City of Dunwoody Georgia

4800 Ashford Dunwoody Road
Dunwoody, Georgia 30338
dunwoodyga.gov | 678.382.6700

MEMORANDUM

To: Mayor and City Council

From: David Elliott

Date: May 21, 2018

Subject: **Approval of 2018 through 2022 Municipal Separate Storm Sewer System Permit Plan and Procedures**

ITEM DESCRIPTION

BACKGROUND

In order to operate the Stormwater Infrastructure, the City of Dunwoody must comply with National Pollutant Discharge Elimination System Permit No. GAG610000. These regulations originate from the Georgia Water Quality Control Act and the Federal Clean Water Act. These regulations previously required the implementation, enforcement, and maintenance of 31 Best Management Practices that include:

- A1 - Public Education, Pamplet Distribution
- A2 - Public Education, Article Publication
- B1 - Public Participation, StormDrain Marker Program
- B2 - Public Participation, Community Streamside Clean-up
- C1 - Illicit Discharge and Illegal Connection Ordinance
- C2 - Outfall Map and Inventory
- C3 - Outfall Inspection, IDDE Plan
- C4 - Illicit Discharge Education
- D1 - Erosion & Sedimentation Control Ordinance
- D2 - Site Plan Review Procedures
- D3 - Land Disturbance Inspection Program
- D4 - Land Disturbance Enforcement Procedures
- D5 - Land Disturbance Complain Response
- D6 - Staff Certifications
- E1 - Stormwater Management Ordinance Legal Authority
- E2 - Public and Private Stormwater Management Structures - Inventory
- E3 - Detention Pond Inspections
- E4 - Detention Pond Maintenance
- E5 - GI/LID Structure Inventory
- F1 - MS4 Control Structure Inventory and Map
- F2 - MS4 Inspections

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- F3 - MS4 Maintenance
- F4 - Street and Parking Lot Cleaning
- F5 - Employee Training
- F6 - MS4 Waste Disposal
- F7 - New Flood Management Projects
- F8 - Existing Flood Management Projects
- F9 - Municipal Facility Inspection
- Appendix A - Enforcement Response Plan
- Appendix B - Impaired Waters Plan

The Public Works Department and Community Development Department work together to satisfy these MS4 requirements. In 2016 the City of Dunwoody was awarded Georgia Association of Water Professionals "Outstanding Stormwater Program of the Year Award" for its exemplary compliance with MS4 Practices and Innovative Approaches to Stormwater Management.

On December 6, 2017 the Georgia Environmental Protection Division issued a new permit, that requires both the existing and expanded requirements to maintain compliance. The new requirements include:

- Expanded Public Education- Publish one additional email newsletter article and conduct one annual public presentation on stormwater.
- Expanded Public Participation- Annual recycling event and pet waste station at dog park. Both of these are practices the city already undertakes but they will now be a stormwater permit requirement.
- Mandatory Runoff Reduction Practices- By 2021 require projects to retain first 1 inch of rainfall on site.
- Linear Transportation Feasibility Program- Create stormwater requirements for these projects. The city already has a process that will be reviewed and incorporated into the MS4 program.
- Green Infrastructure / Low Impact Development Program- Requirements to be created and implemented by 2021.
- Expanded Maintenance Agreement Requirements- Newer private detention ponds now will be required to be inspected and have maintenance agreements in place with the city.
- E-Reporting-
- Increased visibility of MS4 Permit Planning - City Website

The EPD requires that updated procedures for meeting these requirements be submitted under the new permit. Most of the procedures are due June 4th, 2018. Some procedures have an extended due date through 2020. City Staff will continue to comply with submittals requirements over the next 2 years. The staff recommended procedures and supporting documentation are included as attachments to this memorandum.

RECOMMENDED ACTION

Approval of 2018 through 2022 MS4 Permit Plan and Procedures.

2017-2022

Storm Water Management Plan

Prepared for

City of Dunwoody Public Works

Storm Water Utility

4800 Ashford Dunwoody Road

Dunwoody, GA 30338

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Map Pockets

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Existing Phase II MS4

Storm Water Management Program
City of Dunwoody, GA

June 4, 2018

STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Storm Water Management Program (SWMP)
General NPDES Permit No. GAG610000 for
Small Municipal Separate Storm Sewer Systems (MS4)

1. General Information

A. Name of small MS4: City of Dunwoody, Georgia

B. Name of responsible official: Eric Linton
Title: City Manager
Mailing Address: 4800 Ashford Dunwoody Road
City: Dunwoody State: GA Zip Code: 30338
Telephone Number: 678-382-6700

C. Designated stormwater management program contact:
Name: David Elliott
Title: Stormwater Utility Manager
Mailing Address: 4800 Ashford Dunwoody Road
City: Dunwoody State: GA Zip Code: 30338
Telephone Number: 678-382-6858
Email Address: David.Elliott@dunwoodyga.gov

2. Sharing Responsibility

A. Has another entity agreed to implement a control measure on your behalf?
Yes ☐ No☒ (If no, skip to Part 3)

Control Measure or BMP:

1. Name of entity: N/A

2. Control measure or component of control measure to be implemented by entity on your behalf: N/A

B. Attach an additional page if necessary to list additional shared responsibilities. **It is mandatory that you submit a copy of a written agreement between your MS4 and the other entity demonstrating written acceptance of responsibility.**

3. Minimum Control Measures and Appendices

A. Public Education and Outreach

B. Public Involvement/Participation
C. Illicit Discharge Detection and Elimination
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F. Pollution Prevention/Good Housekeeping
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H. Appendix – Impaired Waters

4. Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Eric Linton Date: _____

Signature: _____ Title: City Manager

Storm Water Management Program

Public Education and Outreach on Storm Water Impacts

40 CFR Part 122.34(b)(1) Requirement: The permittee must implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.

A. Best Management Practice (BMP) #1

1. Target audience: General Public

2. Description of BMP: Distribute pamphlets and fliers on stormwater pollution at publicly-owned facilities so as to make them readily visible/accessible to the public.

3. Measurable goal(s): 250 pamphlets will be distributed in public areas and/or publicly-owned facilities annually.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

6. Rationale for choosing BMP and setting measurable goal(s): This BMP addresses stormwater runoff and pollution control issues within the City and raises the public's awareness of these issues.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The distribution of pamphlets reflects increased community awareness.

B. BMP #2

1. Target audience: General Public

2. Description of BMP: Article Publication

3. Measurable goal(s): Two articles/advertisements related to stormwater issues, solutions or events will either be published on the City's website or displayed on posters in key public areas each year. Copies of the materials posted or displayed will be provided in each annual report.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Communications Director

6. Rationale for choosing BMP and setting measurable goal(s): Articles/posters will educate and inform the public about local stormwater issues, solutions or stormwater-related events.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The City's involvement of community members in the stormwater program will reflect the effectiveness of the BMP.

C. BMP #3

1. Target audience: General Public

2. Description of BMP: City Newsletter – Send out newsletters via subscribed City email blasts that cover relevant stormwater issues.

3. Measurable goal(s): One newsletter covering relevant stormwater topics and issues of interest to residents will be sent via subscription-based email blast.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Communications Director

6. Rationale for choosing BMP and setting measurable goal(s): Provides updates to the public on local stormwater issues and ways residents can avoid contributing to residential stormwater pollution. Empowers citizens to make informed decisions about supporting the health of the local environment.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The communication of the local stormwater issues and related topics to the public will reflect the effectiveness of the BMP.

D. BMP #4

1. Target audience: General Public

2. Description of BMP: Public/Government Official Presentations – Present stormwater modeling and sustainable site design concepts to the public and/or elected officials using educational demonstrations and hands-on activities.

3. Measurable goal(s): One stormwater-related presentation will be given to the public and/or elected officials every year.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

6. Rationale for choosing BMP and setting measurable goal(s): Presenting educational material on stormwater provides an opportunity for the public to learn the role of stormwater planning in sustainable site design and how it affects them and their community directly.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The involvement of the community in the stormwater program will reflect the effectiveness of the BMP.

Public Involvement/Participation

40 CFR Part 122.34(b)(2) Requirement: The permittee must, at a minimum, comply with State and local public notice requirements when implementing a public involvement/ participation program.

A. Best Management Practice (BMP) #1

1. Target audience/stakeholder group: General Public

2. Description of BMP: Storm drain marker program – Program involves volunteers from the community in marking the MS4's storm drain inlets and educates the public on pollutant sources.

3. Measurable goal(s): Install 100 Storm Drain Markers annually.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

6. Rationale for choosing BMP and setting measurable goal(s): Marking storm drains raises awareness of stream health and pollution sources.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Reduced trash and yard debris in the inlets and storm drains.

B. BMP #2

1. Target audience/stakeholder group: General Public

2. Description of BMP: Stream Clean-up – Community and neighborhood stream clean-up event.

3. Measurable goal(s): Hold one streamside clean-up event per year.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

6. Rationale for choosing BMP and setting measurable goal(s): Provides public education and involvement in stream health and clean-up. Provides trash removal from community streams.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The number of volunteers participating and the amount of trash removed from the stream will demonstrate the effectiveness of this BMP.

3. BMP #3

1. Target audience: General Public

2. Description of BMP: Recycling Event

3. Measurable goal(s): At least one recycling event will be hosted annually by the Dunwoody Sustainability Committee as part of the City's Sustainability Initiative. Documentation is provided to the City after the event is held and will be included in each annual report.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

5. Person (position) responsible for overall management and implementation of the BMP: Sustainability Committee

6. Rationale for choosing BMP and setting measurable goal(s): This BMP addresses the need to provide public access to disposal methods for items that are not regularly accepted by the local County trash pick-up or recycling program or items that may be detrimental to the environment if disposed of improperly.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The hosting of this type of event and the participation of citizens in the event will reflect the effectiveness of the BMP.

4. BMP #4

1. Target audience: General Public

2. Description of BMP: Pet Waste Stations – Place pet waste stations in public park(s) to encourage proper disposal of domestic animal waste.

3. Measurable goal(s): Place pet waste station(s) in a public area where domestic animals are commonly brought by owners and refill bags as needed.

4. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Ongoing
    d. Month/Year of each action (if applicable): N/A

5. Person (position) responsible for overall management and implementation of the BMP: Parks Department

6. Rationale for choosing BMP and setting measurable goal(s): Pet waste stations encourage proper disposal of pet waste while also letting the public know what is expected to be done with their pet's waste. Pet waste can be a prominent contributor to runoff pollution, especially in residential/suburban areas. Promoting proper disposal will help to benefit stream health and remind the public that their actions impact the environment.

7. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The availability of pet waste stations in public areas commonly frequented by domestic animals and their owners will reflect the effectiveness of the BMP.

Illicit Discharge Detection and Elimination

40 CFR Part 122.34(b)(3) Requirement: The permittee must develop, implement and enforce a program to detect and eliminate illicit discharges into your small MS4. You must:

A) Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the State that receive discharges from those outfalls;

B) Effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions;

C) Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to your system; and

D) Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

A. Ordinance/Regulatory Mechanism Evaluation

1. Does the MS4 have an ordinance or regulatory mechanism that effectively prohibits illicit discharges? Yes☒ No☐

   If yes, date of adoption: 2008
   Submit a copy as an addendum to this form.

   If no, see item #2.

2. If an evaluation of the ordinance/regulatory mechanism indicates that the ordinance/regulatory mechanism will require revision, then a copy of the adopted ordinance must be submitted with that year's annual report.

   Ordinance adoption date: N/A
   Date for submittal to EPD: N/A

B. Storm Sewer Map

1. Does the MS4 have a completed inventory and storm sewer map showing the location of all outfalls and the names and location of all waters of the State that receive discharges from those outfalls? Yes☒ No☐

   If yes, submit the inventory and storm sewer system map as an addendum to this form.

If no, see item #2.

