer is added.

b. Computerized Maintenance Management System (CMMS): A CMMS system was purchased for collection system management. Work orders are routinely entered through the system. The CMMS is a network based system and eventually will be linked to the City's GIS database.

c. Stream Crossing Inspections: A stream crossing inspection program began in the fall of '09. Major stream crossings were inspected quarterly. Approximately 472 stream crossings inspections were made annually and repairs performed as needed.

d. Easement Clearing, Line cleaning, and CCTVing: Two additional employees were added to the sewer crew in '09 to focus on easement clearing and sewer inspections. The Consent Order required inspection of 25% of the system each year. An additional Jet-Vac truck was purchased in 2013 to assist sewer crews in cleaning and clearing lines. A SL-RAT instrument for acoustical testing of sewers was purchased in Year 6 and staff trained in its use. The SL-RAT proved to be effective in prioritizing sewer line cleaning.

e. Fats, Oil and Grease (FOG) Management Program: Between 2007 and 2011, approximately 72% of the City's sanitary sewer overflows during dry weather were caused by grease blockages. In Year 3, the City evaluated the existing FOG program and developed a comprehensive FOG Management Program to address both residential and commercial FOG. The program document was approved by GAEPD September 9, 2011. Sewer crews stepped up cleaning of FOG "hotspots" and increased public education efforts. As indicated in the following chart, FOG management efforts have been effective:

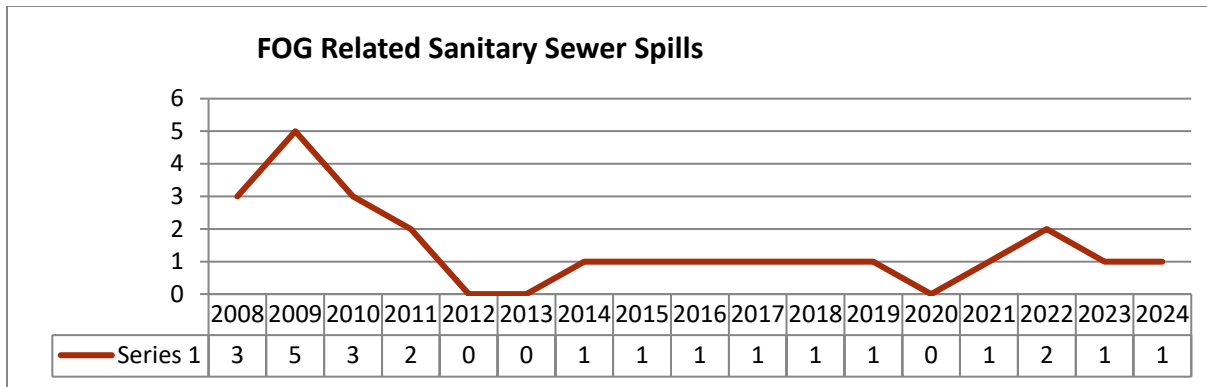


Fig. 2. FOG-related Sanitary Sewer Spills

This program continues to be implemented through sewer cleaning, grease trap inspections of Food Service Establishments and public education. Also, the City’s sewer department works in conjunction with the Water Pollution Control plant maintenance crews to vacuum grease from lift station wet wells on a regular basis as grease begins to accumulate in order to prevent lift station failures resulting from grease and debris fouling up the control system elements located in the wet wells. In addition to lift station wet well vacuuming, the City has, on an experimental basis, had a new FOG management technology called “*Wet Well Wizard*” installed in two lift stations. The result has been a reduced need to vacuum the lift stations by vigorously infusing air into accumulating grease causing it to re-mix into the wastewater to be pumped out of the lift station and not accumulate in the wet well where it could interfere with the water level sensors which control the pump activation. Funds have been budgeted to add another *Wet Well Wizard* in one of the city’s larger lift stations.

3. *Septic Tank Coordination with Troup County Health Department*- Approximately 8% of LaGrange’s population is on septic tanks, located mostly in the northern portion of the city. An *On-site Sewage Management System Maintenance Ordinance* was adopted April 27, 2010. The ordinance requires repair of a malfunctioning septic system within 60 days and provides penalties for failure to comply. The Environmental Health Division of the Troup County Health Department has primary regulatory authority for septic tanks located in the City of LaGrange. No significant issues regarding septic tanks were brought to the City’s attention during this report year.

4. *I/I Reduction Program* – Inflow/Infiltration identification efforts include:

- a. Flow Monitoring: In 2011, the city contracted with the consulting firm ADS to install temporary flow meters in roughly one-quarter of the sewer system each year. The final portion of the study was completed in 2015.
- b. CCTV/Smoke Testing: Onsite training of City personnel in smoke testing was conducted in 2013. City crews smoke test and Closed-Circuit Television (CCTV) areas identified as Inflow & Infiltration (I/I) contributors. City crews continue using CCTV, smoke and dye testing to locate I/I contributors from

sources such as failing storm drain structures, abandoned service lines and damaged sewer lines. As problems are found, corrective actions are taken.

One recurring I/I problem in LaGrange occurs in the Dixie Creek basin. Specifically, in the Creekside Subdivision, there are one, sometimes two manholes that often overflow during heavy rains.

The cause of the overflows is that the Mooty Bridge Lift Station becomes overwhelmed with excessive sewer flows largely as a result of I/I and also because the wet well of the lift station is somewhat shallow, making it easily overwhelmed. As the excessive wastewater reaches the lift station, wastewater backs up the sewer lines upstream of the lift station wet well and flows out of the lowest upstream manhole(s) as it does in the Creekside Subdivision.



Sanitary sewer overflow in Creekside Subdivision due to I/I

Over the years many efforts have been made by the City to track down and correct I/I sources in the basin using flow monitoring, smoke testing, dye testing, and closed circuit TV inspection of the sewer lines. As sources have been found, broken or cracked sewer mains have been repaired or replaced, and manholes have been rehabilitated. In order to rectify the sewer overflows in the Creekside Subdivision, construction is currently underway to upgrade the Mooty Bridge Lift Station and Force Main. This project is discussed further later in this report where the Notice of Violation of May 3, 2024 is addressed in Appendix 2.

5. *Sewer Improvement Plan and Implementation Schedule* - Consent Order EPD-WQ - 5236 required the City of LaGrange to develop a sewer improvement plan and implementation schedule. The schedule provided a plan for systematic sewer rehabilitation projects and funding considerations. In complying with the consent order, the City submitted semi-annual progress reports to keep EPD informed with the status of scheduled improvements and implementations. On April 30, 2024, EPD notified the City that after review of the records, EPD has determined that the City has satisfied all conditions outlined in Consent Order No. EPD-WQ-5236 and that EPD considers the consent order closed. This is documented in Appendix 2.

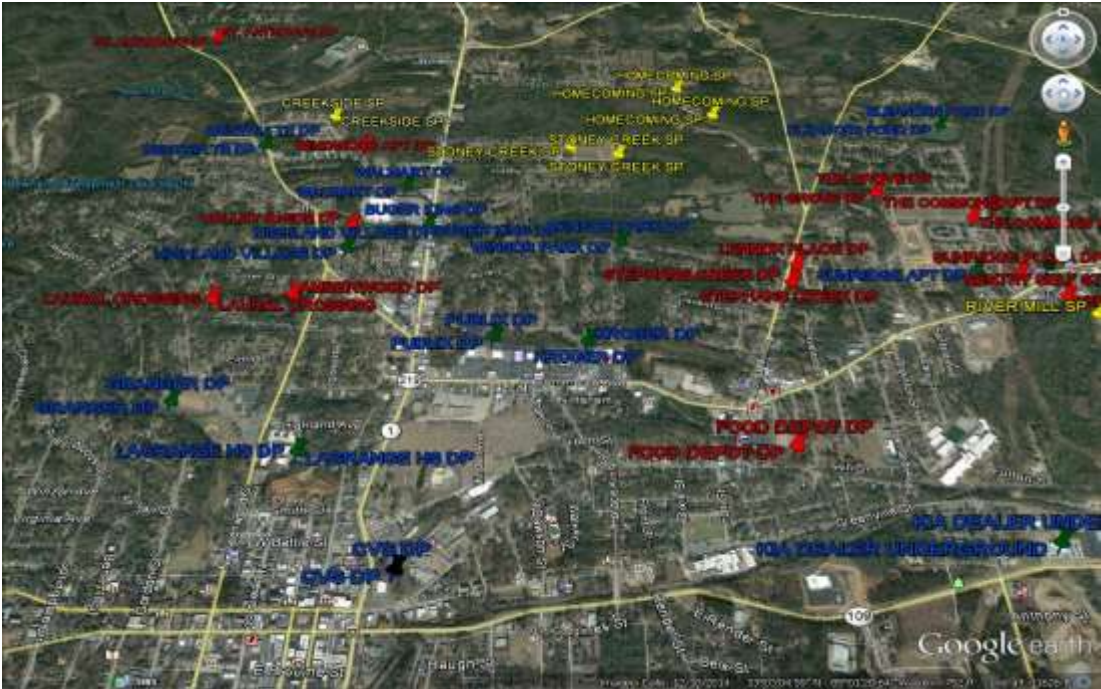
6. *Watershed Improvement Plan (WIP) (if needed):* The WPP recommends that after implementing other measures (in year 5), the City assess if Watershed Improvement Plan(s) outlining a Capital Improvement Plan (CIP) of BMPs and stream restoration projects are needed, starting with the most impacted watershed. At this time, the City does not have the resources to implement a full WIP

During Year 6 an evaluation of other potential restoration sites on Dixie and Blue John (second most impacted) Creeks were conducted. Sites were selected to consider for restoration.

8/9. *BMPs for forestry, NRCS Conservation Practices:* These action items were listed in the WPP for Year 5 implementation. However, staff review determined that they were not applicable within the City and not within the City's jurisdiction.

10. *Inspect Car Washes and Maintenance Shops:* Car wash inspections were begun as an action item in 2014. Inspections have not been done in recent times.

11. *Inventory and develop action plan on detention ponds:* An inventory of all existing detention ponds within the City of LaGrange were completed in year 6 and located on a map by the City's Community Development Department. In addition, a meeting was held between the Water Quality Department and Community Development to begin discussing policy development for maintaining ponds and insure that all future developments be required to sign a "Stormwater Maintenance Agreement" placing the responsibility of keeping ponds maintained upon the development or property owner. The Stormwater Maintenance Agreement policy has now been implemented.



Detention Pond Inventory 2015

Strategy 3: Implementation Support:

Personnel additions made during Year 1 in the collection division were maintained. Contract services for Flow Monitoring and Sewer Modeling were funded and carried out. Additional implementation support added in Year 4 consisted of staffing changes to create positions for a Water Quality Engineer and a Watershed/Pretreatment Specialist. These positions were filled that year and enabled the City to better focus activities related to watershed improvements.

The City's Community Development Department continues to serve as the Local Governing Authority for Soil Erosion and Sedimentation Control permitting and enforcement. Semi-annual reports of plan reviews, inspections and enforcement actions are submitted to the Roosevelt Soil and Water Conservation District.

Charles Abbot Associates, Inc. has been contracted to do plan reviews and field inspections for storm water management and silt & erosion control working with the City's Community Development Department.

Strategy 4: Riparian Area Protection and Phase II Program:

4a. Riparian Area Protection

A buffer restoration project on Park Branch which began in 2011 in conjunction with LaGrange College continued for several years. Professor Randy Colvin's Spring BIO3334-General Ecology class worked on other small contiguous areas through the years and the restoration work expanded to encompass the entire stream segment in front of Price Theater with the addition of trees and native plants in the riparian area. Biological indicators continue to be analyzed each year and they host clean-ups and field trips for various educational groups throughout the year. A sign informs the public of the purpose. In more recent years, Dr. Yates' Conservation Biology class did a streamside clean up to remove invasive plant species in fall 2016. Dr. Molli Newman's Zoology class has used it as a sampling site for the student's research projects. Dr. Newman's Water Wars class also has used that section of Park Branch as a sampling site for learning about organisms within freshwater streams, sampling the stream for fish and macroinvertebrates, as well as looking at water quality





2011

Park Branch

2022 Park Branch

Last year, just downstream of the aforementioned Park Branch Restoration Project, the Chattahoochee River Keepers working together with LaGrange College did a continuation of the restoration starting from where Park Branch crosses beneath Panther Way and extending approximately 618 linear feet across the LaGrange College Campus to a point where the stream goes underground into a piped system. Details of the project are described in Appendix 4.



