

5. FECAL COLIFORM MANAGEMENT MEASURES AND ACTIVITIES

5.1 Introduction

The goal of the Sandy Springs Fecal Coliform Watershed Improvement Plan (WIP) is to reduce or minimize fecal coliform contamination into the streams within the city limits. Various likely non-point and point sources were identified as sources of fecal coliform during the stream inventory that range from urban runoff to sanitary sewer leaks (see Chapter 3). Stormwater BMPs identified in earlier studies were evaluated for water quality and other benefits and are presented in Chapter 4. This section outlines management activities the City is currently doing to address fecal coliform and makes some recommendations for future activities.

5.2 Sources of Fecal Coliform Contamination in Sandy Springs

Based on direct observation from the stream inventory, urban runoff and animal sources (wildlife, pets, and livestock) in combination with sewer leaks/breaks and illicit discharges are the most likely sources of fecal coliform contamination in Sandy Springs. The TMDL Plans prepared by GA EPD list urban runoff as the primary source of fecal coliform bacteria in streams not meeting water quality standards, and the Atlanta Regional Commission (ARC) visual survey found similar sources as the stream inventory conducted as part of this study. Therefore, a variety of structural, non-structural, maintenance, monitoring, and public education activities must be used to address this problem.

5.3 Implementation Plan

The proposed implementation plan consists of four components; structural BMPs, non-structural practices, monitoring programs and public outreach and education.

5.3.1 Structural BMPs

As shown in Table 4-8, structural BMPs have varying rates of removal efficiencies for fecal coliform. Typically, dry detention has little to no removal efficiency due to the very short residence times. BMPs that target infiltration, minimize direct runoff into streams, and detain runoff for adequate periods of time to promote die-off have greater removal efficiencies.

As shown in Section 4.5, two BMPs are recommended for implementation based on their modeled fecal coliform reduction and asset ownership. These projects are within the City's current level of service and provide opportunities to improve water quality.

In addition to BMP recommendations listed above, the City is currently implementing or planning for several projects that will reduce fecal coliform in streams receiving storm runoff from those locations. These projects include the following:

- **Morgan Falls Park stormwater detention facility.** The City has diverted a 36-inch stormwater pipe draining a large parking lot at Morgan Falls Park and is building a wet detention facility to collect and treat all of this runoff. This 36-inch pipe currently drains directly into the Chattahoochee

River. Any fecal coliform from the parking lot and surrounding area in the drainage area will be collected and treated in this pond, which would result in a reduction to the Chattahoochee River.

- **Morgan Falls Park bioretention cells.** The City is currently expanding the Morgan Falls Park and is constructing an overlook area and parking lot. The drainage from this new area will be collected and diverted into a bioretention area. The runoff will be detained and infiltrated into the ground, which will reduce fecal coliform in the runoff.
- **Road improvement linear parks.** The City is currently designing and will soon begin construction on road improvement projects near the intersection of Abernathy Road and Johnson Ferry Road. The improvements will include a linear park along the road and with inverted drainage swales, reduced impervious area, and bioretention cells. The City is also planning improvements along Hammond Road which will contain similar elements as Abernathy Road, including an inverted grassed median. These improvements will reduce stormwater runoff, slow and treat runoff, and reduce the fecal coliform contamination to the receiving streams.

In addition, Sandy Springs will consider implementing other demonstration projects for roads, parks, and fire stations that may have multiple goals similar to the projects listed above.

5.3.2 Non-structural Practices

Urban runoff was noted as one of the largest contributors of fecal coliform in both the TMDL implementation plans and October 2009 Sandy Springs stream inventory. Due to diffuse nature of runoff across the landscape, the City also has implemented multiple non-structural practices that are geared towards improving water quality in stormwater runoff and in streams and rivers. These practices include but are not limited to the following categories:

- Ordinance development or improvement
- Stormwater infrastructure inventory, maintenance and repair
- Sewer and septic system inspections.