2. If the inventory and storm sewer system map must be developed, provide a schedule for completion. Final completion date/date for submittal to EPD must not exceed February 15, 2014. N/A

C. BMP #1

1. Description of BMP: Legal Authority – Code of Ordinances Chapter 32. ARTICLE IV. Division 9-Illicit Discharge and Illegal Connection. The BMP is based on the model ordinance of the Metropolitan North Georgia Water and Planning District (MNGWPD).

2. Measurable goal(s): Review ordinance changes recommended by the MNGWPD and revise the current ordinance as applicable.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually as needed
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): The BMP will provide the City the means to investigate and take steps to eliminate illicit discharges and illegal connections within the City.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Effectiveness will be based on the City's ability to remove an illegal connection or illicit discharge from the MS4.

D. BMP #2

1. Description of BMP: Outfall Map and Inventory – Maintain the City's Outfall Map and Inventory showing the location of all known outfalls and the names and locations of all waters of the State.

2. Measurable goal(s): Update the Map each year with the addition, removal or revised outfall locations. The number of added or removed outfalls will be reported annually along with the total.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): The Outfall Map and Inventory will allow the City to better determine potential pollution sources/areas.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: If the mapped location of the outfall helps find the effluent from or identify the source of an illicit discharge or illegal connection, that will be a measure of the BMP's effectiveness. Absence of illegal connections or illicit discharges will also reflect the overall effectiveness of the BMP and program.

E. BMP #3

1. Description of BMP: IDDE Plan – Implement the City's plan for dry weather screening of outfalls, investigation of suspected illicit discharges and elimination of identified illicit discharges.

2. Measurable goal(s): Perform dry weather screening of all outfalls within the scheduled geographical area each year.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Dry weather screenings are useful in identifying illicit discharges. The geographically-based schedule for annual outfall screening will allow for all outfalls to be inspected over the 5-year permit cycle.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Detection and removal of illegal connections and illicit discharges discovered in the screening process will reflect the effectiveness of the BMP. Finding no illicit discharges will also reflect the effectiveness of the BMP and program.

F. BMP #4

1. Description of BMP: Education – Distribute informational material on illegal discharge effects and prevention. The purpose of this BMP is to inform the public, employees and businesses of the hazards associated with illegal discharges and how to prevent them in the household and/or workplace. This BMP is closely related to the Public Education BMP #1; hence the City will ensure that pamphlets related to illicit discharge topics are included within the education package that will be distributed to government offices.

2. Measurable goal(s): One hundred (100) pamphlets or fact sheets related to IDDE will be distributed in strategic, public locations annually.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Distributing educational materials related to the negative impact illicit discharges have on stream health increases public awareness and also serves to educate target groups within the community about how they can prevent this type of pollution.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Distribution of educational material will reflect public awareness of the problem.

G. BMP #5

1. Description of BMP: Complaint Response – Implement the EPD approved procedures for receiving, investigating and tracking illicit discharge complaints.

2. Measurable goal(s): Implement the complaint response procedures. Record the complaints received and investigated annually.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Enlisting the public in identifying illicit discharges and illegal connections along with tracking these complaints helps to remove verified illicit discharges from the MS4.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The effectiveness of the BMP will be reflected through the verification of illegal connections and/or illicit discharges from the complaints received.

Construction Site Storm Water Runoff Control

40 CFR Part 122.34(b)(4) Requirement: The permittee must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Storm water discharges from construction activity disturbing less than one acre must be included in the permittee's program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include:

A) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance;

B) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;

C) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;

D) Procedures for site plan review which incorporate consideration of potential water quality impacts;

E) Procedures for receipt and consideration of information submitted by the public; and

F) Procedures for site inspection and enforcement of control measures.

A. Ordinance Evaluation

1. Does the MS4 have an ordinance which is adequate to require erosion and sediment controls at construction sites? Yes☒ No☐

   If yes, date of adoption: 2009
   Submit a copy as an addendum to this form.

   If no, see item #4.

2. Does the ordinance include sanctions for failure to comply with erosion and sediment control requirements? Yes☒ No☐

   If no, see item #4.

3. Does the ordinance require construction site operators to control waste at the construction site? Yes☒ No☐

If no, see item #4.

4. If an evaluation of the ordinance must be completed, or the MS4 is aware that the ordinance will require revision, then adoption must be completed. If the ordinance will be revised, then a copy of the adopted ordinance must be submitted with that year's annual report.

Final completion date: December 31, 2013
Date for submittal to EPD: February 15, 2014

B. Best Management Practice (BMP) #1

1. Description of BMP: Legal Authority – The City has an Erosion and Sediment Control Ordinance and a Litter Control ordinance to control construction site waste.

2. Measurable goal(s): Review ordinance changes recommended by the MNGWPD and revise the current ordinance as applicable. The Stormwater Management Ordinance will be evaluated on an annual basis by the Community Development Department. If the ordinance is revised, a copy of the updated ordinance will be submitted with the following annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): The BMP provides the legal means to control Erosion and Sediment on construction sites as well as site-generated waste.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The City's ability to enforce regulations regarding site-generated waste will demonstrate this BMP's effectiveness.

C. BMP #2

1. Description of BMP: Site Plan Review Procedures – All site plans for projects requiring an LDP and that disturb more than 5,000 square feet are reviewed by certified City of Dunwoody Staff (Level II Plan Reviewer). Sites that disturb more than one acre are also reviewed and approved by the Dekalb County Sewer and Water Conservation District for compliance with E&S measures.

2. Measurable goal(s): The City's Site Plan Review Procedures will be followed for all site plans submitted for an LDP. The number of plans submitted, reviewed, approved and/or denied will be catalogued and reported annually.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): As needed

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Requiring an LDP review process will set minimum standards for the design and construction of land disturbance activities.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Meeting the minimum design standards improves water quality by reducing stream turbidity and site construction waste.

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D. BMP #3

1. Description of BMP: Inspection Program – Conduct inspections of construction sites in accordance with the Georgia Soil and Water Conservation Commission (GSWCC). All projects with an active LDP are to be inspected to ensure that proper E&SC measures have been installed and maintained according to the requirements of the GSWCC and the Stormwater Management Ordinance. Inspections are conducted by the Community Development Department by personnel certified in the fundamentals of E&SC. The lead inspector is required to have a Level II certification as a plan reviewer. Inspections are conducted following the Field Manual for Erosion and Sediment Control in Georgia ("Green Book"). Inspections and enforcement actions are described in the Code of Ordinances Sec. 16-151 – Inspections and Enforcement.

2. Measurable goal(s): A list of active LDP sites and inspections conducted will be provided with each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): As needed
    d. Month/Year of each action (if applicable): Annually

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Inspections establish accountability of the permit holder to meet the requirements of the permit and to limit pollutants from leaving the permit site.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Inspections limit the number of permit violations on construction sites.

E. BMP #4

1. Description of BMP: Enforcement Procedures - Implement enforcement procedures for E&SC violations as outlined in the Code of Ordinances Sec 16-151 - Inspection and Enforcement and Sec. 16-152 - Penalties and Incentives.

2. Measurable goal(s): Any enforcement actions taken during the reporting period will be documented and provided in the annual report, including the number and type of action taken and the status of the action.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Enforcement actions will create financial incentives for permittees to comply with the E&SC laws and will ultimately reduce pollution.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The City's ability to enforce E&SC regulations, require corrective measures on a construction site and eliminate sources of pollution demonstrates the effectiveness of this BMP.

F. BMP #5

1. Description of BMP: Complaint Response - Receive and respond to citizen complaints concerning erosion and sediment control issues following the EPD approved procedures.

2. Measurable goal(s): Provide information on complaints received and investigated during the reporting period in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Involving the public in identifying E&SC issues will assist the City in correcting potential pollution sources.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The City's ability to respond to complaints regarding E&SC issues will demonstrate this BMP's effectiveness.

G. BMP #6

1. Description of BMP: Certification - City Staff involved in construction activities subject to the construction general permits will be trained and certified in accordance with the rules adopted by the GSWCC.

2. Measurable goal(s): Identify and list the required and current staff certification in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Certified and trained staff will provide a greater level of awareness of E&S requirements and procedures.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Training and certification of City staff in E&SC principles will improve implementation of the regulations.

Post-Construction Storm Water Management in New Development and Redevelopment

40 CFR Part 122.34(b)(5) Requirement: The permittee must develop, implement, and enforce a program to address storm water runoff into the MS4 from new development and redevelopment projects, including projects less than one acre if they are part of a larger common plan of development or sale. You must:

A) Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for your community;

B) Use an ordinance or other regulatory mechanism to address post-construction runoff from new development or redevelopment projects; and

C) Ensure adequate long-term operation and maintenance of BMPs.

See Table 4.2.5 (a) of the Permit

A. Stormwater Design Manual

1. Has the MS4 adopted the Georgia Stormwater Management Manual?
   Yes☒ No☐

   If yes, provide the date of adoption: 2009
   Submit a copy of the adopted ordinance or resolution as an addendum to this form.

   If the MS4 is located within the 11-county coastal management program service area, has adoption of the Coastal Stormwater Supplement been completed? N/A.
   Yes☐ No☐

   If yes, provide the date of adoption: Click here to enter text.

   If no, see item #2.

2. Has the MS4 adopted a local design manual in place of the Georgia Stormwater Management Manual? N/A.
   Yes☐ No☐

   If yes, provide the date of adoption: Click here to enter text.

   If no, see item #3.

3. If adoption of the Georgia Stormwater Management Manual, a local design manual, or the Coastal Stormwater Supplement has not yet occurred, then

adoption must be completed. A copy of the adopted ordinance must be submitted with that year's annual report.

Final completion date:
Date of submittal to EPD:

B. Inventory of Post-Construction Storm Water Management Structures

1. Does the MS4 have a completed inventory of all publicly-owned post-construction storm water structures and those privately-owned structures designed after December 9, 2008?
   Yes☒ No☐ Yes

   If yes, submit the inventory as an addendum to this form.

   If no, see item #2.

2. If the inventory is not complete, then provide a schedule for completion.

C. Post-Construction Ordinance Evaluation

1. Does the MS4 have an ordinance that effectively controls runoff from new development or redevelopment sites?
   Yes☒ No☐

   If yes, submit a copy as an addendum to this form.

   If no, see item #2.

2. If an evaluation of the ordinance must be completed, or the MS4 is aware that the ordinance will require revision, adoption must be completed by no later than one year from the date of designation and submitted with that year's annual report. N/A

Final completion date:
Date of submittal to EPD:

D. Green Infrastructure/Low Impact Development (GI/LID)

1. If the population is less than 10,000, then no action is required.

2. If the population exceeds 10,000, then the MS4 must review and revise, where necessary, building codes, ordinances, and other regulations to ensure they do not prohibit or impede the use of GI/LID.

i. An evaluation of the regulatory mechanisms must be performed. Provide a schedule for completing the evaluation:

Task	Interim Date
Identify Ordinances	12/31/2013
Coordinate Dept. Reviews	6/30/2014
Prepare Evaluation Report	12/3/2014

ii. The evaluation must be completed by no later than 2 years following permit issuance and submitted by February 15, 2015.

Final completion date: 12/31/2014
Date of submittal to EPD: 2/15/2015

iii. Any necessary ordinance revisions must be completed and adopted ordinances submitted to EPD within 4 years of permit issuance and submitted to EPD by February 15, 2017.

Final completion date/date of submittal to EPD: 2/15/2017

3. Does the MS4 have a completed inventory of water quality-related GI/LID structures located within the permitted area and at a minimum, constructed after the effective date of the permit? Yes☒ No☐

If yes, submit the inventory as an addendum to this form.

If no, see item #4.

4. If the inventory is not complete, then provide a schedule for completion. The inventory must be submitted by February 15, 2015.