Park Branch

before restoration

Park Branch after restoration

LaGrange College Students planted native species of plants along the stream banks under the supervision of the Chattahoochee River Keeper staff.





In addition to the Park Branch Restoration Projects, the City of LaGrange has worked with Dr. Newman in helping her to install pollutant removal Rain Gardens along the City's Thread Project. The Thread is a multi-purpose network of walking/biking trails for the citizens of LaGrange to access many parts of the city on foot or via bicycle. The Thread provides fitness and educational opportunities allowing people to learn about and commune with nature as well as to get or stay physically fit and walk their dogs.

Dr. Newman's rain gardens are designed to help remove suspended solids and organic pollutants from urban storm water runoff before reaching the receiving streams. As shown in the photographs below, storm water is captured in the rip rapped area to the right side of the trail and is conveyed downstream via pipe beneath the trail to the rip rapped area to the left side of the trail where there are plants which take in the pollutants allowing cleaner water to flow on down to the receiving stream.



Finally, during the 2016-17 year (year 8), the Granger Park Water Quality Pond, which was put into place for storm water management and to control siltation downstream in the Pinewoods Creek Basin was dredged to remove accumulated silt, thereby replenishing storage volume of the pond.

4b. Phase II Program:

The City of LaGrange has not yet been designated as a Small MS4; however, several of the requirements of the Phase II Stormwater General Permit were included as implementation action items in the WPP:

1. *Illicit Discharge Detection and Elimination*- Stream walks of all of the creeks within the LaGrange city limits in efforts to locate and take corrective actions for illicit discharges. Over the years, City staff has investigated suspected discharges to creeks. Problems detected during stream walks include discharges of waste wash water from floor cleaning operations from a grocery store and inert particulate matter spill from a carpet recycling plant which found its way into the plant's storm drainage system and into the creek. In both cases, the guilty parties were contacted to determine the causes of these discharges and they were warned against allowing such discharges to occur again. Other problems detected in previous years include, a washing machine discharge, oil discharge from an automotive repair shop, sewer line breaks, runoff from car washes, and wash down from industrial activities. An illicit discharge from the Wild Leap Brewery was discovered by passersby where leakage from a truck which hauled waste mash for disposal was dripping on to the parking lot pavement and running into a storm drain which discharges into Tanyard Creek. Putrid conditions were noted in the creek. The City met with the Wild Leap Brewery management to discuss the problem and the waste discharge was cleaned up and management of this wastewater was changed such that it now goes to the City's sanitary sewer system rather than on to the pavement.

During years 12, 13, and 14, the Blue John Creek and Colquitt Creek basins were investigated. No illicit discharges were noted; however, much litter was observed as well as stretches of creek where sedimentation has been deposited in the stream beds.

During this report year, Long Cane Creek was investigated.



The Long Cane Creek basin is mostly rural, and undeveloped with forest and pasture land, but there are some residential developments within the basin and much of the head waters are in areas of commercial development within the City of LaGrange. No illicit discharges were noted in the Long Cane Creek basin during this year's investigation



Pictured above is the location of Station 7 for the Watershed Protection Plan sample collection. Of the four basins, Long Cane Creek is the least impacted by development and human activity. The stream bed at Station 7 is not silted up as with sample locations in other basins.



Downstream of station 7 Long Cane Creek winds past the Lexington Subdivision through heavily wooded areas as shown in the above photograph.



Much of the Long Cane Creek Basin is occupied by livestock pasture land.



Many of the tributaries in the Long Cane Creek Basin have impoundments on them. Above is Bryant Lake which is surrounded by the Bryant Lake residential subdivision. Bryant Lake discharges into the main channel of Long Cane Creek.

The City's *Leaving LaGrange Better than We Found It* program works in conjunction with the Chattahoochee River Keepers (CRK) to try to prevent litter from polluting the City's streams. The Chattahoochee River Keepers have installed trash traps in streams in LaGrange to capture litter that has

found its way into the streams. CRK staff and volunteers frequently remove the litter from the traps and maintain the structures.



A sign explaining to passersby the purpose of the trash trap shown below.



The Trash Trap located on Blue John Creek just upstream of the Orchard Hill Road Crossing. Note the trash that has collected on the trap. Trash is removed on a weekly basis.

2. *Municipal Good Housekeeping*

Steps to minimize the effect of City operations on stormwater runoff have been taken. Improvements at the City Garage and Fire station were made in Year 3. In Year 4 meetings were held with the Public Works Manager, Street Division Superintendent and Landscaping Superintendent. Areas of concern in City operations were identified and discussed. Materials on pollution prevention practices were

provided. In Year 5 meetings were held with the Water Treatment Plant Manager, Public Utilities Managers for Gas and Electric, Police Department Technical Coordinator, Animal Control Superintendent and Garage Superintendent. Again, areas of concern were discussed and materials on pollution prevention and practices were provided. In year 6, employee good housekeeping training was conducted with employees with the Gas and Electrical Departments, the Water Pollution Control Plant, the Sewer Department, the Landscape Department and the Street Department. With changes in personnel as years go by, the good housekeeping training will be repeated in the City departments for newer employees.



Municipal Good Housekeeping Training 2015

3. *Implement TMDL action plans.*

TMDL Implementation plans for Troup Branch, Park Branch, Lee Branch, Dixie Creek, and Yellow Jacket Creek were developed by the Chattahoochee – Flint RDC. Action items designated for the City of Lagrange have included ordinance revisions pertaining to storm water management and erosion control, stream monitoring, education and outreach, Illicit Discharge Detection and Eliminations, and Adopt-a-Stream. All action items have been addressed by the City's Watershed Protection Program, except an Adopt-a-Stream program. The Upper Chattahoochee River Keeper and Sierra Club have initiated Adopt-a-Stream Programs in this area.

Strategy 5. Public Awareness, Outreach, and Education:

The WPP calls for development of a Public Awareness, Outreach, and Education program with specific activities recommended each year. Due to the Covid-19 virus situation which resulted in social distancing, and school and business shut-downs, opportunities for public outreach and educational activities were severely limited for a few years. So very little was done in this area. Working with organizations like the Chattahoochee River Keepers and *LLBTWFI*, we hope to pick back up with such activities in the coming year. Activities conducted in past years have included:

A. Continuation of “General Storm Drain Awareness”, “Pick Up After Your Pet”, “Sensible Lawn Care”, FOG programs. Pet waste stations are maintained and new ones added as the Thread Project expands. Presentations to college classes including watershed protection information have been conducted emphasizing that “flushable” wipes are not really flushable and can clog sewer lines and result in SSO’s. Copies of publications in use are included in Appendix 3.



B. Creek/Watershed Signage. Signs at streams and watershed boundary crossings were the public awareness action item scheduled for Year 4. Several creek name signs and 10 Watershed signs were installed. The signs have been effective in catching the attention of the LaGrange citizens as many of them have asked about the signs and mentioned that there are creeks in locations where they never knew that a creek existed.



C. Chattahoochee River Keeper's Floating Classroom. The Chattahoochee Riverkeepers (CRK) have a pontoon boat named "Miss Sally" on which tours are given on West Point Lake to various groups of all ages to educate them on protecting and preserving the environment and to show the public first-hand the pleasures of our lakes, rivers, and streams, and the importance of pollution prevention. For year 8, two trips were chartered with the CRK for City of LaGrange employees and others to experience. A total of 29 people participated in this experience. More floating classroom trips are planned for the coming year.



D. Leaving LaGrange Better than we found it. On April 20, 2018 from 8:00 am to 1:00 pm, all non-essential, and able bodied City employees were required to participate in a litter pick-up effort. That was the start of what has become an annual event. Different groups of employees were assigned their individual areas to clean up and the city limits area is mostly covered. As part of the campaign, employees are supplied tee shirts, safety vests, gloves and trash bags and afterwards they are treated to lunch catered by a local restaurant.

Litter pick-up efforts have been conducted along streets as well in streams and parts of West Point Lake. In addition to litter, grocery carts have been retrieved and returned to their proper owners and illegal tire dumps have been discovered and several trailer loads of tires, trash and debris have been hauled to the City Landfill.

With the popularity and success of the litter pick-up program it was decided to make it a monthly event in which the public is encouraged to participate in cleaning up the city. Each year, these monthly litter pick-up events take place on the first Saturday of the month starting in the fall, and includes City employee volunteers as well as volunteers from outside of the City, and volunteers from some local industries, schools and other civic-minded organizations. Companies and organizations that participated in litter pick-ups this year include, Community Bank & Trust, Delta Sigma Theta sorority, DASH, LaGrange High School Service Club, Bell Line Community, West Georgia Technical Community College, LaGrange Lion's Club, and LaGrange Youth Council.



Volunteers pick up litter in the Jones Street Park area, January 13, 2024



Volunteers pick up litter along South Greenwood Street, March 2, 2024



Abandoned grocery carts are among one of the larger items often retrieved during the litter pick up sessions. The grocery carts are returned to the stores



Discarded tires are also typical large items picked up.



**Volunteers remove one of many discarded tires from a gully in the Bacon Street Area
February 4, 2023**

Getting Children involved with *Leaving LaGrange Better than We Found It*

In addition to adult and young adult participants, the *Leaving LaGrange Better Than We Found It* program, the City's children are invited to participate in the litter pick-up activities to instill in them a sense of pride in their community. In recent years, the First Presbyterian Montessori School has gotten involved in the litter pick-up activities.



***Leaving Lagrange Better then We Found It (LLBTWFI)* encourages children to be proud of their community at a young age.**

Encouraging children while they are young to appreciate a clean, litter free environment is part of the goal of *Leaving LaGrange Better than We Found It*.



a



Montessori students picking up litter as participants in the *Leaving LaGrange Better than we Found It* program. April 18, 2023



Leaving LaGrange Better Than We Found It - Litter Pick-up February 6, 2021

G. Educating the Public on Wastewater Treatment and Sanitary Sewer Systems – The City has open invitations to schools, colleges, and others to tour the City’s Long Cane Creek Water Pollution Control Plant. Due to the concerns related to Covid-19, and now due to plant site construction, no plant tours have been done since 2020. These tours will resume when construction activities are complete and things are back to normal. Past tours are shown below..

Since 2018, Dr. Molli Newman, professor of the “Water Wars: The Uses and Misuses of Water Resources” class at LaGrange College, had made an annual visit to tour the Long Cane WPC Plant.





LaGrange College Water Wars: Water Resources Class – January 2020

During the tours, visitors are taught about how a wastewater treatment plant works to remove pollutants and clean the water. They are guided around the plant and shown the various processes with explanations of what is going on at each process. They are also shown a map of the City's sewer system with explanations of how the wastewater gets from the homes, businesses, and industries in town to the wastewater treatment plant. Gravity sewers and lift stations are explained along with problems that can occur in them to cause overflows and spills. Also, it is explained to them why certain things should not be flushed down toilets or poured down drains, such as cooking oils and grease, paper towels, rags, rubber gloves, "flushable wipes", and other items which can get hung up in the pipe system, thereby impeding the flow of wastewater in the pipes.

IV. B. Documentation of Water Quality Improvements

Once again no significant measureable improvements in water quality were noted this year. Sedimentation in the streams has been the biggest factor in declining stream conditions. Water quality parameters were generally within state standards and at acceptable levels for the protection of aquatic biota. While improvements in water quality have not been noticed, there has been significantly lower incidences of fats, oil, and grease (FOG) related sewer spills as a result of implantation of the FOG program and regular sewer line inspections, cleaning and frequent lift station inspection and grease removal. The litter clean-up efforts of the *LLBTWFI* and the trash traps installed by the Chattahoochee River Keepers has likely made some improvements in the esthetics of the streams as well as some pollution removal. Since the litter clean-up efforts began, in 2018, participants have stated that there does appear to be noticeably less litter to pick up than in previous years; however, no measurements have been documented on this. Finally, stream buffer reclamation projects by the Chattahoochee River Keepers and LaGrange College has very likely made improvements in the stream habitats and in pollution removal by the vegetative buffers where the buffer reclamation projects were put in place.