5.3.2.1 Ordinance Development or Improvement

Existing ordinances that provide water quality improvement and potential fecal coliform reduction have been already implemented by the City, which include:

- Post-Development Stormwater Management
- Illicit Discharge and Illegal Connection
- Stream buffer protection
- Property Maintenance and Housing Standard

These ordinances are described in more detail below. In addition, the City is currently considering other ordinances that could further reduce fecal coliform contamination.

The Post-development Stormwater Management for New Development and Redevelopment Ordinance (Section 109, Article IV) outlines the minimum requirements and procedures to control stormwater runoff from development and redevelopment. This ordinance requires the use of the Georgia Stormwater Management Manual. In addition, under Section 109-195, there is a provision that encourages better site design using Low Impact Development (LID) techniques and can replace a portion or all of the water quality treatment usually required as detention. As part of these regulations, the City requires a Stormwater Concept Plan and consultation meeting for all projects disturbing more than 5,000 square feet. This helps to reduce stormwater runoff impacts (and potential fecal contamination) from new developments.

The Illicit Discharge and Illegal Connection Ordinance (Section 109, Article III) outlines the protection of the public by regulation of non-stormwater discharge into the City's separate storm sewer system to the maximum extent practicable. This adopted ordinance is the Metropolitan North Georgia Water Planning District's (MNGWPD) model illicit discharge ordinance. It regulates the contributions of pollutants in the storm sewer system, prohibits illicit discharges and illegal connection to the system, prevent spills, dumping or other disposal of pollutants into the system, and establishes legal authority to carry out inspections, monitoring, and enforcement, as necessary to carry out these regulations. As part of this ordinance, Sandy Springs has established a dry weather screening program plus inspects 20 percent of its system annually. In addition, the City has established a citizen response network, which they use to monitor and investigate claims or notices. Currently, lateral connections from the County sewer system are private landowner responsibility. However, the City can issue a Notice of Violation (NOV) under this ordinance if a faulty, leaking, or broken lateral sewer line is identified. For example, in 2009 a citizen complaint led to a sewer NOV being issued (CE # 09-4727) to a private landowner because of a leaky sewer pipe, and during October 2009 stream inventory, several "stressed" lateral lines were observed and reported as potential point sources (see Appendix G).

The Stream Buffer Protection Ordinance (Section 109, Article V) outlines the provisions for maintaining a stream buffer along the City's streams and rivers to minimize erosion and siltation and maintain water quality by requiring a 50-foot undisturbed and 25-foot non-impervious setback for new developments. Riparian buffers provide multiple benefits to streams including interception of sediment and nutrients in overland runoff and the maintenance of in-stream habitat via water temperature moderation and introduction of woody debris (Wegner 1999), and bank stabilization (Simon and Collision 2001). Buffers prevent fecal coliform from reaching streams from overland flow.

The Property Maintenance and Housing Standard Ordinance (Section 105, Article IV) outlines the requirements for maintaining a safe and clean environment of residential properties. As part of this ordinance, the health department inspects centralized dumpsters for cleanliness and possible drainage to the stormwater sewer system. They also check to make sure rainfall doesn't drain into and out of the dumpsters. The City has code enforcement capacity to issues notices of violations and/or fines for improper maintenance. In addition, Fulton County has a requirement that all outdoor dumpsters, both residential and commercial, be properly covered, maintained in a neat condition, and drained to a County sewer connection.

In addition, the City is investigating the applicability and ability to incorporate a pet waste ordinance such that it does not contradict or interfere with the enforcement and use of other existing City ordinances. This ordinance may impose restrictions on the number of animals per household.

5.3.2.2 Stormwater Infrastructure Inventory, Maintenance and Repair

Sandy Springs has an extensive stormwater infrastructure inventory, maintenance and repair program. Knowing what the system consists of and the condition of the system will be important in helping identify future structural and non-structural activities for reducing fecal coliform. For example, the City may identify maintenance priorities for stormwater conveyance repairs and may look at retrofitting some areas to increase infiltration.

As part of this program, the City has a storm drain marker program. To date, the city has marked 395 catch basins, so the public knows that it is unlawful to dump trash, debris, and other pollutants down the drains. The City plans to continue marking drains into the future by enlisting public outreach groups and using City staff.