Develop Inventory Criteria & Process: N/A
Perform Inventory: N/A
Submit to EPD: N/A

E. BMP #1

1. Description of BMP: Legal Authority - Enforce the Standards of the Stormwater Management Ordinance as adopted in Sec. 16-226 of the City of Dunwoody, Georgia Code of Ordinances.

2. Measurable goal(s): Evaluate and, if necessary, modify the existing ordinance to comply with current laws or regulations.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): The ordinance provides standards within the community to control the release of stormwater from construction sites.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Enforcement of the design standards will result in the implementation of pollution control devises with greater stormwater runoff control.

F. BMP #2

1. Description of BMP: Inventory - Maintain an inventory of all publicly-owned post construction stormwater management structures and privately owned structures designed after Dec. 9, 2008 and those other structures that the City maintains.

2. Measurable goal(s): Update the inventory annually as new structures are added to the system.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): The inventory of existing and new structures in the community facilitates periodic inspection and maintenance for proper operation.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Maintaining an up to date inventory will help keep structures operating properly through scheduled inspection and maintenance, reducing peak runoff and erosion.

G. BMP #3

1. Description of BMP: Inspection Program - Conduct inspections of all post-construction stormwater management structures shown on the inventory following the established procedures.

2. Measurable goal(s): One geographical area will be inspected each year such that all structures are inspected within the 5-year permit cycle.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Inspections will identify maintenance needs & will ensure proper operation of the structure.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Inspections provide for the identification of system deficiencies, leading to necessary maintenance activities that reduce potential pollution sources.

H. BMP #4

1. Description of BMP: Maintenance Program - Provide for proper maintenance of stormwater management structures as outlined in the City's Maintenance Procedures.

2. Measurable goal(s): Implement the Maintenance Program and provide documentation of maintenance activities in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Maintenance is a vital part in the long-term operation of stormwater structures and tracking maintenance activities helps in planning and preparing for future needs.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Maintenance activities will potentially eliminate a pollution source and will facilitate the proper functioning of the stormwater structures.

I. BMP #5

1. Description of BMP: GI/LID Structures Inventory - Develop and maintain an inventory of water quality related GI/LID structures located within the community and installed after Dec. 6, 2012.

2. Measurable goal(s): An inventory of public and commercial GI/LID structures will be maintained by the City and submitted in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Identifying and inventorying GI/LID Structures will help the City track pollution and runoff reducing structures within the basins.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Having an inventory of GI/LID structures demonstrates the presence of structures within the City that are beneficial to local waterways. The presence of these structures also shows the City's awareness of the need to include these types of facilities when possible.

J. BMP #6

1. Description of BMP: GI/LID Program - Develop a program describing the GI/LID practices to be implemented. The program will include: procedures for evaluating the feasibility and applicability of different GI/LID techniques; a list of the allowed GI/LID structures within the City; inspection and maintenance procedures for all GI/LID structures within the City (includes those owned by the City, those owned by other public entities and privately-owned non-residential structures).

2. Measurable goal(s): Submit the GI/LID program to the EPD by February 15, 2020. Include the program in the SWMP and implement it upon submission to the EPD.

3. Schedule:

    a. Interim milestone dates (if applicable): February 15, 2020
    b. Implementation date (if applicable): 2020
    c. Frequency of actions (if applicable): N/A
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Following a GI/LID program that outlines procedures for selecting appropriate GI/LID structures will help to select the most effective sustainability measures for a given site. Providing a clear guide for the long term operation of GI/LID structures within the City will help in getting the most benefits possible from these types of structures.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The successful installation and operation of GI/LID structures within the City will demonstrate the effectiveness of the BMP.

K. BMP #7

1. Description of BMP: GI/LID Inspection and Maintenance Program – Beginning in 2020, the City will perform inspections and maintenance of all publically-owned structures and will track inspections done for known privately-owned and operated GI/LID infrastructure. All GI/LID structures included in the inventory are to be inspected within a 5-year period. Inspections are completed in accordance with the schedule outlined in the submitted GI/LID program.

2. Measurable goal(s): Annual reports submitted after February 15, 2020 will include documentation of all inspections conducted during the reporting period. The number of permittee-owned structures and the percentage of the total permittee-owned structures maintained during the reporting period will be provided in each annual report. Documentation of the maintenance procedures for non-permittee owned GI/LID structures as outlined in the GI/LID program will also be provided.

3. Schedule:

    a. Interim milestone dates (if applicable): February 15, 2020
    b. Implementation date (if applicable): 2020
    c. Frequency of actions (if applicable): N/A
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Receiving records for the inspection and maintenance of private and public GI/LID structures will create a necessary emphasis on their operation and maintenance. This requirement also creates the need for property owners to review the City's GI/LID program.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Receiving records for the inspection and maintenance of private and public GI/LID structures will reflect the effectiveness of this BMP.

Pollution Prevention/Good Housekeeping for Municipal Operations

40 CFR Part 122.34(b)(6) Requirement: The permittee must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Using training materials available from the USEPA and other organizations as guidance, the permittee must, as a part of this program, include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

A. Best Management Practice (BMP) #1

1. Description of BMP: MS4 Control Structure Inventory and Map - The inventory and map includes catch basins, ditches, detention/retention ponds and storm drain lines.

2. Measurable goal(s): Update the inventory and map of structures to include the minimum list of required structures (catch basins, ditches, detention/retention ponds and storm drain lines). The number of structures added during the reporting period and the total number of structures will be provided in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Identifies and locates all MS4 control structures within the City that will require inspection and possible maintenance.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The inventory will assist in identifying maintenance needs that, when addressed, improve the MS4's functioning and reduce erosion or pollutants.

B. BMP #2

1. Description of BMP: MS4 Inspection Program - Conduct annual inspections of the MS4 control structures so that 100% of the inventoried structures are inspected during the 5-year permit cycle.

2. Measurable goal(s): Inspect the inventoried MS4 structures located within the scheduled geographical area each year, along with any additional inspections needed to complete all inspections of the MS4 at the end of the 5-year cycle.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Performing inspections of all MS4 structures helps to identify maintenance needs for the proper operation of the MS4 system.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Inspections of the MS4 structures results in the proper operation of the MS4 system, reducing the amount of pollution to the stormwater system.

C. BMP #3

1. Description of BMP: Maintenance Program - Provide maintenance to the MS4 control structures as needed as determined by the results of the Inspection Program.

2. Measurable goal(s): Provide the number of each type of structure maintained annually.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): As needed
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Maintenance is required for long-term, successful operation of the MS4.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Maintenance will improve operation of the MS4 structures and should reduce erosion and pollution loads entering the stormwater drainage system.

D. BMP #4

1. Description of BMP: Street and Parking Lot Cleaning - Street cleaning will be performed by City staff as described in the street cleaning procedure.

2. Measurable goal(s): The number of centerline miles cleaned will be logged annually and submitted in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Public Works Department

5. Rationale for choosing BMP and setting measurable goal(s): Street sweeping reduces the amount of solid waste and pollutants in stormwater runoff from streets.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The removal of waste from streets reduces the amount of pollutants entering the stormwater system.

E. BMP #5

1. Description of BMP: Employee Training – Conduct one training session per year for City employees to address pollution prevention for municipal activities.

2. Measurable goal(s): Conduct a training session annually and provide documentation of the educational activity in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Public Works Department

5. Rationale for choosing BMP and setting measurable goal(s): Training helps to make employees more aware of the potential water quality impacts their job actions may cause, so that they can take steps to prevent them.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Directing training at job activities and pollution concerns should help reduce pollutant impacts.

F. BMP #6

1. Description of BMP: Waste Disposal - All waste and debris removed from the MS4 will be disposed of such that the waste does not re-enter the MS4 or cause pollution elsewhere.

2. Measurable goal(s): The volume of debris removed from the system during the reporting period will be logged and provided in each annual report.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Ongoing
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): To ensure waste resulting from stormwater management activities are disposed of properly and do not re-enter the MS4.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: The volume of debris removed from the system will demonstrate this BMP's effectiveness.

G. BMP #7

1. Description of BMP: New Flood Management Projects - Assess proposed flood management projects for water quality impacts during the design phase as required by the Stormwater Management Ordinance.

2. Measurable goal(s): Report the number of plans reviewed annually where water quality impacts have been assessed.

3. Schedule:

    a. Interim milestone dates (if applicable): No
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Ongoing
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Community Development Department

5. Rationale for choosing BMP and setting measurable goal(s): Assessing new flood management projects for water quality improvements creates the opportunity to consider the inclusion of water quality structures.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Any installation of water quality measures will have a reduction in TSS per the design standards.

H. BMP #8

1. Description of BMP: Existing Flood Management Projects – Assess existing, publicly-owned flood management projects for potential retrofits that will address water quality impacts.

2. Measurable goal(s): Perform assessment of all existing publicly-owned flood management projects during the 5-year term of the permit and report annually on assessment activities.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): 2017
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): N/A

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Assessing existing public flood management projects for possible retrofits provides an opportunity to improve the water quality of stormwater runoff.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Any retrofit installed will improve water quality and reduce pollution.

I. BMP #9

1. Description of BMP: Municipal Facilities – Annually update an inventory of municipal facilities with the potential to cause pollution to the MS4 and inspect all inventoried facilities within the 5-year permit cycle.

2. Measurable goal(s): Annually update the inventory of Municipal Facilities within the City that have the potential to cause pollution to the MS4. Inspect all facilities by the end of the 5-year permit cycle, with a minimum of 5% being inspected annually.

3. Schedule:

    a. Interim milestone dates (if applicable): N/A
    b. Implementation date (if applicable): N/A
    c. Frequency of actions (if applicable): Annually
    d. Month/Year of each action (if applicable): By December

4. Person (position) responsible for overall management and implementation of the BMP: Stormwater Utility Manager

5. Rationale for choosing BMP and setting measurable goal(s): Identifying municipal facilities that can pollute stormwater make it possible to schedule inspections of them and encourages practices that are aimed at reducing or eliminating pollutants.

6. How you will determine whether this BMP is effective in reducing pollution to stormwater in accordance with Part 5.1.4 of the Permit: Pollution will be reduced if pollutant sources or improper practices are identified and corrected. Conducting inspections of municipal facilities accomplishes this.

Appendix A

Enforcement Response Plan

1. The MS4 must develop and implement an Enforcement Response Plan (ERP) that describes the action to be taken for violations of the Storm Water Management Program. The ERP must be completed and submitted with the second annual report following permit issuance, February 15, 2015.

   Final completion date: December 31, 2014
   Date of submittal to EPD: February 15, 2015

2. In accordance with Part 4.3 of the NPDES Permit, the ERP must include escalating enforcement responses for repeat and continuing violations. At a minimum, the ERP must address the following categories (refer to Part 4.3 of the NPDES Permit for more detail):
   - Names of ordinances and citations;
   - Types of enforcement mechanisms;
   - Description of the use of these enforcement mechanisms;
   - Time frames; and
   - Description of the tracking and reporting mechanism.

NOTE: Upon completion, the ERP will be included as Appendix A of the SWMP.

Appendix B

Impaired Waters

1. Population at the time of designation: 46,300

   If the population is less than 10,000, then see items #2 and #3 below.

   If the population exceeds 10,000, then see items #4 and #5 below.

2. If the population is less than 10,000, then the MS4 must develop an Impaired Waters Plan (see Part 4.4.1 of the NPDES Permit) including:
   - A list of impaired waters and the pollutant(s) of concern;
   - A map showing the location of the impaired waters and all identified MS4 outfalls located on the impaired waters or occurring within one linear mile upstream of the waters;
   - BMPs that will be implemented to address each pollutant of concern; and
   - A schedule for implementing the BMPs.