IV. C. Summary of Changes and/or Revisions to the WPP

Changes reported in previous years were maintained:

1. Shoal Creek sample location (2009-10).
2. Addition of Dissolved Metals to Water Quality sampling parameters (2010-11).
3. Use of alternative public education formats in lieu of “brochures”, etc. specified in the original plan (2010-11).
4. Upon completion of implementation of action items in Table 7 in Year 5 (2013-14), Year 6 action items were added to the original Implementation Schedule as shown in Table 8.
5. Blue John Creek sample location, Station 3, was replaced with Station 3.1 for better site accessibility (2017-18).
6. Discontinuation of fecal coliform sampling with *E. coli* to be used as the standard indicator for waterbodies designated “fishing” or “drinking water” per change in EPD criteria (2022-23). The last date that fecal coliform sampling was conducted was April 25, 2023.

The most recent revision to the WPP was the replacement of fecal coliform with *E. coli* and the elimination of the requirement to sample fecal coliform for bacterial evaluation. Continued enforcement and follow-up on action items will be required for long-term impact. Additional action items will be considered each year to strengthen the WPP and target specific watersheds.

V. Planned Action Items for 2024-25 Report Year

Strategy 1: Revising City of LaGrange Ordinances

Meetings will be scheduled with the City Management and Community Development Department to assess the effectiveness of the ordinance revisions and additions that were made in Years 1 and 2. Charles Abbott Associates, LLC engineering firm has taken over storm water and sediment & erosion control plan reviews and inspections. Evaluations will be made of the plan review and inspection processes for storm water management and erosion control in order to determine where improvements can be made since sedimentation issues are the greatest factors in degrading the City’s stream habitats. The primary focus will be to determine where improvements can be made in these areas.

Strategy 2: Pollution Control

Items 2, Sewer Collection System Inspection Program, 4, I/I Reduction Program, and 5, Sewer Improvement Plan and Implementation Schedule. Meet Consent Order requirements for sewer inspections and maintenance, I/I reduction and continue to implement the sewer system improvement plans as described in Appendix 2 even though the Consent Order has now come to a close.

Strategy 4a: Riparian Area Protection

Continue to work with the Chattahoochee River Keepers as opportunities arise on stream bank improvements and to educate the public on pollution prevention and environmental issues.

Strategy 4b: Phase II Program

Continue Illicit Discharge detection and elimination – annual follow-up with goal of 20% per year. Primary focus in Year 15 was Long Cane Creek Basin. Year 16 will focus on the Tanyard Creek, Park Branch, Lee Creek and Troup Branch portions of the Blue John Creek Basin. These creeks are the most urban of the streams in LaGrange and most likely to be affected by illicit discharges.

Strategy 5: Public Awareness, Outreach, and Education

Continue public education on subjects such as pollution sources in storm drainage and streams. The proper disposal of oil, grease and “flushable wipes” will be discussed with citizens at public gatherings to educate citizens in order to help decrease problems in sewers that lead to sanitary sewer overflows. City sponsored litter clean-ups will continue during cooler months.

Appendix 1: Long Term Monitoring Data

Appendix 1.A. Electronic Data Submission

Flash Drive enclosed:

- 1. “City of LaGrange Watershed Data.xls” using EPD WA Data Reporting Template**
- 2. LaGrange Quarterly Sampling Lab Reports**

PLEASE SEE ENVELOPE AT FRONT OF REPORT

Appendix 1.B. 2023-24 Water Quality Data Tables by Parameter

2023-24 Water Quality Data Tables by Parameter

<i>In-Situ Measurements for Temperature (Degrees Celsius)</i>				
Date	Station 1 – Shoal Ck	Station 2-Dixie Ck	Station 3- Blue John Ck	Station 7 –Long Cane Ck
8/22/23	24.33	22.92	24.0	24.1
9/13/23	22.4	23.4	21.8	22.5
9/20/23	22.0	22.9	20.6	21.6
9/25/23	22.4	22.6	20.2	22.1
9/27/23	22.2	22.7	21.1	22.0
11/14/23	12.9	13.44	13.78	12.99
2/7/24	6.88	8.54	6.50	7.14
2/7/24	6.88	8.54	6.50	7.14
2/13/24	6.27	7.15	7.10	7.02
2/21/24	6.51	7.02	6.21	6.85
2/22/24	7.62	7.89	7.16	7.15
4/17/24	18.1	17.36	17.6	17.6

<i>In-Situ Measurements for pH (pHU)</i>				
	Station 1 – Shoal Ck	Station 2-Dixie Ck	Station 3- Blue John Ck	Station 7 –Long Cane Ck
8/22/23	7.18	7.06	7.36	7.34
11/14/23	7.18	7.17	7.33	6.74
2/7/24	7.12	7.00	6.98	7.12
4/17/24	6.92	6.95	6.90	6.90

<i>In-Situ Measurements for Dissolved Oxygen (mg/l)</i>				
	Station 1 – Shoal Ck	Station 2-Dixie Ck	Station 3- Blue John Ck	Station 7 –Long Cane Ck
8/22/23	6.79	7.39	6.55	6.90
11/14/23	8.14	8.44	8.37	7.25
2/7/24	10.58	9.92	10.38	10.00
4/17/24	7.88	8.31	7.98	7.51

<i>In-Situ Measurements for Conductivity (us/cm)</i>				
	Station 1 – Shoal Ck	Station 2-Dixie Ck	Station 3- Blue John Ck	Station 7 –Long Cane Ck
8/22/23	92	122	176	83
11/14/23	94	119	147	81
2/7/24	68	98	130	61
4/17/24	79	109	147	72

*Field Meter would not calibrate for Conductivity, Turbidity, and %Dissolved Oxygen

Laboratory Results for In-stream Biological Oxygen Demand (BOD mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	0.85	0.85	0.87	0.85
11/14/23	<1.29	<1.29	1.31	<1.29
2/7/24	0.80	0.82	1.08	<0.79
4/17/24	<0.61	<0.61	<0.61	<0.61

* MDL = 2 mg/l

Laboratory Results for In-stream Chemical Oxygen Demand (COD mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<10	<10	<10	<10
11/14/23	<10	<10	<10	<10
2/7/24	<10	<10	<10	<10
4/17/24	<10	<10	<10	<10

* Laboratory COD Reporting Limit of 10 mg/l

Laboratory Results for In-stream Total Suspended Solids (TSS mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	6	6	7	10
11/14/23	10	13	14	4
2/7/24	6	11	6	10
4/17/24	12	4	6	10

* MDL = 4 mg/l

Laboratory Results for In-stream Total Phosphorus (TP mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	0.003	0.01	0.02	0.003
11/14/23	0.003	0.003	0.01	0.003
2/7/24	0.01	0.01	0.03	0.02
4/17/24	0.02	0.01	0.01	0.01

* MDL = 0.01 mg/l

Laboratory Results for In-stream Orthophosphorus (SRP mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	0.01	0.003	0.01	0.01
11/14/23	0.01	0.01	0.01	0.003
2/7/24	0.003	0.003	0.003	0.01
4/17/24	0.02	0.02	0.01	0.02

* MDL = 0.01 mg/l

Laboratory Results for In-stream Total Kjeldahl Nitrogen (TKN mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<0.5	<0.5	0.543	<0.5
11/14/23	<0.5	<0.5	0.522	<0.5
2/7/24	0.612	<0.5	<0.5	<0.5
4/17/24	<0.5	<0.5	<0.5	<0.5

* laboratory reporting limit = 0.5 mg/l

Laboratory Results for In-stream Ammonia Nitrogen (NH₃-N mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	0.03	0.02	0.08	0.03
11/14/23	0.01	0.01	0.03	0.01
2/7/24	0.05	0.02	0.06	0.04
4/17/24	0.06	0.01	0.04	0.05

* MDL 0.01

Laboratory Results for In-stream Nitrate-Nitrite Nitrogen (NO₃-NO₂ mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	0.186	0.689	0.398	0.131
11/14/23	0.053	0.493	0.073	<0.05
2/7/24	0.176	0.652	0.408	<0.05
4/17/24	0.195	0.551	0.345	0.097

* laboratory reporting limit = 0.05 mg/l

Laboratory Results for In-stream Total Recoverable Lead ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<1.0	<1.0	<1.0	<1.0
11/14/23	<1.0	<1.0	<1.0	<1.0
2/7/24	<1.0	<1.0	<1.0	<1.0
4/17/24	<1.0	<1.0	<1.0	<1.0

Laboratory Results for In-stream Total Recoverable Copper ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<5.0	<5.0	<5.0	<5.0
11/14/23	<5.0	<5.0	<5.0	<5.0
2/7/24	<5.0	<5.0	<5.0	<5.0
4/17/24	<5.0	<5.0	<5.0	<5.0

* laboratory reporting limit = 2 ug/l

Laboratory Results for In-stream Total Recoverable Zinc ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<10.0	<10.0	<10.0	<10.0
11/14/23	<10.0	<10.0	<10.0	<10.0
2/7/24	<10.0	<10.0	16.4	<10.0
4/17/24	15.4	<10.0	<10.0	28.6

* laboratory reporting limit = 10 ug/l

Laboratory Results for In-stream Total Recoverable Cadmium ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<0.7	<0.7	<0.7	<0.7
11/14/23	<0.7	<0.7	<0.7	<0.7
2/7/24	<0.7	<0.7	<0.7	<0.7
4/17/24	<0.7	<0.7	<0.7	<0.7

* laboratory reporting limit = 0.7 ug/l

Laboratory Results for In-stream Dissolved Lead ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<1.0	<1.0	<1.0	2.17
11/14/23	<1.0	<1.0	<1.0	<1.0
2/7/24	<1.0	<1.0	<1.0	<1.0
4/17/24	<1.0	<1.0	<1.0	<1.0

* laboratory reporting limit = 1 ug/l

Laboratory Results for In-stream Dissolved Copper ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<5.0	<5.0	<5.0	98.2
11/14/23	<5.0	<5.0	<5.0	<5.0
2/7/24	<5.0	<5.0	<5.0	<5.0
4/17/24	<5.0	<5.0	<5.0	<5.0

* laboratory reporting limit = 2 ug/l

Laboratory Results for In-stream Dissolved Zinc ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<10.0	<10.0	<10.0	144
11/14/23	<10.0	<10.0	<10.0	<10.0
2/7/24	<10.0	<10.0	<10.0	<10.0
4/17/24	<10.0	<10.0	<10.0	<10.0

* laboratory reporting limit = 10 ug/l

Laboratory Results for In-stream Dissolved Cadmium ug/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	<0.7	<0.7	<0.7	<0.7
11/14/23	<0.7	<0.7	<0.7	<0.7
2/7/24	<0.7	<0.7	<0.7	<0.7
4/17/24	<0.7	<0.7	<0.7	<0.7

* laboratory reporting limit = 0.7 ug/l

Laboratory Results for In-stream Hardness (CaCO3 mg/l)				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	27.6	39.2	56.0	24.8
11/14/23	26	42	46	21.6
2/7/24	14	23.6	30.8	13.2
4/17/24	20.0	28.8	34.4	19.2

Laboratory Results for In-stream Alkalinity mg/l				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
8/22/23	48.1	64.9	62.1	51.3
11/14/23	49.8	48.7	54.1	33.1
2/7/24	52.0	48.6	46.4	39.7
4/17/24	50.2	80.1	83.8	45.8

*Testing for Alkalinity started on the 2/11/16 sampling event.

