

Beaver Ruin Creek Monitoring & Implementation Plan

City of Norcross

August 2010

Last Revised: March 2015

1. INTRODUCTION & STUDY OBJECTIVES

The City of Norcross (City) has developed this Monitoring & Implementation Plan (Plan) to monitor water quality within Beaver Ruin Creek. Beaver Ruin Creek, of which part is within the City, is listed in the 2012 305(b)/303(d) report as not meeting its designated use due to fecal coliform. This Plan is intended to satisfy requirements of the City's Phase I Stormwater Management Plan to monitor and evaluate water quality within impaired waterways within the City.

Contact

The primary contact with the City who will serve as a liaison with EPD is provided below.

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Stream Impairment

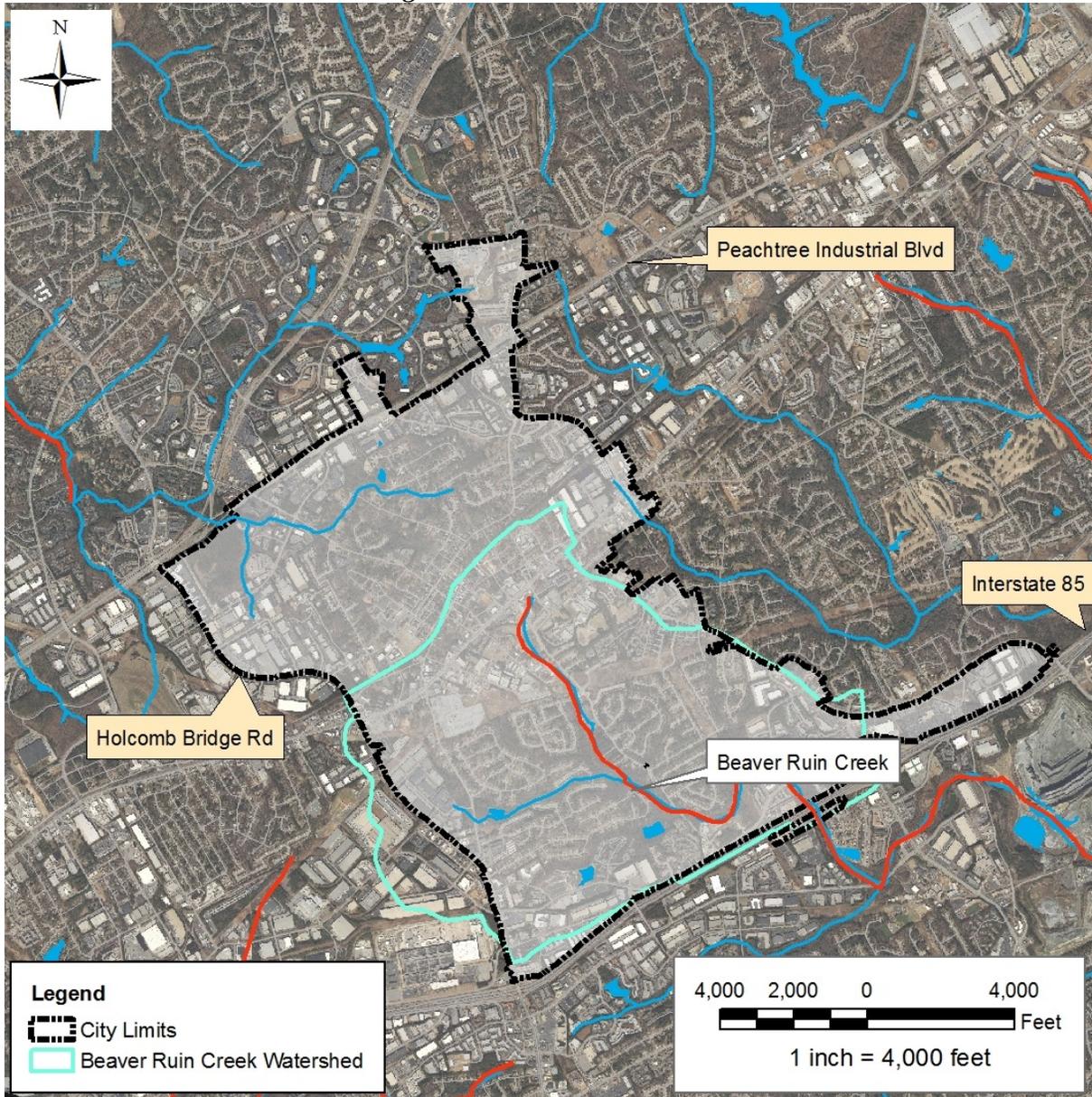
The 2012 Georgia 305(b)/303(d) list of impaired waterways identifies one stream segment (Beaver Ruin Creek) within the City of Norcross as not supporting its designated use of fishing. Details of the impairment from the 305(b)/303(d) report are provided below.