3. The Impaired Waters Plan must be submitted with the annual report due February 15, 2015.

   Final completion date/date of submittal to EPD: N/A

4. If the population exceeds 10,000, then the MS4 must develop an Impaired Waters Plan/Monitoring and Implementation Plan (see Part 4.4.2 of the NPDES Permit) including:
   - A list of impaired waters and the pollutant(s) of concern.
   - A Monitoring and Implementation Plan, that includes:
     a. Sample location;
     b. Sample type, frequency, and seasonal considerations;
     c. Monitoring implementation schedule;
     d. A map showing the location of the impaired waters and all identified MS4 outfalls located on the impaired waters or occurring within one linear mile upstream of the waters or a schedule for confirming those outfalls; and
     e. Description of proposed BMPs.
   - Description of the method used to annually assess data trends for each pollutant of concern.

5. The Impaired Waters Plan/Monitoring and Implementation Plan must be submitted with the annual report due February 15, 2015.

   Final completion date/date of submittal to EPD: Dec. 31, 2014/Feb. 15, 2015

NOTE: Upon completion, the Impaired Waters Plan will be included as Appendix B of the SWMP.

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City of Dunwoody, Georgia
BMP A-1
Pamphlet Distribution Procedure

This BMP addresses stormwater runoff and pollution control issues within the City and raises public awareness of these issues. It is important to educate the public on how they can help prevent pollution.

The intent of the program is to use the distribution of educational materials as a means of raising public awareness about issues concerning the impacts of stormwater discharges on water bodies, and also to inform the public about steps they can take to reduce the amount of pollutants entering runoff.

Each year, City staff will distribute a minimum of 250 pamphlets and fliers that cover stormwater pollution topics. These educational materials will be placed in high visibility community locations that are accessible to the public. The materials will also be available on the City's website and may be tracked as necessary to meet distribution goals. Copies of the materials distributed, as well as the number distributed and the distribution location, will be provided in each annual report.

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City of Dunwoody, Georgia
BMP A-2
Article Publication Procedure

This BMP addresses stormwater runoff and pollution control issues within the City and raises public awareness of these issues through the publication of articles related to these topics. The intent of the program is to update the public on service opportunities and local stormwater issues.

The Communications Director oversees article publications on the City's website as well as any other City advertisements. MS4 staff coordinates with the Communications Director each year to post at least two articles or advertisements on the City's website or display at least two posters or informational signs in key public areas related to stormwater.

Copies of any articles, advertisements, posters or informational signs published or displayed during the reporting period will be provided in that period's annual report.

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City of Dunwoody, Georgia
BMP A-3
City Newsletter Procedure

The intent of the program is to use subscription-based newsletters to update the public on local stormwater issues or policies and how to avoid becoming a contributor to stormwater pollution. This BMP helps to empower citizens to make informed choices and understand what actions can be applied to support the health of local streams.

One newsletter email covering local stormwater-related issues will be sent to all subscribed community members every year. The public can subscribe to the City newsletter emails by submitting the requested information on the City's website. Newsletter emails are sent out and managed by the Communications Director.

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City of Dunwoody, Georgia
BMP A-4
Public/Government Official Presentations Procedure

This BMP addresses stormwater runoff issues that arise as a result of construction runoff and/or the addition of impervious area and how different development choices can affect downstream communities. Topics including the effect of increased slopes, the necessary use of flood management structures (detention/retention ponds) and residential site selection are all relevant to public education. Using hands-on activities and visual demonstrations to present these concepts to the public is an important step in promoting sustainable site design and development practices.

The intent of the program is to present stormwater modeling and sustainable site design concepts to the public using educational demonstrations and hands-on activities. This BMP helps to educate citizens about the ways stormwater affects their daily lives and what design choices can be made to counteract some of the negative impacts that development can have on streams.

One stormwater-related presentation will be given by City staff to the public and/or elected officials every year. Selection of venue will be based on availability of public space and community events taking place. Those who attend the presentation will be asked to sign in as a participant. Presentation description and a list of the attendees, as well as any other documentation of the event (e.g., pictures, summary/outline of material presented) will be provided in each annual report.

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City of Dunwoody, Georgia
BMP B-1
Storm Drain Marker Procedure

One of the primary sources of pollution in our streams is non-point source pollution. Most people do not realize that their daily activities, such as blowing leaves into the street, contribute to the pollution of streams. The public also may not know that when it rains, pollutants that have been spilled or placed on the ground are washed into drains directly connected to local streams. Educating the public about preventing pollution of local streams and providing a way for them to participate in the education process within their community helps to foster mindfulness and ownership among citizens.

The City will purchase storm drain markers that can be attached to catch basins. City MS4 staff will coordinate with any available volunteer groups or interested residents to mark at least 100 storm drains annually.

Volunteers will receive a map of the catch basins to be marked and will be asked to return any provided maps, complete with written comment indicating which structures were marked during the effort. Returned maps will be used to document which storm drains have been marked within the City's inventory. The number and location of marked storm drains will be included in each annual report.

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BMP B-2
Stream Clean-Up Procedure

The objective of a stream clean-up event is to introduce the public to their urban streams, making them aware of this natural resource and how they can make a difference in the health of the streams in their community. Emphasizing the presence of local streams to the public helps to instill a sense of ownership of their community's waterways. Taking pride in local waterways makes it more likely that citizens will support the health of the streams.

Organization of the streamside clean-up will be conducted by a City of Dunwoody staff member. This person will be the primary contact for any interested parties to request additional information about the event and to sign up as volunteers. The event organizer will be responsible for registering volunteers and executing any other activities necessary to hold the event. Site selection will be based primarily on need and accessibility. Suggestions made by the public can be included for consideration when selecting a site for the clean-up event.

The event will be publicized through various means such as on the City's web page, through email blasts, City Newsletters, local volunteering websites and other public venues.

Material removed as part of the stream clean-up event will be bagged and disposed of at the City's expense. The volunteer sign-in sheet and the volume of debris removed during the event, as well as any other relevant details or documentation of the event, will be provided in each annual report

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BMP B-3
Recycling Event Procedure

This BMP addresses the need to provide public access to proper disposal methods for items that are not regularly accepted by the local County trash pick-up or recycling program or that may be detrimental to the environment if disposed of improperly.

At least one recycling event will be hosted annually by the Dunwoody Sustainability Committee as part of the City's Sustainability Initiative. Documentation is provided to the City after the event is held and will be included in each annual report.

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BMP B-4
Pet Waste Stations Procedure

Pet waste stations encourage proper disposal of animal waste while also letting the public know that they are expected to address the waste their pet produces in a responsible manner. Pet waste can be a prominent contributor to the pollution of stormwater runoff if not consistently disposed of properly, especially in residential/suburban settings where increased impervious area meets higher pet-ownership density. Promoting proper disposal of pet waste will help to benefit stream and public health and remind the public that their actions impact the environment.

The implementation of this BMP is an effort to promote responsible pet-owner behavior in regard to the waste their pet creates, to reduce contamination of stormwater runoff within the community and to remind the public that their choices have an impact on the environment.

Pet waste stations will be placed in public areas where domestic animals are allowed and commonly brought by owners. Pet waste stations are serviced by Parks Department subcontractors as part of regular maintenance. A list of public pet waste stations maintained by the City and/or record of the refill bag orders will be included in each annual report.

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BMP C-1
IDDE – Legal Authority Procedure

Illicit discharges are defined as the inclusion of any non-stormwater flows in the MS4. Illegal connections, in most cases, convey illicit discharges to public stormwater infrastructure, but include any unpermitted connection to the MS4. The City of Dunwoody has prohibited these discharges and connections through its Illicit Discharge and Illegal Connection Ordinance (Chapter 32, Article IV, Division 9), based on the model ordinance of the Metropolitan North Georgia Water and Planning District (MNGWPD).

The acceptance of the model ordinance provides the City with the means to investigate reports of illicit discharges and illegal connections within the City and take steps to eliminate them once confirmed.

The IDDE ordinance is reviewed annually by the Community Development Department for changes recommended by the MNGWPD and the ordinance is updated as needed.

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BMP C-2
Outfall Map and Inventory

Maintaining an updated inventory and map of outfalls is useful in determining potential pollution sources and susceptible areas. The inventory and map is also an important tool in scheduling dry weather screenings and ensuring that all outfalls are inspected properly within the 5-year permit cycle.

This BMP provides basis for the City's IDDE Plan, included as part of the City's Stormwater Management Plan as BMP #C-3. The Outfall Inventory serves as an important tool to use when conducting dry weather screening on the identified outfalls in the City. The map and inventory of the outfalls are updated annually by the City's GIS staff and are included in each annual report.

As outfall screenings are performed for the geographical area(s) scheduled to be screened in a given year of the permit cycle, any previously-unknown or newly-added outfalls will be added to the inventory. MS4 and GIS staff will be the parties responsible for updating the City's GIS database accordingly. The most current inventory will be used to create a map, which will be provided in the annual report. The annual report will include the inventory of outfalls, a map of outfalls, total number of outfalls and the number of outfalls added, if any, each year.

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BMP C-3
Dry Weather Screening Procedure

1.0 Introduction

Illicit discharges are unpermitted non-stormwater flows to the stormwater drainage system that contain pollutants or pathogens. Illicit discharges can be direct discharges or dumping to the stormwater system, or can occur through upstream activities that eventually flow to storm drain or drainage channels. Illegal connections are physical connections such as pipes that allow illicit discharges to enter the stormwater system on an intermittent or ongoing basis.

Screening of stormwater outfalls during dry weather is an important tool for investigating potential non-stormwater entries to the storm drainage system. Subsequent identification and elimination of illicit discharges and illegal connections can result in substantial improvements to local water quality.

2.0 Program Description

Screening of stormwater outfalls for illicit discharges is performed during periods of dry weather, which is defined as rainfall of less than 0.1 inch per day for at least 72 hours. This criterion avoids the screening of flows that may have resulted from wet weather (stormwater) events.

Each outfall is to be inspected for flow. When a dry weather flow is observed at an outfall, the following are to be performed on the flow:

1. **Field observations and measurements** – Site descriptions and qualitative observations of physical conditions of the outfall and flow, as well as measurement of several in-situ water quality parameters.
2. **Water Quality Sampling** – Collection of water quality samples for field analysis or laboratory analysis when indicated by the field observations and measurements.

In dry weather outfall screening, the field team is looking for indicators that point to or confirm an illicit discharge or illegal connection. Section 3.5 and 3.6 provide guidance on potential sources of pollution based upon the findings of the screening.
The discovery of a suspected illicit discharge will warrant a more detailed pollutant source identification investigation.

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An outfall is the point where a municipal separate storm sewer system discharges to waters of the State. The City identifies the outfall to be monitored as the lowest downstream point in a storm sewer system. The City may not maintain the storm sewer system continuously upstream from the point that is monitored, but the lowest point in the system is the best location to identify illicit discharges and illegal connections.

The City ensures that field teams performing the dry weather screenings follow the appropriate, EPD-approved procedures. Field teams may consist of a knowledgeable, qualified, professional entity contracted by the City of Dunwoody or an equally capable City staff member.

The annual completion of the Dry Weather Screening and related activities is managed by the City's Stormwater Utility Manager.

3.0 Procedure

3.1 Outfall Screening Locations

There are 938 outfalls identified in the City of Dunwoody. In 2016, the City completed a comprehensive review of the streams in Dunwoody to determine which conveyances should be classified as waters of the State. The North Carolina Division of Water Quality's *Methodology for Identification of Intermittent and Perennial Streams and Their Origins*, Version 4.11 was used in this effort. The use of a standard identification method has allowed the City to confidently determine which discharge locations should receive the designation of outfall.

The City of Dunwoody determines which outfalls will be screened each year based on geographical area. There are nine drainage basins identified in the City of Dunwoody: Ball Mill Creek; Marsh Creek; Perimeter Creek; North Fork Nancy Creek; Nancy Creek Tributary A; Nancy Creek #1; Nancy Creek #2; Chattahoochee; and Crooked Creek. Geographical areas are combined, in whole, in such a way that ensures 100% of the inventoried outfalls within the City are screened during the 5-year permit cycle.