Laboratory Results for Fecal Coliform (CFU/100 ml) – Warm Weather				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
Geometric mean			-	

* Does not meet State criteria= 200 CFU/100ml for May-October

Laboratory Results for Fecal Coliform (CFU/100 ml) – Cool Weather				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
Geometric mean				

* Does not meet State criteria= 1000 CFU/100ml for November – April

**Does not meet State’s one time maximum of 4,000 CFU/100 ml for November - April

Laboratory Results for E. Coli (CFU/100 ml) – Warm Weather				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
9/13/23	380	70	60	20
9/20/23	260	80	100	50
9/25/23	260	100	50	70
9/27/23	300	90	80	90
Geometric mean	296	84	70	50

Laboratory Results for E. Coli (CFU/100 ml) – Cool Weather				
	Station 1 – Shoal	Station 2-Dixie	Station 3- Blue John	Station 7 –Long Cane
2/7/24	80	10	10	40
2/13/24	50	40	20	10
2/21/24	70	80	20	40
2/22/24	10	20	40	60
Geometric mean	41	28	20	31

Appendix 1.C. Comparison of City of LaGrange Long Term Water Quality Monitoring Results

Table -. Comparison of City of LaGrange Long Term Water Quality Monitoring Results

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
DO (mg/l)								
2023-24	6.79-10.58		7.39-9.92		6.55-10.38		6.9-10.00	
2022-23	6.22-11.4	12.6	9.5-11.74	11.75	7.78-13.7	13.5	9.2-14.6	12.2
2021-22	7.62-15.0	11.9	9.55-13.2	12.01	10.2-14.9	11.5	9.14-14.8	11.7
2020-21	4.3-6.8	9.2	7.13-7.79	10.04	6.09-11.3	10.34	7.0-7.81	9.5
2019-20	5.32-10.7		6.89-9.53		6.15-10.31		6.22-11.31	
2018-19	6.75-9.96	8.71	6.83-9.04	8.84	7.27-9.56	9.13	6.55-10.5	8.64
2017-18	7.22-9.81	8.90	8.33-9.94	9.46	8.65-9.82	8.71	8.27-9.80	8.08
2016-17	6.48-10.74	8.76	8.2-10.9	8.88	7.26-12.9	7.75	8.36-11.0	8.93
2015-16	6.42-12.7		7.14-11.6		6.89-12.1		6.77-13.2	
2014-15	6.75-11.33		6.49-10.73		6.64-11.06		6.22-12.18	
2013-14	7.58-9.67	6.20-9.3	8.22-9.58	6.94-9.66	9.46-7.7	6.49-8.6	7.39-9.46	6.01-8.84
2012-13	6.52-11.11		7.05-10.1		6.12-10.33		4.95-13.94	
2011-12	7.24-11.72	11.14	7.58-10.9	10.51	5.32-10.76	10.76	6.89-10.85	10.56
2010-11	6.63-11.12	8.18	6.61-11.32	7.97	5.31-11.92	6.42	6.35-6.97	6.52
2009-10	5.30-10.98	8.67	7.69-10.85	8.66	6.45-9.06	7.75	7.35-10.92	8.72
2005-6	6.4-9.1	8.95-9.77	7.4-9.4	9.4-10.06	6.0-9.1	8.55-9.76	7.3-9.3	8.52-10.02
pH (pHU)								
2023-24	6.92-7.18		6.95-7.17		6.90-7.36		6.74-7.34	
2022-23	5.77-7.62	5.92	5.9-7.42	6.04	5.14-7.22	5.69	5.63-7.58	5.76
2021-22	5.77-6.35	5.87	6.0-6.41	5.9	5.65-6.03	5.7	5.59-6.11	5.76
2020-21	6.09-6.6	5.56	6.4-6.62	6.12	5.84-6.21	5.69	5.93-6.5	5.79
2019-20	6.27-6.97		6.42-7.09		5.83-6.58		5.97-9.85	
2018-19	6.8-7.33	6.91	6.77-7.23	6.98	6.72-7.27	6.92	6.80-7.31	6.63
2017-18	6.15-6.89	7.14	6.23-6.92	7.11	5.29-7.17	7.29	6.09-6.96	7.17
2016-17	5.89-6.07	6.37	5.7-6.09	6.32	5.56-5.69	6.2	5.4-6.25	6.46
2015-16	5.23-6.16		5.29-6.44		5.43-6.95		5.37-6.23	
2014-15	5.5-5.72		5.4-7.24		5.76-6.83		5.57-7.33	

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
pH (pHU)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2013-14	5.82-5.86	5.68-6.78	6.15-6.86	5.51-6.56	6.44-7.17	5.99-6.84	5.87-6.04	5.27-6.94
2012-13	5.75-6.74		6.16-7.25		5.92-7.20		5.98-7.26	
2011-12	6.17-6.82	6.75	6.20-6.78	6.19	6.48-6.94	6.95	6.42-6.86	6.23
2010-11	6.29-6.88	6.31	6.30-6.85	6.12	6.19-6.62	6.72	6.36-6.97	6.52
2009-10	6.24-7.30	6.73	6.30-7.27	7.00	6.42-7.30	6.56	6.42-7.34	6.69
2005-6	5.4-6.61	6.56-6.89	5.25-7.10	6.40-6.87	6.33-7.52	6.80-7.01	5.61-6.35	6.65-7.07
Water Temp (C)								
2023-24	6.27-24.33		7.02-23.4		6.21-24.0		6.85-24.1	
2022-23	8.53-22.3	10.8	8.80-21.2	11.8	8.52-22.1	11.1	8.81-22.1	10.75
2021-22	6.67-17.6	14.9	8.6-23.5	14.19	6.7-25.1	13.7	6.8-22.5	13.8
2020-21	8.0-23.8	8.8	9.4-23.6	9.23	7.4-24.0	8.89	8.1-23.9	8.9
2019-20	10.9-23.6		11.3-22.5		10.5-23.9		11.3-23.8	
2018-19	11.2-24.1	11.61	10.2-27.8	12.08	10.2-24.6	12.7	10.1-24.6	11.7
2017-18	6.4-23.5	16.0	7.6-23.6	16.1	5.6-24.2	16.2	6.2-23.8	16.4
2016-17	10.2-24.4	18.5	10.38-23.2	18.8	7.7-24.6	18.9	12.2-24.8	19.0
2015-16	4.8-24.44		6.55-23.23		4.52-24.6		4.85-24.56	
2014-15	7.32-22.4		8.97-21.9		7.5-23.0		7.27-22.4	
2013-14	14.5-15	15.2-22.4	14-14.9	15.8-23.2	14.7-24.2	15.7-23.1	14-14.1	14.4-23.1
2012-13	6.06-25.1		7.27-24.7		6.7-25.9		6.65-25.2	
2011-12	7.27-21.9	6.9	8.5-20.9	8.07	7.76-23.9	7.1	8.18-22.1	6.85
2010-11	3.65-25.35	17.08	5.39-23.63	18.67	3.57-26.93	16.5	3.82-25.73	16.45
2009-10	7.69-21.36	17.74	8.34-19.41	16.5	8.48-21.46	18.24	8.11-20.46	17.34
2005-6	12.2-24.2	13.2-14.3	12.2-23.2	13.8-16.7	13.0-24.9	13.8-15.6	12.6-24.4	13.2-15.9
Cond (us/cm)								
2023-24	68-94		98-122		130-176		61-83	
2022-23	68-96	95	96-110	105	127-149	151	59-85	83
2021-22	67-83	70	80-104	82	125-150	138	64-79	70

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
Cond (us/cm)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2020-21	81-89	50	94-126	47	126-150	77	70-81	56
2019-20	60-89		94-109		124-1330		59-620	
2018-19	73-650	81	93-103	67	130-145	1230	58-86	78
2017-18	67-97	91	94-108	93	136-167	158	61-84	86
2016-17	70-97	85	102-117	103	141-190	139	88-660	76
2015-16	62-920		87-106		121-156		57-87	
2014-15	70-97		93-107		119-177		63-86	
2013-14	59-97	46-100	84-108	27-95	115-153	57-147	53-81	51-72
2012-13	65-97		92-112		120-157		56-103	
2011-12	72-100	74	94-110	57	130-168	117	64-91	70
2010-11	61-89	66	86-108	36	124-161	181	58-78	77
2009-10	56-97	65	82-109	86	112-159	130	48-79	55
2005-6	40-105	56-65	50-123	22-82	61-150	73-86	40-90	35-54
Turb (NTU)								
2023-24	10.7-36.3		4.3-30.2		4-86.2		8.5-16	
2022-23	30.2-34.3	32.8	17.3-29.5	82.7	18-130	37.2	13.5-28.6	41.1
2021-22	29.5-384	145	51.9-189	357	24.4-132	39	16.4-131	73.2
2020-21	60.5-127	185	12.7-44.7	94.8	14.2-33	172	8.2-55.6	69.4
2019-20	16.3-236		3.3-17.4		12.9-37.0		13.1-37.0	
2018-19	9.9-298	21.1	7.0-18.1	59.9	11.5-34.7	66.1	13.0-39.2	37.6
2017-18	15.7-190	23	14.9-233	57.3	19-44.9	14.7	16.8-41.5	25.2
2016-17	13.7-23	20.1	6.8-42	13.3	19.8-35	19.1	17-18.4	15.9
2015-16	51-25		16.8-25		14-35.2		10.7-46	
2014-15	5.8-21.4		7.8-20.1		7.7-36.7		8.9-31.8	
2013-14	6-12.5	37.8-336	7-12.2	63.2-347	3.7-17	37.2-417	4.9-22.7	15.5-111
2012-13	0-35.2		10.6-88.5		7.4-60.2		13.2-119	
2011-12	11.9-21.0	30	8.1-16.0	53.3	11.8-28.6	53.1	10.2-28.3	31.9
2010-11	6.4-15.7	189	5.3-6.8	202	8.2-12.8	11.8	6.4-21.1	65
2009-10	9.2-17.5	8.3	4.4-9.6	5.6	8.1-19.5	6.3	7.8-24.4	11.7

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
Turb (NTU)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2005-6	2.0-30.0	40.1-168.0	2.0-24.0	11.5-129.0	3.0-25.0	28.3-125	2.0-55.0	36.2-612
BOD5 (mg/l)								
2023-24	<0.61-0.85		<0.61-0.85		<0.61-1.31		<0.61-<1.29	
2022-23	<1.04-<1.13	0.96	<1.04-<1.13	1.60	<1.04-<1.13	1.19	<1.04-<1.13	0.87
2021-22	<0.55-4.37	<1.63	0.40-0.72	3.67	0.65-1.11	<1.63	<0.55-1.13	<1.58
2020-21	<0.55-<1.16	1.16	<0.55-<1.16	0.95	<0.55-2.65	3.65	<0.55-<1.16	1.18
2019-20	0.47-1.13		0.47-1.13		0.62-2.95		0.09-1.13	
2018-19	<0.05-6.33	0.87	<0.05-6.33	0.27	0.31-6.33	0.13	<0.05-6.33	0.82
2017-18	0.12-2.41	1.07	0.08-0.58	2.19	0.17-1.81	1.27	0.08-0.41	1.33
2016-17	<0.1-0.57	0.95	<0.61-0.58	1.57	0.06-0.29	0.91	0.17-<0.61	0.76
2015-16	0.03-<1.0		0.01-2.04		0.01-<1.0		0.01-1.0	
2014-15	<2		<2		<2		<2	
2013-14	<2	<2-3.86	<2	<2	<2	<2-3.1	<2	<2-2.06
2012-13	<2		<2		<2		4.8	
2011-12	<2	<2	<2	<2	<2	<2	<2	<2
2010-11	<2	4.33	<2	7.55	<2	<2	<2	2.0
2009-10	<2	<2	<2	<2	<2	2.09	<2	<2
2005-6	<5	<5	<5	<5	<5	<5	<5	<5
COD (mg/l)								
2023-24	<10		<10		<10		<10	
2022-23	10.6-30.7	<10.0	10.6-16.8	<10	10.6-19.1	12.2	<10-17.3	<10
2021-22	<10.0-22.7	<10.0	<10.0	45.5	<10.0	<10.0	<10.0-20.4	13.6
2020-21	<10-36.7	<10	<10-11.7	14	11.7-23.1	29.9	<10-23.1	<10
2019-20	<10		<10		<10		<10	
2018-19	<10	13.9	<10	16.2	<10	<10	<10-20.1	<10
2017-18	<10-10.4	<10	<10	28.5	<10-10.4	<10	<10-28.7	<10
2016-17	<10-11.7	12.7	<10	<10	<10-16.1	12.7	<10	<10
2015-16	<10-10.6		<10-10.2		<10		<10-16.5	
2014-15	<10		<10		<10-15.6		<10-15.5	
2013-14	<10	25.8-36	<10	24.8-30.3	<10	28-31.5	<10-11	17-20.4