Reach Name	Reach Location	Criterion Violated	Potential Causes	Extent	Notes	Category
Beaver Ruin Creek	Gwinnett County	Fecal Coliform	Urban Runoff	8 miles	TMDL Completed	4a ⁽¹⁾

(1) Category 4a – Data indicate that at least one designated use is not being met, but TMDL(s) have been completed for the parameter(s) that are causing a water not to meet its use(s).

The impaired segment of Beaver Ruin Creek in relation to the City of Norcross is shown in the figure below.

Figure 1 Beaver Ruin Creek



2. WATER QUALITY SAMPLING & MONITORING PLAN

Sampling Methods

Water quality sampling methods will conform to the guidance in the Water Protection Branch Quality Assurance Manual, June 1999 [Revised 2005].

Grab Sampling

Sampling will be performed by collecting manual, “grab” samples for laboratory analysis. Grab samples are discrete water samples collected from the surface water body. Samples will be taken from the stream at a point as near to the centerline of the stream as possible. Where possible, the sample will be collected directly into the sample container, being careful to avoid loss of the preservative within the sample container. If direct access to the stream is not possible or wadeable, then supplemental sampling equipment (i.e. sampling rod with sterile collection bucket) will be utilized.

Handling and Preservation

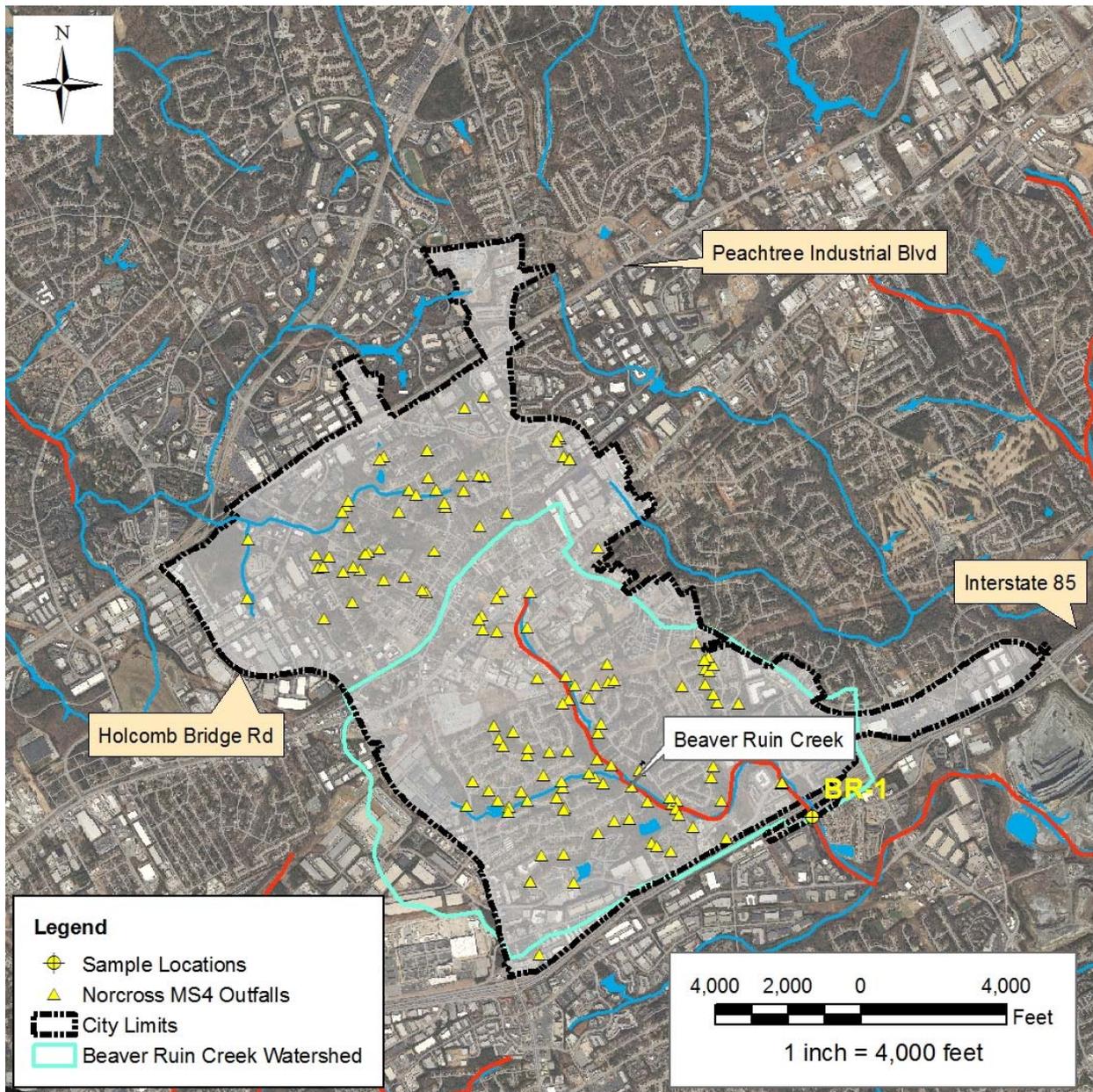
After sample collection, sample handling will be minimized to ensure that samples are not contaminated. Water samples will be sealed and placed on ice inside a cooler for delivery to the laboratory. Samples will be delivered to the laboratory no later than six hours after sample collection to meet laboratory holding times.