3.2 Outfall Screening Preparation

3.2.1 Preliminary Mapping and Land Use Evaluation

To assist in outfall screening, preliminary mapping and land use evaluation will be completed. Mapping information includes:

- Outfall locations
- Outfall drainage areas
- Commercial and industrial activities in each drainage area

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Field maps are prepared to guide the screening team when appropriate. These maps, at a minimum, should have labeled streets and hydrologic features so field teams can orient themselves.

3.2.2 Field Sampling and Analysis Equipment

Table 1 lists the recommended equipment for dry weather outfall screening. Before undertaking field work, the field team should ensure that all of the necessary equipment is present and in order. Both the pH meter and the conductivity meter should be calibrated at the start of each day. In addition, field test kits should be inspected to ensure that they have sufficient reagents and test strips/discs.

TABLE 1

List of Equipment and Supplies for Dry Weather Outfall Screening

Field Equipment	**Function**
Field maps (with outfall locations, drainage areas, and street information)	Locating outfalls for screening
Field measurement equipment (temperature, pH, conductivity meters)	Measuring field temperature, pH and specific conductivity of dry weather flows
Field test kits	Measuring fluoride, surfactants and fecal coliform
Sample bottles with labels	For collection of grab samples
Sealed, sterile sample bottles with labels	For collection of bacteria grab samples
Grab water sampler (dipper on long pole)	For outfalls/flows that are difficult to reach
Waders and walking stick	For reaching outfalls near a stream or waterbody
Hand-operated vacuum pump sampler	For shallow dry weather flows
Clear tape and applicator	To apply over label
Coolers	For transport of grab samples
Ice / ice packs	To keep samples preserved after collection and during transport from the site
Clipboard or notebook with data collection forms and COC forms / Pens	To document field data and activities
List of outfalls, directions, protocols, and Health and Safety Plan	For reference in the field
Field logbook	To record notes
Permanent marker (extra fine)	Label sample bottles
Cell phone	Communication in the field
Handheld GPS receiver (if applicable)	Determining outfall locations
Digital camera	To document dry weather flow and/or conditions
Flashlight	Recording visual conditions
First Aid Kit	Health and Safety Plan
Disposable gloves, safety shoes, and safety glasses	Health and Safety Plan

3.2.3 Weather Considerations

Prior to any screening field work, check local rain gages to ensure that the conditions are appropriate for dry weather outfall screening. Dry weather is defined as rainfall of less than 0.1 inch per day for at least 72 hours.

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3.3 Outfall Screening Procedures

Figure 1 is an example of a Dry Weather Outfall Screening Form which is used to record the observations and analytical results of the dry weather screening procedures. *Figure 2* is an example of a Data Tracking Form to record Outfall Screenings.

3.3.1 Field Observations and Measurements

Outfall screening is initiated by driving or walking to the outfall location. When an outfall is reached, it should be physically marked or labeled, and the coordinates logged using the GPS receiver (if applicable).

Basic descriptive information is recorded at the top part of the Dry Weather Outfall Screening Form:

- Outfall location
- Outfall ID number
- Outfall type, material and size
- Receiving stream and/or watershed name
- Date and time of screening
- Weather observations
- Staff person(s) undertaking the screening

Digital photographs are taken of the outfall and photo numbers recorded on the screening form.

Physical observations of the site are recorded on the screening form under *Field Observations and Measurements*. If no flow is observed during the outfall screening, the "Flow from outfall?" field should be checked "No" and the screening is complete. This result will be counted towards the total number of outfalls screened.

If flow is observed, then "Yes" should be checked and the following physical indicators recorded. Each of these observations associated with flowing outfalls may predict the presence of an illicit discharge or illegal connection:

- **Odor** – Description of any odors that emanate from the outfall and an associated severity score. Since noses have different sensitivities, the entire field team should reach consensus about whether an odor is present and how severe it is. A severity score of one means that it is faint or the team cannot agree on its presence or origin. A score of two indicates a moderate odor within the pipe. A score of three is assigned if the odor is so strong that the field team smells it a considerable distance away from the outfall.

- **Color** – The visual assessment of the discharge color. The intensity of color is ranked from one (slightly tinted) to three (clearly visible in the flow). The best

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way to measure color is to collect the discharge in a clear sample bottle and hold it up to the light. Field teams should also look for downstream plumes of color that appear to be associated with the outfall.

- **Turbidity** – The visual estimate of the turbidity of the discharge, which is a measure of the cloudiness or opaqueness of the water. Turbidity is ranked from one (slight cloudiness) to three (opaque). Like the color observation, turbidity is best observed using a clear sample bottle. The field team should also look for turbidity in the plunge pool below the outfall, and note any downstream turbidity plumes that appear to be associated with the outfall.

- **Floatables** – The presence of any floatable materials in the discharge or the plunge pool below. Sewage, oil sheen or film, and suds are all examples of floatable indicators. [Note that for dry weather screening, trash and debris are not considered indicators of an illicit discharge or illegal connection.]

Upon completing the physical observations, measure temperature, pH, and specific conductivity of the dry weather flow (either in-situ or using a sample bottle), and record the readings on the screening form. The screening and sampling must be conducted in the outfall of the discharge itself, not the stream. The City must screen every outfall with flow for fluoride and surfactants/detergents.

3.3.2 Water Quality Sampling

Water quality sampling of a dry weather flow is performed to look for chemical indicators which may detect, characterize or confirm the presence of an illicit discharge or illegal connection. Water quality sampling is required for a dry weather flow that meets any of the following criteria:

- Visible sewage or sewage odor
- Physical indicator of potential illicit discharge (color, odor, turbidity or floatables)
- pH lower than 6.5 or higher than 7.5
- Specific conductivity greater than 300 µmho/cm

Sampling may be undertaken either using field test kit equipment or by collecting grab samples for laboratory analysis. Fecal coliform samples must be stored in a cooler with ice and delivered to the laboratory within six hours of sampling. Water samples should be tested for the following parameters:

- Fluoride
- Surfactants (detergents)
- Fecal coliform – if conductivity reading is consistently greater than 300 µmho/cm,

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3.3.2.1 Field Sampling and Analysis

Field test kits with appropriate reagents, test strips/discs, and sampling equipment should be used. The test kits must have the ability to detect fluoride within the range 0 to 2.00 g/L and surfactants within the range 0 to 3.0 mg/L.

Follow the kit manufacturer's procedures for obtaining a test sample and completing the field analysis. Record the field analysis results on the screening form.

Dry weather screening samples must be taken from the outfall flow itself, not from the receiving stream. If there is not enough flow from the outfall for an adequate sample, then a container or bucket must be used to collect a sample to take readings. The bucket must be rinsed twice with flow from outfall and readings taken on the third fill. All probes should be washed with distilled water before and after a reading is taken. Testing equipment must be able to detect values as low as 0.2 mg/L for fluoride and surfactants/detergents.

3.3.2.2 Grab Samples

Grab samples and subsequent laboratory analysis may be performed in lieu of field sampling for one or more of the water quality parameters. Grab samples should be analyzed using EPA-approved laboratory analysis methods.

3.3.2.3 Grab Sample Collection

Grab samples must be taken from the outfall flow itself, not from the receiving stream. In many cases, the sample container itself can be used to collect the sample. Less accessible outfalls will require the use of poles and buckets to collect the grab sample. A pre-measured cut-off milk jug can be used to capture shallow flows from the outfall. To ensure that the manual grab samples are representative, the following procedures should be followed:

- Do not open sample bottle until sample is to be actually collected.
- Use gloves at all times when handling sampling bottles.
- Take the grab from the horizontal and vertical center of the outfall.
- Make sure not to disturb any sediments or benthic growth in the outfall.
- Transfer samples into proper container (e.g., from bucket to sample container).
- Fecal coliform grab samples must be collected directly into the sterile sample container.

All of the equipment and containers that come into contact with the sample should be cleaned in order to avoid contamination and be non-reactive to prevent leaching of pollutants.

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3.3.2.4 Grab Sample Handling

The grab sample bottle type, preservation requirements, and holding time requirement for those parameters being tested are listed in Table 2. Proper preservation and maintenance of the holding times for each parameter is essential for the integrity of the sampling results. Note that fecal coliform samples have a **short holding time of six hours** and must be returned to the lab for analysis within this time or the results may be unrepresentative of the flow. In addition, fecal coliform samples must be stored in a cooler with ice during this period.

TABLE 2

Modified Handling Requirements for Samples

Parameter	Container Type[1]	Sample Volume (g)	Sample Preservation	Maximum Holding Time
Fluoride	P,G	500ml	Cool, 4ºC	28 days
Surfactants (detergents)	P	500ml	Cool, 4ºC	48 hours
Fecal Coliform[2]	PP,G	100 ml	Cool, 4ºC	6 hours

[1] Polyethylene (P), Polypropylene (PP), Glass (G) – EPA-approved sample containers (40 CFR 136)
[2] In chlorinated waters, dechlorinate the sample with sodium thiosulfate by adding 1 ml of 10% $Na_2S_2O_3$ to the 100 ml sample

3.3.2.5 Grab Sample Identification and Labeling

A sample numbering system should be used to ensure that each sample is uniquely identified in the field and tracked on field data collection forms. The sample numbering should be as follows: ### MMDDYY-HH:MM

Where:

- ### = A unique number for each sample location
- MMDDYY = Month, day, year
- HH:MM = Time in military units

All of the samples collected at the site should be placed in the appropriate sample containers for preservation and shipment to the designated laboratory. Each sample should be identified with a separate identification label. A waterproof, gummed label should be attached to each sampling container. Information to be recorded on the label should include:

- Site name;
- Sample number;
- Analysis to be performed;
- Date and time of collection;
- Preservation used and any other field preparation of the sample; and
- Initials of field crew collecting the sample.

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3.3.2.6 Grab Sample Documentation

A chain-of-custody (COC) form should accompany all samples. See *Figure 3* for a sample COC form. The COC form shall include all of the information provided on the sample label discussed in the preceding section.

The purpose of the COC form is to provide a mechanism for tracking each sample submitted for laboratory analysis. The information on the COC form must be identical to the information of the sample label. A COC form should be prepared by the sample collector for each set of samples submitted for laboratory analysis. The form should be placed in a re-sealable plastic bag (to keep the form dry) and sealed inside each sample cooler. When transferring possession of the samples, the individual relinquishing and receiving samples should sign, date, and note the time on the COC form. This record documents the transfer of custody from the sampler to another person, to/from a secure storage area, and to the laboratory. Copies of the COC forms should be kept for future reference.

3.3.2.7 Analytical Laboratory Coordination and Sample Delivery

The samples should be packed in coolers with ice (or ice packs) to ensure they maintain the required temperature of less than or equal to 4°C during transport to the designated laboratory. Contact the laboratory prior to sampling to assure that the samples will be analyzed within their holding time. Samples may be placed in individual one-gallon resealable bags as a precaution to avoid spilling the sample. All glass bottles should be individually bagged and bubble-wrapped to prevent breakage on the way to the lab. Samples may be placed in a large trash bag inside a cooler (to ensure against the sample leaking) with ice completely covering the samples.

3.4 Quality Assurance/Quality Control

This section describes the elements of the field quality assurance/quality control (QA/QC) program. The overall QA/QC objective for the monitoring program is to ensure that the data collected are of good quality.

3.4.1 Field QA/QC

Field quality control procedures include calibration procedures, field blanks and field duplicates. The field equipment should be calibrated appropriately prior to leaving for the sampling site to ensure proper performance of the equipment. This includes the pH meter, conductivity meter, and the thermometer. The pH meter should be calibrated using two buffers that bracket the expected pH range (typically 4 and 7). The conductivity meter is calibrated by rotating the probe below the surface in a standard Potassium Chloride solution in a circular motion. The readings must be within 10 percent to be acceptable. The thermometers used should be accurate to + 5°C.

