Introduction

As part of the General NPDES Stormwater Permit No GAG610000, the City of Valdosta is required to identify any impaired waters located within its permitted area, using the 2022 approved 305(b)/303(d) List of Waters which contain MS4 outfalls or are within one (1) linear mile downstream of MS4 outfalls. For those impaired waters, the permittee is required to propose a Monitoring and Implementation Plan addressing each pollutant of concern (POC). As part of the City's Watershed Protection Plan, a Sampling and Quality Assurance Plan (SQAP) has already been approved by the Georgia Environmental Protection Division (EPD) and is the base for this document.

As of May 2023, the most recent approved 305(b)/303(d) list is from 2022 and includes a section of the Withlacoochee River as not supporting its designated use for fishing within the City's jurisdiction and/or meet the "within one (1) linear mile downstream of MS4 outfalls" requirement. See *Table 1: Impaired Stream Segment*.

TABLE 1: IMPAIRED STREAM SEGMENT

Reach Name	Reach Location	Use	Criterion Violated	Potential Causes	Extent
Withlacoochee River	Bay Branch to Little River	Fishing	FC, TWR (fish)	NP[2]	10.1 miles

Objective

The primary objective of this plan is to meet the General NPDES Stormwater Permit requirement and to ensure the proper collection, handling, transportation, and analysis of water samples so that the Withlacoochee River stream segment can be delisted.

Sample Sites

The City of Valdosta has identified two (2) permanent sampling sites for the collection of water quality samples (See Attachment A). The sampling sites vary in depth, width, and sampling complexity. Sampling procedures will depend upon the ability of the sampling personnel to enter the stream safely. See *Table 2: Sample Sites*.

TABLE 2: SAMPLE SITES

Sampling Station	Stream	Location	In-stream	Sample Type
1	Withlacoochee River	N Valdosta Road	Upstream	FC
2	Withlacoochee River	Highway 133	Downstream	FC

[1] Trophic Weighted Residue (TWR) – Mercury in fish tissue

[2] Non Point (NP) – Non Point Source Pollution is caused by rainfall or snowmelt moving over and through the ground. As it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

Sampling Schedule

The Georgia Department of Natural Resources Watershed Assessment and Protection Plan Guidance requires four sampling events for each sampling station per year. Table 3 summarizes the planned sampling schedule.

TABLE 3: SAMPLING SCHEDULE

Sampling Station	Scheduled Sampling Months
Station #1	February, May, August, November
Station #2	February, May, August, November

Bacteriological results (e.g. fecal coliform) will be reported as the geometric mean of at least four samples captured within a 30 day period, but no closer than 24 hours apart, per year requiring a total of 16 sampling events. The scheduling of bacteriological samples will not be affected by rainfall.

As for trophic weighted residue (TWR), the 2012 Georgia Water Quality report prepared by Georgia EPD as an integrated document in the 305(b)/303(d) list which states "It is not known where the mercury in Georgia's fish originates. Mercury may be present due to mercury content in natural environments such as in South Georgia swamps, from municipal or industrial sources, or from fossil fuel uses. It has been shown that mercury contamination is related to global atmospheric transport. The EPA has evaluated the sources of mercury loading to several river basins in Georgia as part of TMDL development and has determined that 99% or greater of the total mercury loading to these waters occurs via atmospheric deposition. The EPA also expects that a combination of ongoing and future activities under the Clean Air Act will achieve reductions in the air deposition of mercury that will enable achievement of water quality standards."

Under NPDES permits issued to the two Valdosta wastewater treatments plants in 2002, both facilities were required to characterize their effluent for total recoverable mercury using EPA Method 1631 to determine if the effluent concentrations were below target values set by the TMDL. Both facilities demonstrated effluent concentrations below their respective target limits.

The City of Valdosta does not have the resources to monitor TWR in fish tissue from the Withlacoochee River at this time.

Dry Weather Sampling

A dry weather sample will be defined as one captured at least 72 hours after the most recent rain event totaling 0.1 inch of rain or more. All dry weather samples will be grab samples. If staff can safely wade the stream, the samples will be collected from the main flow stream by immersion of the sample bottles. Bacteriological samples will be collected in a sterile container,

separate from the other samples. Should the stream not be wadeable, samples will be collected using a bucket and rope from a position on a bridge or crossing directly over the main flow stream.

Wadeable Stream Sampling

If the stream is wadeable, staff will wade to a spot within the main flow of stream to collect samples and perform on site analyses. Staff will enter the water just downstream of the sampling point and walk upstream to prevent collection of samples at a point where the sediment has been disturbed. Staff will face upstream while capturing the sample. Samples collected in bottles that do not contain preservative will be immersed approximately three to five inches below the surface before opening, filled, and capped before the bottle is brought to the surface. This method will also be used to collect a sample of sufficient volume to fill all bottles that do contain preservatives. The preservative containing bottles will be filled as sub samples from the larger sample at the vehicle to prevent loss of preservative by overfilling in the stream. All analyses to be performed on site using portable testing equipment will be done either in the stream or at the vehicle as applicable. Calibration records for the portable testing equipment will be maintained. Sub samples for laboratory analysis will be placed into properly labeled and preserved sample bottles, placed in individual zipper locking freezer bags to prevent cross contamination, and placed on ice within fifteen minutes of collection. Chain of Custody forms will be used to document sampling times, proper preservation, and custody from sampling until delivery to the laboratory.