In addition, the City has inventoried over 90 percent of their infrastructure system (6,414 structures) and mapped the structures and conveyance. In total, this equals 54 miles of pipe and 6.7 miles of natural drainage channels. Maintenance and repair of 1,400 of these structures (20 percent of the system) has been completed,

and a prioritization system for continued maintenance and repair has been developed. Twenty stormwater management facilities were inspected in 2009 and another 116 facilities (10 percent of the City-responsible facilities) will be inspected in 2010. These facilities were inspected for maintenance needs for improved functionality as well as potential retrofit potential for water quality improvements.

The City has a cleaning program aimed at public streets and stormwater culverts. The trash and debris collected as part of these programs removes sources of fecal coliform that would otherwise be transported to streams during storm events. In 2008, 122.5 tons of trash and debris were removed from the streets by street sweeping 154.6 curb miles/month, which equals 1,855.2 curb miles/year. In 2009 stormwater culverts and inlets were cleaned, and 13,106 55-gallon bags of debris and trash were removed.

5.3.2.3 Sewer and septic inspection programs

As part of the dry weather screening and routine maintenance inspections programs conducted by City staff, sewer and septic leaks or breaks are identified. The City is currently increasing its role in actively identifying sewer and septic leaks during other inspections. City staff has code enforcement abilities and can fine private landowners if private lateral sewer lines or faulty septic systems are discharging pollutants into the stormwater system or directly into streams. In addition, the City inventoried approximately half of the stream miles in the City limits, which identified multiple water quality issues, including five potential sewer leaks. The City plans to continue to inventory the remaining streams within the City limits over the next 5 years.

5.3.3 Monitoring Programs

As part of City ordinances discussed above, the City has monitoring programs for ongoing dry weather screening and inspection of 20 percent of their storm sewer system annually.

The City has inventoried approximately half of the stream miles up the 25-acre catchment within the City limits, which is effective at identifying and fixing sources of fecal coliform. The City plans to continue to inventory 20 percent of the remaining stream miles annually.

Fulton County monitors for fecal coliform at three locations within the City limits: Long Island Creek, Marsh Creek, and Ball Mill Creek. The City also monitors habitat and macroinvertebrates at these same three locations as Fulton County monitors for fecal coliform. The City will continue monitoring stream health at these locations on a bi-annual basis. This data can be used to evaluate changes within these stream systems.

5.3.4 Public Outreach and Education

Sandy Springs has public outreach and education program that targets City offices and public facilities with flyers and brochures about stormwater and water quality of streams. The City hosts outreach events. The City also prepares articles for the local newspaper Sandy Springs Times and City email newsletter E-Blast. These efforts help to educate the public about how their actions affect stream water quality and thus potentially reduce the volume of pollutants, including fecal coliform, the public discharges into storm sewers and streams.

The City has prepared and distributed thousands of brochures including *Household Solutions for Preventing Stormwater*, *When It Rains It Pollutes*, *Stormwater and You Postcard*, and a flyer on fats, oils and grease (FOG) education. The City hosts World Monitoring Day, which was last held on September 18, 2009 and participate in the 6th Annual Morgan Falls Cleanup. In addition, City staff participates in civic organization events when invited, as schedules allow, to speak about stormwater issues. For example, the City is planning a rain garden workshop in April 2010 for Spalding Woods subdivision.

The City has also organized the Stormwater Advisory Team (SAT) which meets twice annually. The SAT is comprised of public citizens from various organizations or interests. Sandy Springs provides information

about the City's stormwater management activities as well as gets input from the members regarding the program. The Watershed Improvement Plans, Floodplain Mapping, and Stormwater Infrastructure studies have been presented at previous SAT meetings.

Additional public outreach activities will be considered by the City in the future. Technical assistance for septic tank maintenance and clean-out, pond clean out, and lateral sewer line inspection are all possible issues to address.

5.4 Implementation Schedule

The City of Sandy Springs has a strong background on fecal coliform reduction and elimination efforts. This section outlines some of these on-going efforts and makes recommendations for future activities.