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
COD (mg/l)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2012-13	<10-18.8		<10-48.4		<10-21.3		<10-39.4	
2011-12	<10-24.4	<10	<10-14.5	<10	<10-19.0	10.8	<10-17.6	<10
2010-11	<10-15.4	23.9	<10-12.8	67.35	<10-24.4	<10	<10-13.2	<10
2009-10	<10-30	<10	<10-23	15	<10-26	28	<10-26	28
2005-6	<10-13	27	<10	25	<10-11	32	<10-11	38
TKN (mg/l as N)								
2023-24	<0.5-0.612		<0.5		<0.5-0.543		<0.5	
2022-23	<0.5	0614	<0.5	0.620	<0.5	0.645	<0.5	0.650
2021-22	<0.5	<0.5	<0.5	1.14	<0.5	0.573	<0.5	0.5
2020-21	<0.5-0.615	0.769	<0.5	0.589	<0.5-0.634	0.751	<0.5	<0.5
2019-20	<0.5-0.624		<0.5-0.846		<0.5-0.685		<0.5-0.793	
2018-19	<0.5-0.593	0.550	<0.5-0.519	0.722	<0.5-0.620	0.973	<0.5-0.618	0.573
2017-18	<0.5-0.569	<0.5	<0.5-0.537	0.539	<0.5-0.646	0.562	<0.5-0.592	<0.5
2016-17	<0.5-0.621	0.602	<0.5	<0.5	<0.5	0.626	<0.5-0.526	0.602
2015-16	<0.5-0.556		<0.5-0.579		<0.5-0.705		<0.5-0.568	
2014-15	<0.5-1.01		<0.5-1.59		<0.5-1.47		<0.5-1.44	
2013-14	<0.5-0.518	<0.5-1.5	<0.5	1.2	<0.5-0.6	0.7-1.2	<0.5	<0.5-0.6
2012-13	<0.5-2.2		<0.5-0.8		<0.5-0.9		<0.5-0.6	
2011-12	<0.5-0.6	<0.5	<0.5-0.5	<0.5	<0.5-0.8	0.5	<0.5-0.8	<0.5
2010-11	<0.5-0.65	0.7	<0.5-0.5	1.4	<0.5-0.6	<0.5	<0.5-0.6	<0.5
2009-10	<0.5-0.5	<0.5	<0.5-1.2	<0.5	<0.5-1.0	<0.5	<0.5-0.6	<0.5
2005-6	<0.05-0.6	0.8	<0.5-0.5	0.9	0.6-0.7	1.8	<0.5-0.5	1.0
NH3-N (mg/l)								
2023-24	0.01-0.06		0.01-0.02		0.03-0.08		0.01-0.05	
2022-23	0.04-0.05	0.01	0.01-0.02	0.01	0.03-0.08	0.03	0.02-0.03	0.01
2021-22	0.05-0.07	0.08	0.02-0.04	0.09	0.04-0.08	0.07	0.03-0.07	0.08
2020-21	0.01-0.05	0.07	0.01-0.04	0.08	0.03-0.05	0.09	0.01-0.06	0.07
2019-20	0.04-0.07		0.02-0.03		0.01-0.05		0.04-0.07	
2018-19	0.04-0.06	0.04	0.02-0.03	0.04	0.05	0.03	0.01-0.06	0.05
2017-18	0.06-0.07	0.03	0.02	0.01	0.03-0.10	0.03	0.04-0.07	0.01

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
NH3-N (mg/l)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2016-17	0.01-0.03	0.08	0.01-0.02	0.05	0.01-0.06	0.10	0.05	0.09
2015-16	0.04-0.07		0.02-0.06		0.06-0.1		0.01-0.08	
2014-15	0.03-0.11		0.02-0.06		0.06-0.08		0.04-0.14	
2013-14	0.02-0.06	0.1-0.52	0.02-0.03	0.04-0.06	0.02-0.05	0.03-0.05	0.02-0.07	0.03-0.07
2012-13	0.03-1.23		0.02-0.07		0.03-0.15		0.02-0.11	
2011-12	0.01-0.08	0.04	0.02-0.06	0.05	0.02-0.11	0.04	0.01-0.08	0.05
2010-11	0.01-0.08	0.04	0.01-0.13	0.10	0.03-0.05	0.01	0.01-0.05	0.01
2009-10	0.01-0.10	0.01	0.02-0.05	0.01	0.02-0.11	0.01	0.01-0.05	0.01
2005-6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
NO2NO3 (mg/l as N)								
2023-24	0.053-0.195		0.493-0.689		0.073-0.408		<0.05-0.131	
2022-23	0.145-0.22	<0.05	0.532-0.613	0.301	0.256-0.390	<0.05	0.060-0.148	<0.05
2021-22	0.162-0.233	0.176	0.539-0.582	0.423	0.389-0.477	0.359	<0.05-0.166	0.100
2020-21	0.133-0.179	0.213	0.315-0.572	0.253	0.20-0.376	0.21	0.053-0.19	0.138
2019-20	0.158-0.275		0.558-0.666		0.311-0.438		0.075-0.228	
2018-19	0.188-0.533	0.160	0.39-0.609	0.320	0.220-0.329	0.376	0.080-0.120	0.073
2017-18	0.201-0.247	0.088	0.524-0.63	0.308	0.256-0.478	0.119	0.114-0.162	<0.05
2016-17	0.169-0.227	0.181	0.278-0.49	0.431	<0.05-0.206	0.211	0.065-0.144	0.108
2015-16	0.17-0.494		0.446-0.73		0.242-1.05		0.072-0.310	
2014-15	0.186-0.296		0.341-0.596		0.131-0.38		0.08-0.165	
2013-14	0.121-0.296	0.511-0.601	0.480-0.488	1.98-2.26	<0.05-0.291	0.219-1.1	<0.05-0.262	0.222-0.476
2012-13	0.202-1.52		0.337-2.37		0.166-0.739		0.223-2.20	
2011-12	0.132-0.282	0.233	0.319-0.553	0.259	0.069-0.385	0.416	<0.05-0.205	<0.05
2010-11	0.167-0.444	0.271	0.443-0.593	0.067	0.253-0.367	<0.05	0.082-0.295	<0.05
2009-10	<0.05-0.256	0.251	0.434-0.541	0.455	0.194-0.28	0.141	<0.05-0.163	<0.05
2005-6	0.07-0.109	0.276	0.403-0.42	0.488	0.342-0.35	0.443	<0.05-0.062	0.165
P Total (mg/l as P)								
2023-24	0.003-0.02		0.003-0.01		0.01-0.03		0.003—0.02	
2022-23	0.02-0.03	0.02	0.02-0.03	0.04	0.01-0.03	0.07	0.006-0.01	0.02
2021-22	0.01-0.02	0.04	0.01	0.04	0.03-0.17	0.04	0.01-0.02	0.04

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
P Total (mg/l as P)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2020-21	0.01-0.02	0.43	0.01	0.31	0.03-0.04	0.47	0.003-0.02	0.43
2019-20	0.01-0.02		0.01-0.03		0.01-0.03		0.01-0.04	
2018-19	0.01-0.04	0.02	0.01-0.04	0.05	0.01-0.06	0.07	0.01-0.04	0.03
2017-18	0.02-0.04	0.07	0.02	0.04	0.04-0.05	0.06	0.02-0.05	0.04
2016-17	0.01-0.03	0.03	0.01-0.03	0.03	0.03-0.09	0.08	0.02	0.03
2015-16	0.006-0.02		0.005-0.02		0.022-0.07		0.01-0.096	
2014-15	0.01-<0.05		<0.05		<0.05-0.06		0.01-0.02	
2013-14	0.01-0.03	0.15-0.22	0.03	0.09-0.29	0.05-0.06	0.1-0.5	0.03-0.04	0.04-0.16
2012-13	0.02-0.05		0.02-0.04		0.05-0.09		0.03-0.04	
2011-12	0.03-0.05	0.03	0.02-0.07	0.05	0.04-0.08	0.08	0.03-0.06	0.04
2010-11	0.02-0.04	0.13	0.01-0.03	0.30	0.01-0.04	0.03	0.03-0.05	0.03
2009-10	0.02-0.27	0.01	0.02-0.24	0.03	0.03-0.19	0.05	0.01-0.16	0.02
2005-6	<0.05	0.067	<0.05	0.105	<0.05-0.063	0.128	<0.05	0.149
P Ortho (mg/l as P)								
2023-24	0.003-0.02		0.003-0.02		0.003-0.01		0.003-0.02	
2022-23	0.003-0.02	0.01	0.01	0.02	1.01-0.02	0.04	0.006-0.03	0.03
2021-22	0.02-0.03	0.03	0.01-0.03	0.05	0.01-0.05	0.03	0.006-0.01	0.02
2020-21	0.003-0.02	0.03	0.001-0.003	0.05	0.02-0.03	0.09	0.006-0.01	0.02
2019-20	0.01-0.03		0.006-0.02		0.01-0.03		0.003-0.02	
2018-19	0.01-0.03	0.03	0.003-0.05	0.03	0.01-0.03	0.05	0.001-0.03	0.01
2017-18	0.006-0.02	0.05	0.003-0.02	0.02	0.03-0.05	0.04	0.006-0.03	0.02
2016-17	0.01-0.02	0.02	0.003-0.01	0.02	0.02-0.07	0.05	0.003-0.01	0.01
2015-16	0.009-0.07		0.006-0.07		0.02-0.07		0.009-0.08	
2014-15	<0.01-0.08		<0.05-0.06		0.02-0.07		<0.01-0.07	
2013-14	0.02-0.04	0.1-0.14	0.05-0.07	0.04-0.17	0.04-0.11	0.11-0.27	0.03-0.05	0.1
2012-13	0.02-0.19		0.02-0.08		0.04-0.08		0.03-0.07	
2011-12	0.02-0.03	0.02	0.02-0.04	0.01	0.02-0.03	0.02	0.01-0.05	0.02
2010-11	0.03-0.05	0.04	0.02-0.04	0.04	0.02-0.05	0.05	0.02-0.05	0.03
2009-10	0.01-0.05	0.05	0.02-0.05	0.05	0.02-0.03	0.04	0.01-0.05	0.04

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
P Ortho (mg/l as P)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2005-6	<0.01	<0.01	<0.01-0.010	<0.01	0.013-0.014	0.0256	<0.01-0.011	<0.01
TSS (mg/l)								
2023-24	6-12		4-13		6-14		4-10	
2022-23	7-18	5	1-14	21	1-10	5	2-9	6
2021-22	1-11	51	3-8	202	1-9	16	2-11	45
2020-21	1-7	28	1-5	40	1-4	130	1-7	34
2019-20	1-13		2-9		1-9		1.5-9	
2018-19	2-6	1	1-44	25	1-8	29	3-14	4
2017-18	1-11	2	1-12	2.5	3-7	4	1-15	5
2016-17	2-5	4	1-4	2	2-13	11	4.5-6	3
2015-16	2-10		3.5-7		5-9		4-24	
2014-15	2-6		<4-18		<4-13		<4-4	
2013-14	4-6	30-153.3	5-8	63-217	4.0-12.0	39-316	7-16	10-142
2012-13	<4-11.0		<4-16.0		<4-10		<4-7.0	
2011-12	<4-5.0	10	<4-23	21	<4-5.0	29	<5-8.0	11.0
2010-11	<4-13.0	132	1.0-5.0	315	<4-8.0	4.0	<4-13.0	<4
2009-10	3.0-8.0	3.0	1.0-8.0	16.0	3.0-13.0	15.0	3.0-11.0	7.0
2005-6	<5-6	53	<5-6	88	7-10	49	9-12	120
Cd Total (ug/l)								
2023-24	<0.7		<0.7		<0.7		<0.7	
2022-23	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2021-22	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2020-21	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2019-20	<0.7		<0.7		<0.7		<0.7	
2018-19	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2017-18	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2016-17	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2015-16	<0.7		<0.7		<0.7		<0.7	
2014-15	<0.7		<0.7		<0.7		<0.7	
2013-14*	BRL (<0.7-<5)	BRL	BRL	BRL	BRL	BRL	BRL	BRL