Monitoring Locations

Monitoring will be performed at one location within the impaired segment of Beaver Ruin Creek

Site ID	Road Crossing	Latitude	Longitude
BR-1	Goshen Springs Road	32° 55' 28.72" N	84° 10' 51.22" W

Figure 2 Monitoring Site Map



Parameters

Water quality samples will be collected as “grab” samples and analyzed for fecal coliform bacteria according to the analytical methods summarized below.

Bacteria Constituent	Detection Limit	Analytical Method	Laboratory
Fecal Coliform	10 colonies/100mL	SM 9222D	AES

Analytical standards must comply with the requirements of *Title 40, Code of Federal Regulations, Part 136*. Sample analyses shall be performed by an analyst certified in compliance with the *Georgia State Board of Examiners for Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act*, as amended, or by a laboratory facility accredited in compliance with the *Georgia Rules for Commercial Environmental Laboratory Accreditation (O.C.G.A. 12-2-9)*.

Sampling Frequency

Fecal coliform sampling frequency will be performed according to requirements for submitting data to EPD outlined in “Guidance On Submitting Water Quality Data For Use By The Georgia Environmental Protection Division In Listing Impaired Waters, October 2002.” For fecal coliform sampling, EPD requires that sampling will be performed to calculate four quarterly geometric means per year requiring a total of 16 sampling events. Each geometric mean requires 4 samples to be collected over a 30 day period. The City will conduct 2 geomeans during the winter period (November through April) and 2 geomeans during the summer period (May through October) each year.

Sampling will be performed without regard to weather conditions (dry or wet weather) and ideally will be performed once per week on the same day for four consecutive weeks per geometric mean.

Quality Assurance

For all laboratories, the Quality Assurance/Quality Control measures required by specific methods referenced in 40 CFR Part 136 must be implemented. Adequate records on analytical procedures (“bench sheets”) and the Quality Assurance/Quality Control measures shall be maintained to document their proper implementation and performance, and that the records shall remain on file and available for review for a minimum of three years.

Sample analyses shall be performed by an analyst certified in compliance with the *Georgia State Board of Examiners for Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act*, as amended, or by a laboratory facility accredited in compliance with the *Georgia Rules for Commercial Environmental Laboratory Accreditation (O.C.G.A. 12-2-9)*.

Laboratory analyses will be performed by an Analytical Environmental Services (AES) in Atlanta, GA.