5.4.1 Year One

- Implement project 17 00200002012-BMP-1 (Lisa Lane, \$311,000) from BMP projects recommended in chapter 4 and coordinate schedule with the implementation schedule of Long Island and Nancy Creek Watershed Improvement Plans.
- Inventory 20 percent of stream miles within the City limits (approximately 20 miles or \$30,000) to identify potential sources of fecal coliform. Start with the miles not already inventoried and then re-inventory stream segments on a rotational basis each year thereafter.
- Finalize design and construction of the two Morgan Falls Park projects.
- Continue public education and outreach activities (\$4,000).
- Increase inventory and identification of failing sewer and septic systems by City staff during routine inspections for illicit discharge inspection and other routine inspections.
- Investigate the viability of adopting a pet waste management and/or wildlife feeding ordinance.

Total Project Cost: Approximately \$345,000

5.4.2 Years Two through Five

- Implement project 17 00250004044-BMP-1 (Granite Ridge, \$862,000) from BMP projects recommended in chapter 4 and coordinate schedule with implementation schedule of Long Island and Nancy Creek Watershed Improvement Plans.
- Inventory approximately 20 percent of stream miles within the City limits (approximately 20 miles or \$30,000) to identify potential sources of fecal coliform. Start with the miles not already inventoried and then re-inventory stream segments on a rotational basis each year thereafter.
- Implement linear parks along Hammond Drive and Abernathy Rd with stormwater infiltration features.
- Continue public outreach activities(\$5,000).
- Increase inventory and identification of failing sewer and septic systems by City staff during routine inspections for illicit discharge inspection and dry weather screening.
- Continue to review service requests that may overlap with a watershed protection projects.
- Reevaluate level of service and adjust implementation schedule as needed.

Total Project Cost: Approximately \$897,000 year two, estimated \$435,000 per year after

5.4.3 Years Five through Ten

- Implement one BMP improvement project per year in coordination with Nancy Creek and Long Island Creek WIPs (\$400,000 per year).
- Inventory approximately 20 percent of stream miles within the City limits (approximately 20 miles or \$30,000) to identify potential sources of fecal coliform. Start with the miles not already inventoried and then re-inventory stream segments on a rotational basis each year thereafter.
- Identify potential demonstration projects for water quality improvement within existing City projects.
- Continue public outreach activities (\$5,000 per year).
- Increase inventory and identification of failing sewer and septic systems by City staff during routine inspections for illicit discharge inspection and dry weather screening.
- Continue to review service requests that may overlap with a watershed protection projects.
- Reevaluate level of service and adjust implementation schedule as needed.

Total Project Cost: Approximately \$435,000 per year.

5.4.4 Optional Tasks

In addition to activities outlined above, the City may want to consider:

- Submitting a 319(h) grant request to help fund a demonstration project that targets fecal coliform reduction. One example could be treating runoff from a dog park area.
- Obtain an additional public education and outreach brochure from the Clean Water Campaign. Print and distribute.
- Evaluate a cost-share program on pond clean outs. Keeping the stormwater detention capacity for small private stormwater ponds would have positive water quality benefits.
- Provide education to homeowners on private lateral sewer lines. Private lateral lines are the responsibility of homeowners and businesses, but may be a source of bacteria if broken or leaking.
- Develop a septic tank elimination program or a cash incentive/technical assistance program to repair and/or replace faulty or leaky septic system.
- Enhance current stormwater and surface water quality monitoring activities to identify potential fecal coliform “hot spots”.
- Develop a program to enhance degraded stream buffers.

This implementation recommendation and schedule should be revisited at least annually to ensure the watershed improvement plan is meeting the City of Sandy Springs goals.

Following this implementation plan will allow the City of Sandy Springs to reduce and eliminate fecal coliform from the streams within the City of Sandy Springs. New opportunities may arise and should be evaluated in a similar manner to the projects above. Use of the Sandy Spring Prioritization Matrix and the WIP Tools model will assist with this comparison.