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
Cd Total (ug/l)								
2012-13	<0.7		<0.7		<0.7		<0.7	
2011-12	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2010-11	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2009-10	<5	<5	<5	<5	<5	<5	<5	<5
2005-6	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Cu Total (ug/l)								
2023-24	<5		<5		<5		<5	
2022-23	<5	<5	<5	<5	<5	<5	<5-5.45	<5
2021-22	<5	<5	<5	5.26	<5	<5	<5	<5
2020-21	<5	<5	<5	<5	<5	5.9	<5	<5
2019-20	<5		<5		<5		<5	
2018-19	<5	<5	<5	<5	<5	<5	<5	<5
2017-18	<5	<5	<5	<5	<5	<5	<5	<5
2016-17	<5	<5	<5	<5	<5	<5	<5	<5
2015-16	<5		<5		<5		<5	
2014-15	<5		<5		<5		<5	
2013-14*	BRL(<5-<25)	BRL	BRL	BRL-7.7	BRL	BRL-13.8	BRL	BRL
2012-13	<5		<5		<5		<5	
2011-12	<5-9.26	<5	<5	<5	<5-5.28	<5	<5-10.6	<5
2010-11	<5	<5	<5	11.2	<5	<5	<5	<5
2009-10	<25	<25	<25	<25	<25	<25	<25	<25
2005-6	<5	<5	<5	<5	<5	5.17	<5	<5
Pb Total (ug/l)								
2023-24	<1		<1		<1		<1	
2022-23	<1.0-1.32	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0-1.40	<1.0
2021-22	<1	<1	<1	<1	<1	<1	<1	<1
2020-21	<1	<1	<1	2.34	<1	8.56	<1	<1
2019-20	<1		<1		<1		<1	
2018-19	<1	<1	<1	1.30	<1	2.71	<1	<1
2017-18	<1	<1	<1	<1	<1	<1	<1	<1

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2016-17	<1	<1	<1	<1	<1	1.01	<1	<1
2015-16	<1-10.8		<1		<1-1.85		<1-1.42	
2014-15	<1		<1		<1		<1	
2013-14*	BRL (<1-<10)	BRL-5.46	BRL	3.44-10.7	BRL	2-22.9	BRL	BRL-3.68
2012-13	<1		<1		<1		<1	
2011-12	<1	<1	<1	1.29	<1	2.2	<1	<1
2010-11	<1	4.04	<1	15.95	<1	<1	<1	<1
2009-10	<10	<10	<10	<10	<10	<10	<10	<10
2005-6	<1	1.80	<1	2.73	<1-1.04	3.91	<1	3.74
Zn Total (ug/l)								
2023-24	<10.0-15.4		<10.0		<10.0-16.4		<10.0-28.6	
2022-23	<10.0-12.3	<10.0	<10.0-27.6	27.5	<10.0-15.8	16.1	<10.0	30.0
2021-22	<10	24.2	<10	<10	<10	<10	<10	<10
2020-21	<10	<10	<10	14.6	<10	26.7	<10	15.3
2019-20	<10		<10		<10-25.6		<10	
2018-19	<10	<10	<10	<10	<10	1.35	<10-14.9	<10
2017-18	<10	<10	<10	<10	<10	<10	<10	<10
2016-17	<10	<10	<10	<10	<10	<10	<10	<10
2015-16	<10		<10-10.5		<10-15.1		<10	
2014-15	<10		<10		<10		<10	
2013-14*	BRL (<10-<50)	BRL-22.3	BRL	21.7-37.4	BRL	10.8-63.7	BRL	BRL-13.3
2012-13	<10		<10-11.9		<10-42.8		<10	
2011-12	<10	<10	<10	<10	<10-31.2	13.5	<10	<10
2010-11	<10	<10	<10-10.6	25.76	<10	11.2	<10	<10
2009-10	<50	<50	<50	<50	<50	<50	<50	<50
2005-6	<10	<10	<10	16.5	<10	29.2	<10	12.0
Cd Dissolved (ug/l)								
2023-24	<0.7		<0.7		<0.7		<0.7	
2022-23	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2021-22	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2020-21	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2019-20	<0.7		<0.7		<0.7		<0.7	
2018-19	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2017-18	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2016-17	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2015-16	<0.7		<0.7		<0.7		<0.7	
2014-15	<0.7		<0.7		<0.7		<0.7	
2013-14*	BRL (<0.7-<5)	BRL	BRL	BRL	BRL	BRL	BRL	BRL
2012-13	<0.7		<0.7		<0.7		<0.7	
2011-12	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
2010-11								
2009-10	<5	<5	<5	<5	<5	<5	<5	<5
2005-6	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Cu Dissolved (ug/l)								
2023-24	<5		<5		<5		<5-98.2	
2022-23	<5	<5	<5	<5	<5	<5	<5	<5
2021-22	<5	<5	<5	<5	<5	<5	<5	<5
2020-21	<5	<5	<5	<5	<5	<5	<5	<5
2019-20	<5		<5		<5		<5	
2018-19	<5	<5	<5	<5	<5	<5	<5	<5
2017-18	<5	<5	<5	<5	<5	<5	<5	<5
2016-17	<5	<5	<5	<5	<5	<5	<5	<5
2015-16	<5		<5		<5		<5	
2014-15	<5		<5		<5		<5	
2013-14*	BRL (<5-<25)	BRL	BRL	BRL	BRL	<2-2.49c	BRL	BRL
2012-13	<5		<5		<5		<5	
2011-12	<5	<5	<5	<5	<5	<5	<5	<5
2010-11								
2009-10	<25	<25	<25	<25	<25	<25	<25	<25

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
Cu Dissolved (ug/l)								
2005-6	<5	<5	<5	<5	<5	<5	<5	<5
Pb Dissolved (ug/l)								
2023-24	<1		<1		<1		<1-2.17	
2022-23	<1	<1	<1	<1	<1	<1	<1	<1
2021-22	<1	<1	<1	<1	<1	<1	<1	<1
2020-21	<1	<1	<1	<1	<1	<1	<1	<1
2019-20	<1		<1		<1		<1	
2018-19	<1	<1	<1	<1	<1	<1	<1	<1
2017-18	<1	<1	<1	<1	<1	<1	<1	<1
2016-17	<1	<1	<1	<1	<1	<1	<1	<1
2015-16	<1		<1		<1		<1	
2014-15	<1		<1		<1		<1	
2013-14*	BRL (<1-<10)	BRL	BRL	BRL-1.16c	BRL	BRL-2.32c	BRL	BRL
2012-13	<1		<1		<1		<1	
2011-12	<1	<1	<1	<1	<1	<1	<1	<1
2010-11								
2009-10	<10	<10	<10	<10	<10	<10	<10	<10
2005-6	<1	<1	<1	<1	<1	<1	<1	<1
Zn Dissolved (ug/l)								
2023-24	<10		<10		<10		<10-144	
2022-23	<10	<10	<10	<10	<10	<10	<10	<10
2021-22	<10	<10	<10	<10	<10	<10	<10	<10
2020-21	<10	<10	<10	<10	<10	<10	<10	<10
2019-20	<10		<10		<10-25.6		<10	
2018-19	<10	<10	<10	<10	<10	<10	<10	<10
2017-18	<10	<10	<10	<10	<10	<10	<10	<10
2016-17	<10	<10	<10	<10	<10	<10	<10	<10
2015-16	<10		<10		<10		<10	
2014-15	<10		<10		<10		<10	

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
Zn Dissolved (ug/l)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2013-14*	BRL (<10-<20)	BRL	BRL	BRL	BRL	BRL	BRL	BRL
2012-13	<10		<10		<10		<10	
2011-12	<10	<10	<10	<10	<10-26.7	<10	<10	<10
2010-11								
2009-10	<50	<50	<50	<50	<50	<50	<50	<50
2005-6	<10	<10	<10	<10	<10	13.2	<10	<10
Hardness (mg/l)								
2023-24	14-27.6		23.6-42		30.8-56.0		13.2-24.8	
2022-23	20.8-32.8	24.8	19.2-25.4	22	26-32.38	36	17.2-26	28
2021-22	22.4-31.2	24.4	12.8-24.8	19.2	22.8-28.8	34.4	23.6-24.8	28.8
2020-21	23.6-33.2	20.8	20-23.2	19.6	40.8-74.4	28.4	26.4-40.8	22
2019-20	17.2-42.4		39.2-50.8		64.4-80.8		23.4-40.8	
2018-19	24.4-39.2	40	40.4-44.8	42.4	50-63.6	64	18-36.0	35.6
2017-18	34.4-38.8	36.8	30.0-41.2	40.0	58.4-63.2	60.8	4.48-36.0	32.4
2016-17	3.1-29.4	28.8	28.5-44	35.2	27.6-67.3	57.6	12.2-37.5	27.6
2015-16	20.8-29.2		27.4-35.6		44.5-60.3		18-29.6	
2014-15	20.4-32.8		28.8-36.4		40.8-66		17.2-29.6	
2013-14	18.8-32.8	13.2-29.2	26-35.2	7.6-18.8	13.2-57.2	19.6-50.8	15.2-25.8	12.8-20.4
2012-13	19-6-31		28.8-33.6		43.6-57.2		19.2-26.4	
2011-12	19.6-31	20.8	28.8-33.6	16.4	43.6-57.2	40.8	19.2-26.4	18
2010-11	21.2-28.8	20.8	28.0-33.2	9.8	43.2-58.0	57.6	16.4-28.8	24.8
2009-10	18.8-32.5	22.0	28.4-36.9	29.2	42.4-58.2	49.2	14.0-24.5	18.0
2005-6	14.8-15.7	10.5	17.6-19.4	14.8	26.2-35	17.4	15.1-15.3	8.31
Alkalinity (mg/l)								
2023-24	48.1-52.0		48.6-80.1		46.4-83.8		33.1-51.3	
2022-23	23.0-50.5	23.8	63.4-35.6	25.8	35.2-55.9	76.6	31.6-41.9	38.4
2021-22	41.7-61.3	66.2	53.1-73.5	123	35.4-67.6	195	41.7-52.6	124
2020-21	48.7-67.5	113	45.3-50.9	52.6	82.8-108	83	39.4-651	65.2
2019-20	37.0-79.3		48.1-56.3		27.1-75.0		40.3-50.7	

	1-Shoal Creek		2-Dixie Creek		3-Blue John Creek		7-Long Cane Creek	
Alkalinity (mg/l)	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>	<i>dry</i>	<i>wet</i>
2018-19	32.6-54.6	148	42.6-44.9	47	51.8-121	42	33.9-45.4	33.2
2017-18	54.3-65.0	52.8	48.5-63.4	58.7	55.6-63.4	76.1	50.2-76.5	61.4
2016-17	46.1-144	20.5	45.1-226	39.9	124-532	43.3	49.6-84.1	34.3
2015-16	52.2-52.3		44.3-132		88.9-106		54.8-78.8	

	1-Shoal Ck	2-Dixie Ck	3-Blue John Ck	7- Long Cane Ck
<i>warm weather (May-Oct.):</i>	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
Fecal coliform range of 4 samples:				
2023-24				
2022-23 (one sample)	180	380	370	230
2021-22	330-2720	220-4100	200-6000	220-2000
2020-21	170-970	60-930	160-1550	300-850
2019-20	30-160	20-150	0-90	10-230
2018-19	50-130	50-310	110-500	130-2780
2017-18	60-550	360-3630	180-780	70-730
2016-17	100-200	170-590	100-140	1440-3440
2015-16	280-865	192-1000	100-362	60-168
2014-15	120-280	130-650	68-952	140-464
2013-14	>600-440000	290-400	92-150	68-124
2012-13	120-228	210-310	60-100	76-340
2011-12	60-240	110-270	20-140	40-120
2010-11	220-350	230-490	40-900	16-180
2005-6	130-700	350-4200	30-27000	100-8000
Fecal coliform geometric mean:				
2023-24				
2022-23 (one sample)	180	180	180	180
2021-22	582	773	632	460
2020-21	404	225	545	551
2019-20	69	37	12	36
2018-19	77	151	265	404
2017-18	139	829	284	296
2016-17	155	289	119	2279
2015-16	413	380	185	82
2014-15	187	264	167	239
2013-14	20523	330	128	85
2012-13	156	269	74	212
2011-12	125	186	48	60
2010-11	271	348	150	92
2005-6	299	1103	1720	568
Cool weather (Nov-Apr.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
Fecal coliform range of 4 samples:				
2023-24				
2022-23	80-110	80-110	80-150	60-130