Accrediting Organization:	NELAP, Florida Department of Health
Accreditation Expiration:	June 30, 2015

3. BEST MANAGEMENT PRACTICES

The City will continue to implement its Stormwater Management Plan (SWMP) under its current NPDES Phase I MS4 permit. Applicable sections of the SWMP include illicit discharge / illegal dumping prohibitions via City ordinance, industrial facility inspections and highly visible pollutant source inspections within the watershed. The City will evaluate the monitoring data to ascertain the level of contamination in the creek and if it is likely to be originating in the City.

As part of this plan, the City will implement a number of best management practices (BMPs) in an effort to reduce the occurrences of releases of fecal coliform bacteria from the MS4. These BMPs will include:

Dry Weather Screening of Beaver Ruin Creek Watershed MS4 Outfalls

The City is currently required to implement an illicit discharge detection and elimination plan via their NPDES Phase I MS4 permit. As part of this plan, the City is required to screen 20 percent of their MS4 outfalls each year to determine if non-stormwater discharges are emanating from the system. Procedures for how to screen the system and source trace any discharges are included in the City's SWMP. As part of the Beaver Ruin Creek monitoring and implementation plan, the City will conduct annual screenings of 20% of the Norcross MS4 outfalls within the watershed each year. Any discharges discovered as part of this procedure will be documented, tested and source traced to their originating locations to determine if pollutants are being introduced to the stream. If a discharge is found, appropriate actions will be taken which may include education, warnings and citations as warranted.

Sanitary Sewer Overflow Reporting

Currently, the City of Norcross provides sewer service within the incorporated portions of the watershed and the Gwinnett County Department of Water Resources provides sewer service to those portions of the watershed in the unincorporated areas. The City will remain vigilant of any potential or actual sanitary sewer overflows within the City Limits and watershed as a whole as shown in Figure 2. The City will document and respond to any overflows discovered each year and will either notify the County if outside the City or address the overflow within the City's jurisdictional areas.

Beaver Ruin Creek Stream Walk

The City will conduct a stream walk of Beaver Ruin Creek and its major tributaries to identify potential pollution sources that could influence the levels of coliform bacteria in the water and classify these sources as man made or naturally occurring. Any illicit discharges discovered as part of this effort will be addressed via the City's illicit discharge prohibition ordinance or referred to Gwinnett County (if located outside of the jurisdictional area of Norcross).

The following schedule outlines the implementation plan for the BMPs discussed above:

Annually (2015-)

- Evaluate the need for additional monitoring locations
- Conduct Water Quality Monitoring
 - 4 Geomeans at 1 Location (BR-1) + additional locations if warranted

- Conduct Dry Weather Screening of 20% of the Norcross MS4 outfalls in the Beaver Ruin Creek watershed
- Coordinate with Norcross Utilities (Water & Sewer provider) and / or Gwinnett County Water Resources on all identified Sanitary Sewer Overflows located within the watershed
- Conduct a Stream Walk of Beaver Ruin Creek to identify additional fecal coliform sources

4. EVALUATION AND REPORTING

Evaluation of Monitoring Data

Fecal coliform monitoring results will be evaluated annually based on criteria established by the Georgia Department of Natural Resources (DNR) outlined in *Georgia Rules and Regulations for Water Quality Control - Chapter 391-3-6* (amended 2011). This document establishes the following guidelines for fecal coliform:

- During the summer period from May – October, fecal coliform should not exceed a geometric mean of 200 colonies/100mL
- During the winter period from November – April, fecal coliform should not exceed a geometric mean of 1,000 colonies/100mL and not to exceed 4,000 colonies/100mL in a single sample

Annual Reporting

Each year, the City will develop a brief water quality report for Beaver Ruin Creek outlining:

- Monitoring Results of that Year's Data
- Trend Analysis of the Water Quality Monitoring Data
- Documentation of any Activities Undertaken in that Year Pursuant to this Plan
- Recommendations of any Additional Activities based on the Evaluation

The analysis of each year's water quality data along with the aforementioned trend analysis will be utilized to determine the water quality data relative to state standards and if the trend is showing improvement or degradation relative to previous years. Additionally, the results of the various BMPs will be outlined to document the identification of pollution sources along with the mitigation actions taken each year for sources identified in these efforts. If the trend analysis indicates that water quality is worsening or not improving, then additional BMPs will be identified for sources located within the City.

A copy of this report and sampling results / data will be included in the City's annual report for its Phase I Stormwater Management Program due June 15th of each year.