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Quality control blanks should be used in the field to determine potential sample contamination during sample collection, handling, shipment, storage, or laboratory handling and analysis. Reagent grade water should be used for the quality control blanks. All reagent waste must be disposed of properly. All reagents must be checked annually and replaced if necessary. A minimum of one field blank for surfactants (detergents) and fecal coliform is required each day with scheduled field screening. For fluoride, a field blank should be used with approximately 10 percent of samples (or as required by the lab).

Field duplicates should be collected on approximately 10 percent of the samples to assess the representativeness of sampling procedures in addition to the normal uncertainty associated with the analysis.

3.4.2 Laboratory QA/QC

The laboratories should follow Georgia EPD- approved methods and routinely perform quality control checks during laboratory analysis, including calibration standards, blanks, laboratory control samples, laboratory control duplicate samples, matrix spikes, and matrix spike duplicates. Spikes and duplicates should be performed on a minimum of 10 percent of the samples and should meet data quality objectives established by the client.

3.5 Evaluating Dry Weather Screening Results

3.5.1 Background

Dry weather screening of stormwater outfalls is an important tool used to evaluate non-stormwater flows in the storm drainage system. Effectively evaluating and interpreting dry weather screening results and data is the first step in identifying and tracing a potential illicit discharge or illegal connection.

3.5.2 Field Observations

Field observations of a dry weather flow include odor, color, turbidity and floatables. These parameters are qualitative indicators detected by visual inspection and smell, and require no measurement equipment. They are important in evaluating a dry weather flow for a potential illicit discharge, and may confirm the most severe or obvious discharges.

Table 3 lists the field observation parameters, along with potential sources for a number of observed conditions.

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3.5.3 Field Measurements and Water Quality Sampling Results

Field measurements and water quality sampling provide additional information which may detect, characterize or confirm an illicit discharge or illegal connection. Temperature, pH and conductivity measurements are completed in the discharge flow using probes or other equipment that is calibrated at the beginning of each field testing day. Water quality sampling for the presence of fluoride, surfactants and fecal coliform is performed either in-field using test kit equipment or by collecting grab samples for laboratory analysis.

Table 4, Interpretation of Field Measurements and Water Quality Sampling Parameters, lists the various parameters included in the dry weather screening protocol along with benchmarks and guidance on evaluating results. *Figure 4* provides a flow chart which can be used to identify illicit discharges based upon findings.

3.5.4 Ranking the Potential for an Illicit Discharge

Based upon the screening results, all outfalls should be ranked for their potential for an illicit discharge:

- Those outfalls without flow or that appear to be from an uncontaminated source would be ranked “Unlikely or No Flow.” Every outfall with flow will be sampled for pH, conductivity, fluoride, and surfactants/detergents.

- Any flow that shows two or more suspect field observation or chemical indicator that falls outside of the range of normal stormwater or groundwater should be marked as “Possible” for an illicit discharge. If the screening reveals values outside the accepted range, source tracking must be initiated or a re-screening must be conducted within 24 hours, at least four hours after the first. If the re-screening still reveals values outside of the accepted range, the City will initiate source tracing procedures.

- The presence of one or more field observations with a rank of two or three, or chemical indicators far outside of the range of normal stormwater or groundwater should be ranked “Suspect.”
- Any flow that is clearly an illicit discharge should be listing as “Obvious or Confirmed.”

- The acceptable ranges for Dry Weather Screening should be:
    - pH (≥ 6 – 9 ≤)
    - Fluoride (≤ 0.2 mg/l)
    - Surfactants/Detergents (≤ 300 µmho/cm)

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TABLE 3

Physical Observations and Potential Sources

Parameter	Observations	Potential Source(s)
Odor	Sewage	Sanitary sewer; septic tank discharges
	Sulfur (rotten eggs)	Industrial discharge (sulfides and/or organics); sanitary sewer; septic tank discharges
	Oil / gasoline	Facilities associated with vehicle maintenance and operation; petroleum product manufacturing or storage; industrial discharge
	Rancid / sour	Food preparation facilities (restaurants, hotels, etc.)
Color	Orange / rust	Construction site or unstabilized soil (eroded soil and clay)
	White / milky	Sanitary sewer; septic tank discharges; residential or commercial washwater; concrete or stone operations; fertilizer
	Grey	Residential or commercial washwater; dairies
	Red	Meat packers
	Yellow	Industrial discharge
	Green	Industrial discharge; Facilities associated with vehicle maintenance and operation (antifreeze)
	Brown / black	Industrial discharge
Turbidity	Cloudy	Sanitary sewer; septic tank discharges; residential or commercial washwater; concrete or stone operations; fertilizer; industrial discharge
	Opaque	Food preparation facilities (restaurants, hotels, etc.); industrial discharge
	Silty / Muddy	Construction site or unstabilized soil (eroded soil and clay)
Floatables	Sewage	Sanitary sewer; septic tank discharges
	Petroleum (oil sheen)	Facilities associated with vehicle maintenance and operation; petroleum product manufacturing or storage; industrial discharge
	Suds	Sanitary sewer; septic tank discharges; residential or commercial washwater

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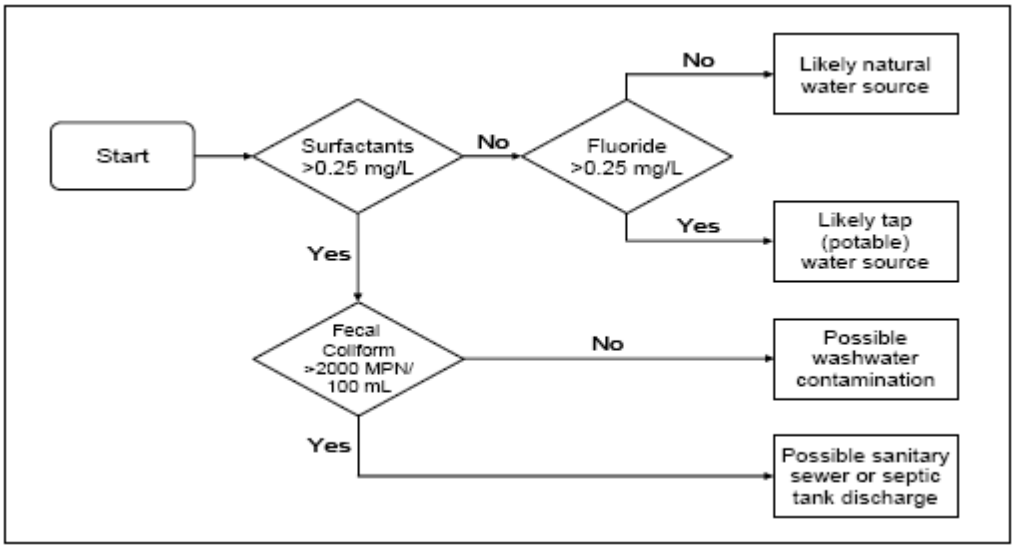
Table 4

Interpretation of Field Measurements and Water Quality Sampling Parameters

Parameter	Benchmarks	Evaluation
Temperature	Temperature should be near or below ambient conditions for groundwater or stormwater runoff.	Higher than ambient temperature may indicate stream condensate or industrial process water.
pH	The normal pH range for stormwater runoff is between 6 and 9, with 7 being neutral.	pH is a relatively good indicator of liquid wastes from industries, which can have very high or low pH values (ranging from 3 to 12). The pH of residential and commerical washwater tends to be in the range of 8 or 9.
Conductivity	Stormwater should have a low conductivity (under 300 µmho/cm).	Conductivity greater than 300 µmho/cm indicates a high dissolved solids content in the flow which may be from illicit discharge or illegal connection.
Flouride	The normal flouride range for stormwater is less than 0.2 mg/l	Presence of flouride indicates the presence of potable (treated) water. Flouride can often be used to separate treated potable water from untreated water sources, such as stormwater, groundwater, or non-potable industrial waters.
Surfactants (detergents)	The normal surfactants (detergents) range is less then 300 µmho/cm	This parameter is associated with cleaning/washing operations and may indicate residential or commercial wastewater.
Fecal Coliform	Fecal coliform is an indicator of fecal bacteria from warm-blooded animals.	Its presence in high numbers often indicates contaminiation with sanitary waste, although high levels of pet waste may also produce similar results.

Figure 4

Flowchart to Identify Illicit Discharges using Outfall Screening Sampling Results



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3.6 Following Up on Potential Illicit Discharges

All outfalls ranked as possible, suspect or obvious illicit discharges require follow-up actions and activities to determine the specific source(s) of contamination. The EPD requires the screening of every outfall with flow for pH, conductivity, fluoride, and surfactants / detergents. If the screening reveals values outside the acceptable range, source tracing must be initiated or a re-screening must be conducted within 24 hours, at least four hours after the first screening. If the screening still reveals values outside the accepted range, the City must initiate source tracing procedures. There are a variety of methods for illicit discharge source identification, including:

- **Mapping Analysis** – Evaluation of the drainage area, land uses and properties above the outfall including the route of the storm drainage system and locations of storm drains. This enables local staff to predict the likely locations of illicit discharges and illegal connections. Geographic Information Systems (GIS) are a useful tool for identifying illicit discharges through mapping analysis.

- **Drainage Area Investigation –** A windshield survey or more detailed property inspections in the drainage area that has the illicit discharge. These inspections are often performed following a mapping analysis.

- **Piping Schematic Review** – Examination of building plans and plumbing details for potential sites where improper connections to the storm drainage system may have occurred.

- **Smoke Testing** – Testing of pipes to locate connections by injecting a non-toxic vapor (smoke) into the system and following its path of travel.

- **Dye Testing** – Addition of colored dye to the drain water in suspect piping and subsequent surveillance to determine if dyed water appears in the storm drain system, thus indicating an illegal connection.

- **Septic System Investigation –** Low density residential watersheds may require special investigation methods when failing septic systems are suspected. Homeowner surveys, surface investigations and infrared photography have all been used successfully to identify problem septic system facilities.

The appropriate method for any given outfall or area will be heavily dependent on the watershed and land use conditions, drainage system characteristics, available resources and the nature of the discharge and screening results.

Once an illicit discharge is located, enforcement actions will be implemented in accordance with the Enforcement Response Plan (Appendix A).

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4.0 References

"Illicit Discharge Detection and Elimination – A Guidance Manual for Program Development and Technical Assessments." Center for Watershed Protection. 2004.

"District-Wide Watershed Management Plan Standards and Methodologies for Surface Water Quality Monitoring." Metropolitan North Georgia Water Planning District, March 2007.

"Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems – A User's Guide. EPA/600/R-92/238," U.S. Environmental Protection Agency, January 1993.

"NPDES Stormwater Sampling Guidance Document. EPA-833-92-001," U.S. Environmental Protection Agency, July 1992.