Table 3. (Continued) Monitoring Results for Fecal Coliform & Escherichia Coli				
Cool weather (Nov-Apr.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
Fecal coliform range of 4 samples:				
2021-22	60-840	60-1750	200-3000	30-2200
2020-21	10-910	10-2150	30-2680	20-1680
2019-20	210-460	130-630	230-370	100-220
2018-19	40-120	10-180	80-290	20-150
2017-18	20-590	30-870	10-980	70-560
2016-17	80-130	130-430	190-400	180-380
2015-16	210-996	350-1300	230-1700	240-696
2014-15	40-124	40-112	90-188	48-160
2013-14	112-304	124-9100	14-34	53-144
2012-13	44-212	160-650	80-608	8-124
2011-12	140-210	130-220	70-210	50-150
2010-11	50-155	50-1030	60-270	70-190
2005-6	120-1900	160-530	120-1900	70-340
Fecal coliform geometric mean:				
2023-24				
2022-23	97	89	102	93
2021-22	223	246	416	149
2020-21	102	140	195	111
2019-20	270	332	275	146
2018-19	72	50	120	68
2017-18	244	89	94	150
2016-17	100	220	312	275
2015-16	389	659	632	478
2014-15	69	62	144	89
2013-14	177	574	22	92
2012-13	75	321	190	26
2011-12	148	174	125	98
2010-11	100	237	94	123
2005-6	340	226	412	160
warm weather (May-Oct.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
E-coli range of 4 samples:				
2023-24	260-380	70-100	50-100	20-90
2022-23	50-150	140-320	30-350	180-380
2021-22	100-290	60-660	70-910	90-910
2020-21	20-180	20-140	10-480	10-40
2019-20	130-320	150-230	40-80	70-330
2018-19	1-80	40-180	20-150	70-830
2017-18	60-380	190-2380	150-360	220-670
2016-17	50-270	20-360	30-130	900-1390
2015-16	204-890	164-660	63-280	56-192
2014-15	210-450	150-420	108-340	165-800
2013-14	600-440000	290-400	92-196	68-124
2012-13	12-220	50-260	12-140	24-352
2011-12	30-170	150-210	44-88	20-80
2010-11	120-270	100-250	40-700	33-240
2005-6	90-800	170-3000	75-16000	110-9000
E-Coli geometric mean:				
2023-24	296	84	70	50
2022-23	96	239	129	271
2021-22	144	259	179	154
2020-21	48	36	49	19
2019-20	186	182	60	157
2018-19	6	83	65	215

Table 3. (Continued) Monitoring Results for Fecal Coliform & Escherichia Coli				
Cool weather (Nov-Apr.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
E-Coli geometric mean:				
2017-18	130	449	208	371
2016-17	88	113	61	1135
2015-16	383	278	132	101
2014-15	293	305	173	363
2013-14	14344	316	63	142
2012-13	56	120	45	66
2011-12	75	168	64	43
2010-11	186	162	112	108
2005-6	265	645	1077	482
Cool weather (Nov-Apr.):				
E.Coli range of 4 samples:	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
2023-24	10-80	10-80	10-40	10-60
2022-23	100-150	10-80	10-90	30-110
2021-22	20-350	30-2020	70-2000	30-2000
2020-21	0-280	0-470	10-620	10-300
2019-20	60-320	60-90	40-120	40-50
2018-19	0-40	10-50	0-30	0-20
2017-18	0->5000	0-620	10-780	30-300
2016-17	100-200	140-220	150-420	150-310
2015-16	20-2040	60-1920	60-4140	40-4160
2014-15	88-132	50-188	220-330	84-208
2013-14	102-260	112-9200	14-44	69-152
2012-13	32-228	210-810	84-640	16-256
2011-12	50-170	60-80	10-50	30-140
2010-11	40-210	90-1120	160-3490	70-190
2005-6	130-2400	70-500	170-800	40-300
Cool weather (Nov-Apr.):	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)	(cfu/100 ml)
E.Coli geometric mean:				
2023-24	41	28	20	31
2022-23	113	39	52	58
2021-22	79	129	202	152
2020-21	22	10	42	31
2019-20	105	66	56	47
2018-19	3	20	10	4
2017-18	64	27	54	105
2016-17	141	187	274	243
2015-16	320	333	556	458
2014-15	109	118	263	136
2013-14	173	645	2	102
2012-13	66	385	186	45
2011-12	94	74	18	62
2010-11	103	323	622	123
2005-6	465	192	321	122

Appendix 2. Sewer System Improvements Master Work Plan

SEWER SYSTEM MASTER WORKS PLAN

The Sewer System Master Works Schedule was first initiated in 2010 to comply with EPD's Consent Order Number EPD-WQ-5236. The consent order was an enforcement action by EPD for the City's numerous Sanitary Sewer Overflows (SSOs) resulting from inflow & infiltration (I/I) and grease and other debris getting into the sewer system creating clogged sewer lines which resulted in SSOs. In the schedule, there were action items with dead line dates with penalties if deadlines were not met. The City was required to submit a progress report every 6 months to keep the City's EPD Compliance Officer informed on the City's progress on correcting problems and making improvements in the sewer system.

After several years of reporting to EPD of the City's progress on implementing the items in the schedule, EPD evaluated the City's progress and determined that the conditions set forth in the consent order were complete and have been satisfied, and on April 30, 2024 informed the City that EPD now considers Consent Order No. EPD-WQ-5236 closed. The letter informing the City of this is included on the following page.

Even though the consent order is now closed, the City continues to plan and schedule necessary works and improvements to the sewer system and treatment plant. The updated schedule is included in the following pages.

Finally, there does continue to be I/I related SSOs during heavy rains, especially in the Creekside Subdivision. EPD has issued the City a Notice of Violation (NOV) for those overflows. The NOV dated May 3, 2024 is included following the updated sewer system improvements master works schedule. Prior to receiving the NOV, the City already had plans to rectify the Creekside Subdivision overflows and the project was out for bid. Construction has now begun on this project.

The NOV is included in pages below, followed by the City's response, addressing the items in the NOV.



ENVIRONMENTAL PROTECTION DIVISION

Jeffery W. Cown, Director

Watershed Protection Branch

2 Martin Luther King, Jr. Drive
Suite 1470A, East Tower
Atlanta, Georgia 30334
404-463-1511

April 30, 2024

Jason Clifton, Water & Sewer Operations Manager
City of LaGrange
200 Ridley Ave.
LaGrange, Georgia 30240

RE: Consent Order No. EPD-WQ-5236
City of LaGrange - Long Cane Creek WPCP
NPDES Permit No. GA0036951

Dear Mr. Clifton:

A review of the Environmental Protection Division's (EPD) records indicates that the City of LaGrange (City) has completed and satisfied all conditions outlined in Consent Order No. EPD-WQ-5236, executed December 3, 2010; therefore, EPD considers the referenced Consent Order closed. EPD appreciates the City's cooperation and commitment in complying with the requirements of the Georgia Water Quality Control Act, the Georgia Rules for Water Quality Control, the NPDES permit, and the referenced Consent Order.

If you have any questions or comments concerning this correspondence, please contact Sam Wright of my staff at samuel.wright@dnr.ga.gov. Your cooperation in this matter is appreciated.

Sincerely,

A handwritten signature in blue ink that reads "Johanna Smith".

Johanna Smith, P.E.
Program Manager
Watershed Compliance Program

cc: Jim Russell, Water Quality Programs Manager (jrussell@lagrangega.org)
Mike Costley (mccostley@lagrangega.org)

JDS/sw

CITY OF LAGRANGE – Sewer System Improvements Comprehensive Master Work Plan 2023-24 (as of 6/30/24)						
Project Description	Project Purpose	Project Start Date	Project End Date	Project Est. Cost	Responsible Agency	Funding Source
SSES & Rehab						
SSSES/Sewer Rehab- Mh; line	I/I source ID & correction w focus on priority sub basins	7/1/21	TBD	\$300,000	City of LaGrange	2021 Water & Sewer Bond
Sewer Rehab	I/I Miscellaneous issues	7/1/23	TBD	\$250,000		
Operational						
Root Control	Clear lines of root obstructions; maintain flow; prevent SSO's.	7/1/2023	6/30/2024	\$50,000	Dukes	FY 23-24
Major Hydraulic Relief Projects						
Mooty Bridge/Dixie Creek upgrade (Force Main and Lift Station)	Wet weather capacity issue	1/1/2024	Expected Completion 12/31/24	\$2,815,000	Ellis & Associates	2021 Water & Sewer Bond
Treatment Plant Improvements						
Long Cane WPC Plant Improvements	Reliability; Sludge/Solids removal	2021	Expected Completion Late Summer/Fall 2024	\$5.6 million	Krebs Engineering	2021 Water & Sewer Bond
<ul style="list-style-type: none"> Upgrade or replace existing plant SCADA system and PLC's (New system is currently being assembled; Was expected to be in operation by March 2022; Parts being delayed; now expected Fall 2024) Rehab existing digester and thickeners; put back in service. Modify O2 Plant to use all three clarifiers rather than adding a third secondary clarifier to the Carrousel Plant. Adding a septic hauler receiving station. (Summer 2024) Future Proposed Projects include upgrades to Press Building, Rehab of O2 Building Clarifiers & TKN Improvements. 						
Other Planned Sewer Improvements						
Whitesville Road Lift Station & FM work	To abandon an existing dilapidated wastewater treatment plant	11/1/2023	Lift Station is in operation	\$1,435,000	Ellis & Associates	2021 Water & Sewer Bond
Hills & Dales Lift Station	To provide sanitary sewer service to the area.	2023	Lift Station is in operation	\$1,082,500	Ellis & Associates	2021 Water & Sewer Bond

(as of 6/30/24)

CITY OF LAGRANGE – Sewer System Improvements Comprehensive Master Work Plan 2023-24

<i>Project Description</i>	<i>Project Purpose</i>	<i>Project Start Date</i>	<i>Project End Date</i>	<i>Project Est. Cost</i>	<i>Responsible Agency</i>	<i>Funding Source</i>	<i>Status/Remarks</i>
Hamilton Road GDOT	Water and Sewer utility relocation for road widening	2023	2026	\$7,200,142	Barge Design	2021 Water & Sewer Bond	Contract awarded to McElroy. Sewer line install has begun



ENVIRONMENTAL PROTECTION DIVISION

Jeffrey W. Cown, Director

Watershed Protection Branch
2 Martin Luther King, Jr. Drive
Suite 1470A, East Tower
Atlanta, Georgia 30334
404-463-1511

May 3, 2024

Jason Clifton, Water & Sewer Operations Manager
City of LaGrange
200 Ridley Ave.
LaGrange, Georgia 30240

RE: **Notice of Violation**
City of LaGrange
Long Cane Creek Water Pollution Control Plant
NPDES Permit No: GA0036951

Dear Mr. Clifton:

This letter serves as a Notice of Violation (NOV) of Chapter 391-3-6 of the Georgia Rules and Regulations for Water Quality Control (Rules); Title 12, Chapter 5 of the Georgia Water Quality Control Act (Act); and National Pollutant Discharge Elimination System Permit No. GA0036951 (Permit), issued to the City of LaGrange (City).

A review of the Environmental Protection Division's (EPD) files indicates that from August 2021 through March 2024 the City reported twenty-two (22) spills of raw sewage to waters of the State, thirteen (13) of which were at 311 Creekside Dr. The City also reported one (1) dryland sanitary sewer overflow, as indicated in Attachment A, Table 1, and one (1) total residual chlorine (TRC) violation, as indicated in Table 2. EPD alleges that the spills of raw sewage and the effluent permit limit violation are violations of the Permit, the Act, and the Rules.

Within 30 days of receipt of this letter, please submit to EPD a corrective action plan (CAP) for the violations described in Attachment A, including all planned measures, both short-term and long-term, to ensure that they do not recur. Please ensure that the CAP fully addresses specific plans and associated implementation schedules for addressing spills at 311 Creekside Dr. The CAP must include, but may not be limited to, the following:

1. An investigation of the causes of the violations;
2. Steps that have already been taken to correct the violations;
3. Additional actions needed to completely resolve the violations and associated timelines for implementation, if applicable; and
4. Actions ensuring that the violations do not recur.