Bacteriological samples collected in a wadeable stream will be collected in sterilized glass bottles or purchased sterile whirl pack bags. Staff will enter the water just downstream of the sampling point and walk upstream to prevent collection of samples at a point where the sediment has been disturbed. Staff will face upstream while capturing the sample. The sample container will remain closed until submerged to prevent contamination. The container will be opened underwater, filled, and closed while still submerged. Bacteriological samples will be placed on ice immediately after capture and delivered for analysis within two hours. Analysis of bacteriological samples will begin within six hours of capture. Chain of Custody forms will be used to document sampling times, proper preservation, and custody from sampling until delivery to the laboratory.

Non-Wadeable Stream Samples

If sampling cannot be done safely by wading, a sample will be taken from a bridge or road crossing using a bucket and rope. Before taking the sample the bucket will be rinsed out three (3) times with sample water. From the bridge or road crossing, the bucket and rope will be lowered midstream into the fast flowing section of the water. Once the bucket has been filled it will then be pulled up for sampling. This method will also be used to collect samples of sufficient volume to fill all bottles. All analyses to be performed on site using portable testing equipment will be done either from the bridge or road crossing, or from samples collected with the bucket and rope as applicable.

If sampling cannot be done safely by wading, bacteriological samples will also be collected using a bucket and rope. Before taking the sample the bucket will be rinsed out three (3) times with sample water. From the bridge or road crossing, the bucket and rope will be lowered midstream into the fast flowing section of the water. Once the bucket has been filled it will then be pulled up for sampling. A properly labeled sterile bottle or whirl pack bag will be placed underwater in the sample, opened, and allowed to fill. The sample container will be closed while still underwater and then removed from the bucket. Bacteriological samples will be placed on ice immediately after capture and delivered for analysis within two hours. Analysis of bacteriological samples will begin within six hours of capture. Chain of custody forms will be used to document sampling times, proper preservation, and custody from sampling until delivery to the laboratory. Calibration records for the portable testing equipment will be maintained. Sub samples for laboratory analysis will be placed into properly labeled and preserved sample bottles, placed in individual zipper locking freezer bags to prevent cross contamination, and placed on ice within fifteen minutes of collection. Chain of Custody forms will be used to document sampling times, proper preservation, and custody from sampling until delivery to the laboratory.

Preservation, Transportation of Samples, and Shipping

Sub samples for laboratory analysis will be placed into properly labeled and preserved sample bottles, placed in individual zipper locking freezer bags to prevent cross contamination, and placed on ice within 15 minutes of collection. Chain of Custody forms will be used to document sampling times, proper preservation, and custody from sampling until delivery to the laboratory.

Sub samples to be delivered to the wastewater treatment laboratories for analysis will be carried by City staff. Upon arrival at the laboratory the samples will be placed in a sample refrigerator or left on ice to maintain proper temperature until analysis.

Record Keeping

For each parameter the City will record the following:

- The place, date, and time of sampling
- The person collecting the sample
- The dates and times the analyses were performed
- The person(s) who performed the analyses
- The analytical procedures or methods used
- The results of all analyses

The City will maintain a dry weather water quality monitoring report form for each dry weather sampling. The dry weather report form will also contain the bacteriological results for the station. The City will also maintain a wet weather water quality report form for each wet weather sampling. Copies of these report forms will be included with the annual report. Chain of custody copies, laboratory report copies, calibration records, quality control records, and water quality report forms will be maintained in the files of the person or position at the City of Valdosta Wastewater Laboratory.

Implementation Schedule

The City is prepared to fully implement this Monitoring and Implementation Plan when approved by the Georgia EPD.

Proposed Best Management Practices

The City will continue to implement its Stormwater Management Plan (SWMP) under its current NPDES Phase II MS4 permit.

FC - The City is currently implementing a number of best management practices (BMPs) in an effort to reduce fecal coliform bacteria in the Withlacoochee River. These BMPs include: smoke testing, sewer manhole replacement / rehabilitation, pump station replacement / rehabilitation, new force main, etc. BMPs are continuously being implemented to reduce FC from the Withlacoochee River.

Annual Reporting

Each year, the City will develop a brief water quality report for the Withlacoochee River. This report will include:

- Monitoring results
- Trend analysis
- Documentation of activities
- Recommendations based on evaluations

The water quality data along with the trend analysis will be utilized to determine if the trend is showing improvement or degradation relative to implementing BMPs. If the trend analysis indicates that water quality is worsening or not improving, then additional sampling and or BMPs will be evaluated to identify sources within the City limits. A copy of this report and sampling results/data will be submitted in the City's Annual Report.