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Figure 1 – Dry Weather Outfall Screening Form

Dry Weather Outfall Screening Form	
Name of City or County:	**Data Sheet Number:**
Date of screening (MM/DD/YY):	Time of screening:
Weather conditions:	
Sampling performed by:	

Outfall Description	
Outfall Location:	Outfall I.D. Number:
Outfall Type/Material: ❒ Closed Pipe (circle): RCP CMP PVC HDPE Other: _____ ❒ Open Channel (circle): Concrete Earthen Grassy Other: _____	Outfall Diameter/Dimensions:
Receiving stream and watershed name:	
Land use/industries in drainage area:	
GPS Coordinates:	Photo numbers:

Field Observations and Measurements
Flow from outfall? ❒ Yes ❒ No Flow Description: ❒ Trickle ❒ Moderate ❒ Substantial
Odor: ❒ None ❒ Sewage ❒ Sulfide (rotten eggs) ❒ Petroleum/gas ❒ Rancid/sour ❒ Other _____ Relative severity: ❒ 0-None ❒ 1-Faint ❒ 2-Easily Detected ❒ 3-Noticable from a distance
Color: ❒ Clear ❒ White ❒ Gray ❒ Orange/Rust ❒ Red ❒ Yellow ❒ Green ❒ Brown/Black ❒ Other Relative severity: ❒ 0-None ❒ 1-Faint ❒ 2-Clearly visible in bottle ❒ 3-Clearly visible in flow _____
Turbidity: ❒ None ❒ Cloudy ❒ Opaque ❒ Silty ❒ Muddy ❒ Other _____ Relative severity: ❒ 0-None ❒ 1-Slight cloudiness ❒ 2-Cloudy ❒ 3-Opaque
Floatables: ❒ None ❒ Sewage ❒ Petroleum (oil sheen) ❒ Suds ❒ Other _____ Relative severity: ❒ 0-None ❒ 1-Few/slight ❒ 2-Some ❒ 3-Heavy
Flow Temperature (°C):
Flow pH: pH meter calibrated? ❒ Yes ❒ No
Flow Conductivity (µmho/cm): Conductivity meter calibrated? ❒ Yes ❒ No

Water Quality Sampling			
Field Test Kit Manufacturer:		Model:	
Fluoride (mg/L):		**Fecal Coliform (MPN/100ml):**	
Surfactants (mg/L):		**Analysis Comments:**	
Grab sample for lab? (fluoride/surfactants) ❒ Yes ❒ No		Bacteria Grab sample for lab? (fecal coliform) ❒ Yes ❒ No	
Grab Sample ID:		Bacteria Grab Sample ID:	

Outfall Potential for Illicit Discharge:

❒ **Unlikely - or- No Flow** ❒ **Possible (presence of two or more indicators)**

❒ **Suspect (one or more indicators with severity of 2 or 3)** ❒ **Obvious - or- Confirmed**

NOTE: Water quality sampling (using a field test kit and/or grab samples) is required for a dry weather flow that meets any of the following criteria: Visible sewage or sewage odor; physical indicator of potential illicit discharge (color, odor, turbidity or floatables); pH lower than 6.5 or higher than 7.5; or specific conductivity greater than 300 µmho/cm.

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Figure 2 - Dry Weather Outfall Screening – Data Tracking Form

Date	Outfall I.D. Number	Flow? (Y/N)	Odor (describe)	Color (describe)	Turbidity (describe)	Floatables (describe)	Temp (ºC)	pH	Conductivity (µmho/cm)	Fluoride (mg/L)	Surfactants (mg/L)	Fecal Coliform (MPN/100ml)	Follow-up Actions

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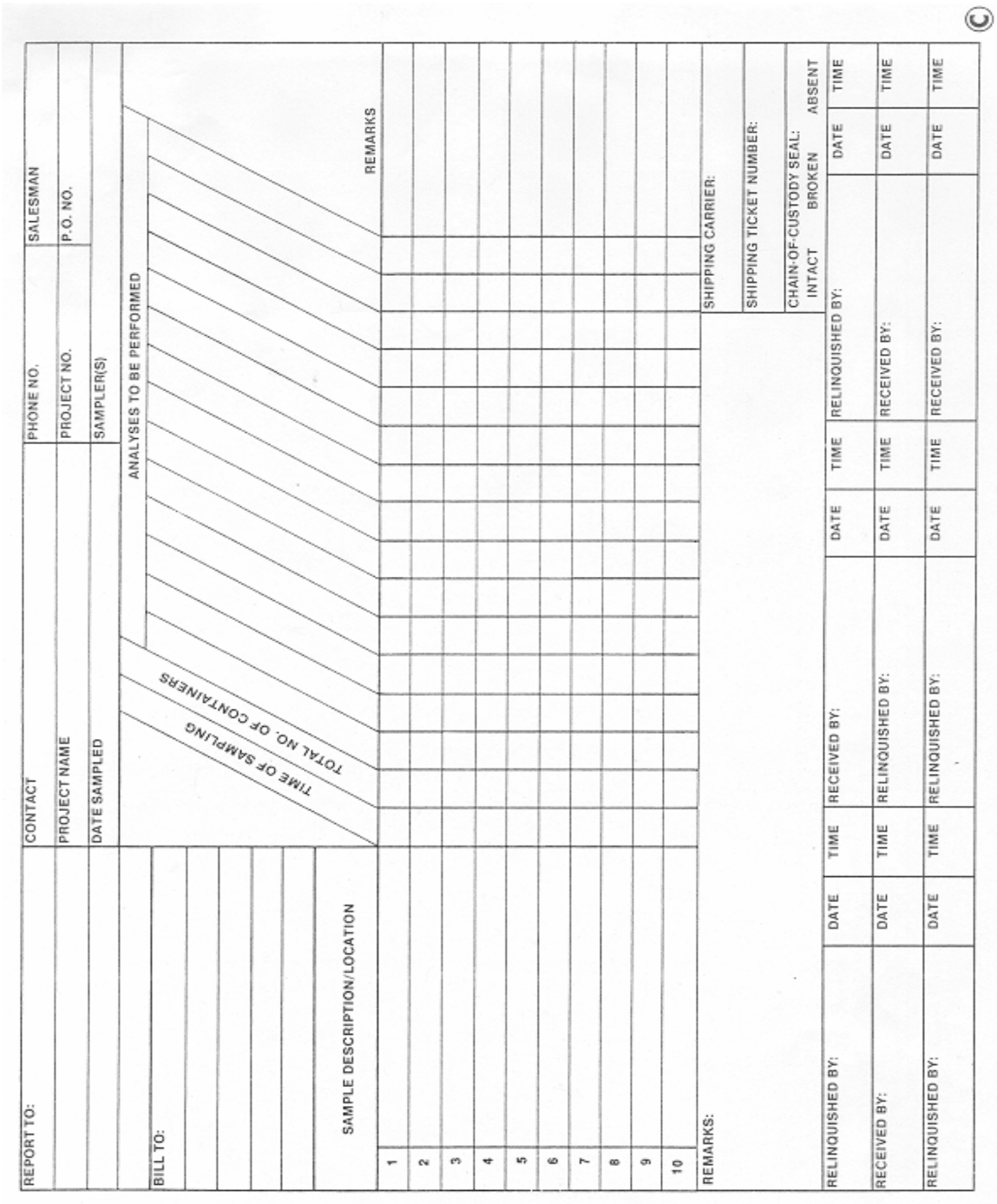
Figure 3 – Sample Chain of Custody Form



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City of Dunwoody, Georgia
BMP C-4
Illicit Discharge Education Procedure

Illicit discharges are unpermitted non-stormwater flows to the stormwater drainage system. Illicit discharges can be direct discharges or dumping to the stormwater system, or can occur through upstream activities that eventually flow to storm drain or drainage channel. Illegal connections are physical connections, such as pipes, that allow illicit discharges to the stormwater system on an intermittent or ongoing basis.

Local business owners, residents and government employees can be unaware of this issue. The purpose of this BMP is to inform the public, government employees and business owners of the hazards associated with illicit discharges to the stormwater system.

Educational materials in the form of pamphlets or fact sheets that cover common sources of illicit discharges, the effect these discharges have on environmental health and the different methods to prevent them will be distributed by City MS4 staff to public locations that are highly visible and accessible to the target audiences within the community. 100 of these pamphlets or fact sheets will be distributed according to this criteria each year. Information regarding the distribution location(s) and number of educational items distributed, as well as copies of these materials, will be provided in each annual report.

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City of Dunwoody, Georgia
BMP C-5
Complaint Response – Illicit Discharge

Upon receipt of a Complaint, the City will:

- Maintain a log of the complaints received including date, type of complaint and status of the complaint
- Investigate the complaint
- Determine whether the problem is a public or private responsibility
- Notify responsible party of corrective measures needed
- Notify other government agencies as needed
- Ensure corrective measures are taken as soon as possible
- Close the complaint upon resolution

The log of complaints and any other relevant documentation will be summarized and provided in each annual report.

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City of Dunwoody, Georgia
BMP D-1
Construction Site Stormwater Runoff Control – Legal Authority Procedure

Excessive soil erosion and, as a result, sedimentation can take place during land-disturbing activities. For this reason, the City requires control measures for erosion, sedimentation and pollution be installed when such activities are taking place. These measures must be incorporated into the erosion, sedimentation and pollution control plans. The requirement checks to ensure that these sources of pollution are effectively controlled during all phases of a land-disturbing project.

The City has an existing Erosion and Sediment Control Ordinance and a Litter Control Ordinance to control construction site waste (Chapter 16, Article II, Division 3). This BMP provides the legal means to control erosion and sediment on construction sites, as well as site-generated waste.

The City will review the existing Erosion and Sediment Control Ordinance and the Litter Control Ordinance annually to ensure that it is compliant with the permit. If updates or revisions are needed, the City will modify the ordinances so that they are compliant. Any revised documents will be included in the annual report.

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City of Dunwoody, Georgia
BMP D-2
Site Plan Review Procedure

1.0 Introduction

The development of procedures for site plan review helps to ensure that construction sites comply with the City of Dunwoody's ordinance requirements and to ensure that employees who issue land disturbance permits verify that the construction site operator has obtained all necessary permits.

2.0 Program Description

The intent of this program is to outline a consistent procedure to guide the review process of site plans that propose 1.0 acre or more of land disturbance. Following a set of procedures for construction activities of this size can help to reduce the amount of pollutants entering stormwater runoff. Instituting standard requirements for plans submitted to the City also serves to highlight the need for accountability and professionalism in site operators.

This BMP also includes the City's Linear Transportation Feasibility Program, included in Appendix C. The City plans to have this Program developed and submitted to the EPD for approval in September of 2018.

3.0 Procedure

Procedures for site plan review are outlined in Chapter 27, Article V, Division 10 of the City's Code of Ordinances. A project requires an LDP when 1.0 acre or more will be disturbed. Before an LDP can be issued, site plans for the project must be submitted, reviewed and approved in accordance with Chapter 16, Article II, Division 3.
The Community Development Department will track all site plans received during the reporting year. Any identifying information regarding these site plans and their individual review status will be provided in the annual report.

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City of Dunwoody, Georgia
BMP D-3
Inspection Program Procedures

Inspections help to establish a permit holder's accountability to meet the requirements of their permit and limit pollutants leaving the permit site. Inspecting City-permitted land disturbance sites also provides the opportunity to verify that only permitted structures are being installed and that the approved site plan is being followed. Inspections also serve to reduce the number of permit violations on construction sites.

Inspections of construction sites are conducted in accordance with the Georgia Soil and Water Conservation Commission (GSWCC). All projects with an active LDP are inspected to ensure that proper E&SC measures have been installed and maintained according to the requirements of the GSWCC and the City's Stormwater Management Ordinance.

Inspections are conducted by qualified personnel within the City's Community Development Department. These individuals should be certified in the fundamentals of E&SC. The lead inspector is required to have a Level II certification as a plan reviewer. Inspections are conducted following the Field Manual for Erosion and Sediment Control in Georgia ("Green Book"). Inspections and enforcement actions are described in the Code of Ordinances Sec. 16-151 – Inspections and Enforcement. Inspections will be tracked and reported on in each annual report.

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City of Dunwoody, Georgia
BMP D-4
Enforcement Procedures

The purpose of this BMP is to implement the procedures outlined in the Enforcement Response Plan (ERP), required by Part 4.3 of the permit, for E&SC violations.

Enforcement actions for E&SC violations are carried out by the City's Code Enforcement Officials within the Community Development Department. Enforcement actions are taken after violations are observed during routine inspections or when responding to citizen complaints.

E&SC violations found at construction sites will be documented throughout the reporting period and submitted in each annual report. The number and type (NOV, SWO, Citation) and status (pending, resolved) for each violation will also be included in the report.