EPD will review this and any other information the City wishes to provide to determine if further enforcement action, including monetary penalty, is warranted.

Notice of Violation
City of LaGrange
Page 2 of 3

If you have any questions regarding the violations, please contact Sam Wright at samuel.wright@dnr.ga.gov. Your cooperation in this matter is greatly appreciated.

Sincerely,



Johanna Smith, P.E.
Program Manager
Municipal Compliance Program

JDS/sw

cc: Jim Russell, Water Quality Programs Manager (jrussell@lagrangega.org)
Mike Costley (mcostley@lagrangega.org)

Attachment A

Table 1

Overflows of Raw Sewage from August 2021 – March 2024

No.	Date	Address	Volume (gal)	Cause	Receiving Waters
1	8/17/2021	311 Creekside Dr.	15,525	Wet weather	Dixie Creek
2	8/17/2021	Williams St.	5000	Wet weather	Park Creek
3	8/24/2021	King Arthur Lift Station	8625	Equipment failure	Pepperell Creek
4	9/25/2021	831 Lakewood Dr.	4680	Pipe failure	Pineywoods Branch
5	10/5/2021	311 Creekside Dr.	41,625	Wet weather	Dixie Creek
6	2/4/2022	311 Creekside Dr.	510	Wet weather	Dixie Creek
7	3/1/2022	Blue John Creek at Colquitt St.	223,800	Pipe failure	Blue John Creek
8	3/19/2022	311 Creekside Dr.	300	Equipment failure	Dixie Creek
9	4/5/2022	311 Creekside Dr.	60,000	Wet weather	Dixie Creek
10	8/9/2022	311 Creekside Dr.	1900	Equipment failure	Dixie Creek
11	11/30/2022	311 Creekside Dr.	6000	Wet weather	Dixie Creek
12	3/26/2023	311 Creekside Dr.	120,000	Wet weather	Dixie Creek
13	3/27/2023	Yellow Jacket Pumping Station	442,500	Wet weather	West Point Lake
14	4/3/2023	124 Mallory Dr.	17,186	Pipe failure	Colquitt Creek
15	6/19/2023	311 Creekside Dr.	9905	Wet weather	Dixie Creek
16	6/21/2023	311 Creekside Dr.	36,420	Wet weather	Dixie Creek
17	8/14/2023	Vernon Rd.	26,850	Grease	Did Not Enter State Waters
18	11/17/2023	East Industrial Lift Station	9000	Pipe failure	Long Cane Creek
19	1/5/2024	Woodridge Cir.	2820	Vandalism	Pepperell Creek
20	1/9/2024	311 Creekside Dr.	8900	Wet weather	Dixie Creek
21	2/2/2024	Haralson St. Row	2765	Debris	Pineywoods Creek
22	2/11/2024	311 Creekside Dr.	136,800	Wet weather	Dixie Creek
23	3/9/2024	311 Creekside Dr.	185,800	Wet weather	Dixie Creek

Table 2

Permit Effluent Limit Violations from August 2021 – March 2024

No.	Date	Parameter	Permitted	Reported
1	October 31, 2021	Total Residual Chlorine, Daily Max (mg/L)	0.33	0.5



LAGRANGE
GEORGIA

June 3, 2024

Johanna Smith, PE
Watershed Protection Branch
2 Martin King Jr. Drive
Suite 1470A, East Tower
Atlanta, Georgia 30334

RE: Notice of Violation
City of LaGrange
Long Cane Creek WPCP
NPDES Permit No. GA0036951

Dear Mrs. Smith,

This letter serves as response to Notice of Violation (NOV) dated the 3rd of May 2024.

The City of LaGrange takes each issue seriously and has continued to work to make improvements to the collection system. These improvements include continued camera inspections, cleaning and repairing issues found within the collection system. Multiple infiltration issues have been addressed recently and we hope to identify more in the near future. Dukes Root Control performed an assessment of our Dixie Creek Basin at the end of 2021 and we are currently looking at those areas that indicated potential inflow/infiltration issues.

Actions to be taken are shown below:

Corrective Actions

1. 311 Creekside Drive (13 Spills – No. 1,5,6,8,9,10,11,12,15,16,20,22,23)
 - a. Spills were a result of wet weather conditions combined with inflow and infiltration issues within the collection system.
 - i. Once rainfall ended system returned to normal flow and spill subsided.
 - b. Ronald L. Ellis and Associates, Inc. has been tasked with 2.8 million of the bond issuance to rebuild Mooty Bridge Lift Station and upsize the force main from the station. This station has been identified as a major factor causing the Creekside Drive spills during wet weather conditions. A larger lift station and force main will allow for greater pumping capacity and a deeper wet well to handle high flows.

- b. Collection team jetted the line in order to clear the blockage and allow sewage to flow normally.
- 9. East Industrial Lift Station (1 Spill – No. 18)
 - a. Spill occurred due to bypass line separating at a joint.
 - b. Spill was stopped when line was isolated. Bypass line joint was repaired the same day.
- 10. Woodridge Circle (1 Spill - No. 19)
 - a. Spill occurred due to rocks and limbs being thrown in a manhole.
 - b. Debris was removed and normal flow resumed.
- 11. Haralson St. ROW (1 Spill – No. 21)
 - a. Debris in the main allowed sewage to escape from a crack on top of 8" clay sewer main.
 - b. Jet truck initially cleared the main in order the stop the spillage and subsequent repair to main was completed the following morning.
- 12. Effluent Violation
 - a. Total Residual Chlorine (.5 mg/L)
 - i. Initial analysis was .5 mg/L and an assumption was made that the mixing point for the sodium bisulfite may have been the issue.
 - ii. Second reading was well below the .33 permitted limit.
 - iii. Sodium bisulfite point of application was moved and we have not had any issue since then.

If you have any additional questions or would like any other information, please contact me by email or phone.

Sincerely,



Jason Clifton
City of LaGrange
Water and Sewer Operations Manager
Office: (706)883-2136
Cell: (706)302-4689

Appendix 3. Public Education Materials

Toilets are only meant for one activity. When the wrong thing is flushed, results can include costly backups on your own property, public sewer overflows, or problems at your local wastewater treatment plant.



Sewer overflows and backups can cause health hazards, damage to home interiors, and threaten the environment. A common cause of overflows is sewer pipes blocked by grease.

- Never pour grease down the sink, toilet, or other drains (even if it's been mixed with hot, soapy water).
- Wipe oily pans with a napkin or paper towel before washing in the sink or dishwasher.
- Put baskets or strainers in the sink to catch food scraps and other solids and empty them into the trash.
- Scrape grease and food scraps from all cookware and dishes into a can or the trash for disposal.
- Cooking oil and motor oil can be recycled at the Recycling Center off of South Davis Drive.

WIPES IN THE PIPES

 Only toilet paper down the toilet



**“Flushable” wipes
are not so Flushable**

Did you know that baby wipes may specify they are flushable, but they should not be put in our wastewater system? This also includes adult wipes, cleaning wipes, medical wipes, etc.

These items can cause costly backups on your own property, public sewer overflows, or problems at your local wastewater treatment plant.

In fact, the only paper product that should be “flushed” is toilet paper. It is the only paper designed to break down as it travels through the wastewater treatment process.



Combat Clogs

F. O. G. stands for Fats, Oils, and Grease, and is the main culprit in sewer system overflows and backups. Things that you can do to help prevent blockages:

- **NEVER** pour grease down the sink, toilet, or other drains (even if it's been mixed with hot, soapy water).
- **WIPE OILY PANS** with a napkin or paper towel before washing in the sink or dishwasher.
- **PUT BASKETS OR STRAINERS IN THE SINK** to catch food scraps and other solids and empty them into the trash.
- **SCRAPE GREASE AND FOOD SCRAPS** from all cookware and dishes into a can or the trash for disposal.
- Cooking oil and motor oil can be recycled at the **RECYCLING CENTER** off of South Davis Drive.



Wipe Out F.O.G.

For more information contact City of LaGrange Water Quality Programs at:
706-883-2154

ONLY RAIN DOWN THE DRAIN!



Stormwater runoff
from streets, lawns,
roofs and parking lots
flows untreated
to our streams, lakes
and river

So REMEMBER:
only rain should go
into storm drains:
not trash, dirt, oil or
other pollutants !!!

We Can Make a Difference!

10 Things YOU Can Do to Prevent Stormwater Runoff Pollution

- ◆ Never dump anything down storm drains or streams
- ◆ Fertilize sparingly and never before a rain
- ◆ Avoid or use least toxic pesticides
- ◆ Pick up trash and pet waste
- ◆ Compost yard waste
- ◆ Vegetate bare spots in your yard
- ◆ Take your car to the carwash or wash on grass instead of washing it in the driveway
- ◆ Have your septic tank inspected and pumped regularly
- ◆ Check your car for leaks and recycle oil
- ◆ Direct downspouts away from pavement

Remember:
*it ALL Drains to-
our lakes & rivers!*



For more information:

www.epa.gov/nps

or

City of LaGrange-Water Quality Programs

706-883-2150



F.O.G.

ALERT!

**Fats, Oils & Grease are clogging
the sewer pipes on your street!**



The City of LaGrange sewer division is in your neighborhood working hard to keep sewage flowing away from your home. Help us fight future sewer backups on your street!

Following a few simple steps, you can help prevent sewer backups and spills:

Siga estos pasos para ayudar a evitar cañerías obstruidas y derrames de las alcantarillas:

- 1. Pour cooled fats, oils and grease into a covered disposable container and throw it into your garbage. Never pour fats, oils or grease down drains or toilets.**
Coloque las grasas y los aceites fríos en un recipiente con tapa y desechable y arrójele a la basura.
- 2. Soak up remaining oils and grease with an absorbent material such as paper towels or kitty litter and throw into your garbage.**
Absorba las grasas y los aceites restantes con servilleta de papel y deshágase de ellas junto con los restos de comida y desechos del jardín.
- 3. Before you wash dishes, scrape food scraps, fats, oils and grease into your garbage.**
Antes de lavar los platos, arroje los restos de alimentos, grasas y aceites en su compostaje o en la basura.
- 4. Use sink strainers to catch any remaining food waste while washing dishes.**
Utilice coladores para fregaderos al lavar los platos para atrapar los restos de comida que podrían quedar.

LAGRANGE georgia
SMART MOVE®

Steve LaFavor

I/II Inspections - Grease Enforcement Coordinator
CITY OF LAGRANGE

115 Hill Street • P.O. Box 430 • LaGrange, GA 30241
Office: 706-883-2119 • Fax: 706-883-2116

For local information contact:
City of LaGrange
Water Quality Programs
P.O. Box 430
LaGrange, GA 30241
(706) 883-2150
www.lagrange-ga.org



BE PART OF THE SOLUTION TO STORMWATER POLLUTION

WHAT IS THE PROBLEM?

Each time it rains, water washes over our streets, driveways, and yards picking up pollutants along the way and flowing into our storm drains. This runoff may contain pollutants such as motor oil, yard clippings, pet waste, litter, lawn chemicals, anti-freeze, or other toxins, which can pollute our water supply as well as clog pipes and culverts which can lead to flooding. Known as "Non-Point Source Pollution", it is the largest threat to our waterways today. Sometimes pollutants are dumped directly into storm drains by neighbors who don't know any better. Contrary to popular belief, most storm drains are not connected to treatment systems. Whatever enters the drain is discharged directly, untreated into local waterways!

HOW CAN YOU HELP?

The storm drain inlets on your street are being marked with a colorful marker, like the one on the front of this door hanger, with a pollution prevention message. You can help by using the following tips to prevent pollution:

- * Properly dispose of hazardous waste and recycle used motor oil.
- * Use fertilizers, pesticides, and herbicides sparingly and follow the manufacturer's instructions.
- * Keep yard waste, trash, and dirt off the street and out of the gutters.
- * Clean up after your pets.
- * Wash your car at a car wash facility or park your car in the grass before you wash it.
- * Spread the word about protecting our waterways from polluted runoff.

Thank you for your cooperation!

Stormwater Runoff: Take It Personally!



*Be the Solution to
Stormwater Pollution.*

Too Cute To Pollute?



Appendix 4. Field and Laboratory Data