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City of Dunwoody, Georgia
BMP D-5
Complaint Response Procedure

E&SC complaints are either received from private citizens or are generated by staff. Complaints of this nature are directed to the City's Code Enforcement Officers who operate within the Community Development Department. Information on complaints received and investigated during the reporting period (complaint date, type of complaint, complaint status) will be provided in each annual report.

The implementation of this BMP supports the prompt correction of E&SC pollution sources.

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City of Dunwoody, Georgia
BMP D-6
Certification Procedure

The intent of this BMP is to have staff members who are involved in MS4 activities or construction subject to the Construction General Permits (CGPs) trained and certified in accordance with the rules adopted by the Georgia Soil and Water Conservation Commission (GSWCC).

Staff that is certified and trained in accordance with the rules adopted by the GSWCC possess a greater level of awareness of E&SC requirements, thereby making the City a more effective regulator of its ordinances. The required and current certifications of City staff involved in MS4 activities will be provided in each annual report.

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City of Dunwoody, Georgia
BMP E-1
Stormwater Management Ordinance – Legal Authority Procedure

The City's Stormwater Management Ordinance implements the latest GSMM. The date of adoption by the City of Dunwoody was January 26, 2016. The required adoption date was December 31, 2016. The ordinance serves as the City's regulatory authority to address post-construction runoff from new development and redevelopment projects. The ordinance supports the long-term operation and maintenance of BMPs installed as part of these requirements.

This BMP provides the City of Dunwoody with the legal authority to enforce the standards of the Stormwater Management Ordinance as adopted in Sec. 16-226 of the City of Dunwoody, Georgia Code of Ordinances. The Ordinance provides standards within the community to control the release of stormwater from construction sites.

The Stormwater Management Ordinance will be evaluated on an annual basis by the Community Development Department. If needed, modifications will be made to the existing ordinance so that it complies with current laws and regulations. If the ordinance is revised, a copy of the updated ordinance will be submitted with the following annual report.

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City of Dunwoody, Georgia
BMP E-2
Post-Construction Stormwater Management – Inventory Procedure

Maintaining an updated inventory of existing and new post-construction stormwater management structures enables the City to schedule regular inspections for all of these facilities, which leads to maintenance occurring in a timely manner. The proper maintenance of these facilities will allow BMPs to operate as intended, reducing peak runoff and erosion.

The post-construction stormwater management inventory consists of all publicly-owned structures of that type and all privately-owned post-construction stormwater management structures designed after Dec. 9, 2008, as well as any other structures of this type that the City maintains.

The inventory includes information regarding the number and type of the different post-construction structures, as well as, whether the facility is publicly-owned or privately-owned. The inventory also includes documentation, such as maintenance agreements, that the City holds with private pond owners, which will be organized in electronic folders. An excel spreadsheet will be utilized to track inspection records received. When new structures are completed or existing structures are identified, the inventory is updated by GIS staff. The updated inventory of post-construction stormwater management structures is included in each annual report.

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City of Dunwoody, Georgia
BMP E-3
Post-Construction Stormwater Management Inspection Program Procedure

The City's Post-Construction Stormwater Management Inspection Program provides a schedule for the inspection of public and private facilities covered under BMP E-2. Regular inspections support the long-term functionality of these facilities and help to prevent flooding, erosion and degradation of local waterways. The inspection reports are received per the maintenance agreements held with the City.

For those post-construction stormwater management structures owned by the City, the appropriate form in the current Georgia Stormwater Management Manual (GSMM) will be used during inspections. For private structures, maintenance agreements will stipulate that the responsible party must also use the appropriate inspection form from the latest GSMM. Deficiencies found during the inspection of any post-construction facility will be repaired as soon as practicable or as funding is available.

Operators of privately-owned facilities are required to submit their inspection records to the City as specified in existing maintenance agreements held with the City. The inspections received will be provided in each annual report. In the case of delinquent reports, the City will direct the responsible entity to comply with the inspection requirements. A timeframe for completion and submittal will be provided by the City. Any reports that are still outstanding at the end of the reporting year will be documented as such by the City in its annual report to the EPD.

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City of Dunwoody, Georgia
BMP E-4
Post-Construction Stormwater Management - Maintenance Program Procedure

The maintenance program provides for proper maintenance of public and private stormwater management structures. The maintenance program is managed by both the Public Works Department and the Community Development Department.

For each post-construction stormwater management structure being inspected, the City will use the appropriate inspection form in the current Georgia Stormwater Management Manual (GSMM). For structures not maintained by the City, maintenance agreements will stipulate that the responsible party must also use the appropriate inspection form from the latest GSMM. Deficiencies found during the inspection of post-construction facilities will be repaired as soon as practicable or as funding is available.

Having a maintenance program in place for these structures eliminates potential pollution sources and ensures the proper functioning of facilities. Documentation of maintenance activities performed on post-construction facilities during the reporting period will be submitted in each annual report.

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City of Dunwoody, Georgia
BMP E-5
Post-Construction Stormwater Management
GI/LID Structures Inventory Procedure

The GI/LID inventory includes all public and commercial GI/ LID structures installed in the City after December 6, 2012. Existing structures are identified using construction permits and will be included in the GIS database based on as-built information or field surveys.

Any GI/LID structures included in newly-submitted plans will be noted during the plan review process as outlined in the procedures for BMP D-2. Structures will be added to the inventory once installation is verified during the Community Development Departments final inspections.

The inventory of post-2012 public and commercial GI/LID structures will be submitted in each annual report.

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City of Dunwoody, Georgia
BMP E-6
GI/LID Program Procedure

The City is currently developing its GI/LID Program to be submitted to the EPD by February 15, 2020. The program will be implemented by the City upon submission to the EPD.

The City's GI/LID Program will serve as a guidance document for the inclusion of GI/LID elements in public and commercial sites within the City, as well as practices for their long-term operation. Specifically, the program will include the following: procedures for evaluating the feasibility and applicability of different GI/LID techniques; a list of the allowed GI/LID structures within the City; inspection and maintenance procedures for all GI/LID structures within the City, including those owned by the City, those owned by other public entities and privately-owned non-residential structures (i.e., "publicly-owned and commercial structures").

Having procedures in place for the selection of site-appropriate GI/LID structures helps to ensure that the most effective sustainability measures are applied. Providing a clear guide for the long term operation of these GI/LID structures facilitates the maximum benefits from each structure.

The successful installation and operation of GI/LID structures within the City will demonstrate the effectiveness of the BMP.

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City of Dunwoody, Georgia
BMP E-7
GI/LID Inspection and Maintenance Program Procedure

The GI/LID Program is currently being developed and will be implemented upon submittal to the EPD on February 15, 2020. The GI/LID Program will ensure inspections are being conducted on 100% of the GI/LID structures included in the inventory within a 5-year period. Inspections will be completed in accordance with the schedule outlined in the GI/LID Program.

This BMP intends to create an emphasis on the operation and maintenance of GI/LID structures. By requiring public and commercial entities to submit inspection and maintenance records for their GI/LID structures, the City is requiring these entities to be aware of and familiar with the procedures outlined in Dunwoody's GI/LID Program.

Upon submittal of the City's GI/LID Program to the EPD in 2020, documentation for all inspections conducted during each reporting period, and for the number of permittee-owned structures, as well as the percentage of the total permittee-owned structures maintained during the reporting period, will be provided in each annual report. Documentation of the maintenance procedures for non-permittee owned GI/LID structures will be outlined in the GI/LID program.

Receiving records for the inspection and maintenance of private and public GI/LID structures will reflect the effectiveness of this BMP.

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City of Dunwoody, Georgia
BMP F-1
MS4 Inventory Procedure

The City's Municipal Separate Storm Sewer System (MS4) is made up of structures, facilities and natural drainage-ways used for collecting, conveying and/or treating stormwater. It is the City's responsibility to maintain the MS4 in order to ensure that the stormwater system continues to operate as designed.

The inventory is updated annually as new information is obtained or as structures are installed or removed from the MS4. The MS4 components include catch basins, ditches, storm drain pipes and structural stormwater control facilities. The updated inventory will be provided in each annual report.

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City of Dunwoody, Georgia
BMP F-2
MS4 Inspections Procedure

1.0 Introduction

The City's Municipal Separate Storm Sewer System (MS4) is made up of structures, facilities and natural drainage-ways used for collecting, conveying and/or treating stormwater. It is the City's responsibility to inspect the MS4 in order to ensure that the stormwater system continues to operate as designed. A dedicated Inspection Program is essential to Operations and Maintenance. These programs form the basis for maintaining the functionality of the stormwater system.

2.0 Program Description

The publicly-owned Municipal Separate Storm Sewer System (MS4) components will be inspected by the City of Dunwoody. The City inspects each structure in the MS4 inventory at least once every five years. This is accomplished by following an inspection schedule based on geographical area. Inspections conducted within each reporting period will be submitted with the annual report for that period.

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City of Dunwoody, Georgia
BMP F-3
MS4 Maintenance Procedure

1.0 Introduction

The City's Municipal Separate Storm Sewer System (MS4) is made up of structures, facilities and natural drainage-ways used for collecting, conveying and/or treating stormwater. It is the City's responsibility to maintain the City MS4 in order to ensure that the stormwater system continues to operate as designed. An adequate Operation and Maintenance (O&M) program is essential in maintaining the functionality of the system. This document outlines the procedures for conducting maintenance activities on the City's MS4 components. The City conducts maintenance in strict accordance with the City's Extent of Service Policy, which is available on the City Stormwater Website (http://www.dunwoodyga.gov/index.php?section=departments_public_works_stormwater).

2.0 Prioritization

Primary drainage systems include structures where significant harm or damage could occur if the system were to fail. The highest priority would be assigned to those systems that cannot be allowed to fail due to the potential for serious threat of citizen safety, significant damage to habitable structures, or damage to public infrastructure.

Secondary drainage systems include all other drainage systems not classified as a primary system within the City's EOS. A high priority secondary system includes systems that could cause road closures but not necessarily result in loss of access to an area. Other secondary systems include those that result in flooding of non-livable structures (i.e. sheds, storage buildings, etc.) and those that cause nuisance flooding.

2.1 Regular Maintenance

Remedial maintenance is performed based on evidence of system impairment or failure identified through citizen complaints or City staff inspection. Repairs are scheduled based on priority, responding first to the highest priority issues. Priority is granted, in order of highest to lowest, to issues fitting the following descriptions: issues that pose an immediate danger or threat to public safety; issues that are capable of degrading to a

dangerous or inoperable condition in the near future; and, finally, issues that do not pose a threat to safety or that are cosmetic in nature. Maintenance is performed on an as-needed basis and are logged through a work order system. A summary of these work orders will be provided in each annual report as documentation for maintenance activities.

2.2 Projects

When the scope of repairs for an issue exceeds the capabilities of regular maintenance equipment, the repair work is considered a Capital Project. These projects are generally high in cost and are prioritized in the same manner as regular maintenance projects as described above. Capital Projects take place as funding is available.

2.3 Funding

The Mayor and City Council may allocate funding for stormwater projects during each budget cycle. Projects will be recommended for implementation based on the determination of City responsibility, by category, and by approved funding level.

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City of Dunwoody, Georgia
BMP F-4
Street and Parking Lot Cleaning

Permittees must conduct street and parking lot cleaning by either street sweeping a minimum of 1 mile of road annually or by performing an alternative street cleaning activity such as trash and litter removal. The City performs street sweeping on at least 1 mile of publically-owned streets every year to meet the requirements of this BMP.

The street sweeping activities are documented and reported annually to include the number of miles cleaned, tons of litter removed or other measurable parameters related to these activities. Collecting this waste is done with the intent to reduce the amount of pollutants entering the MS4.

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City of Dunwoody, Georgia
BMP F-5
Employee Training Procedure

Employees involved in park and open space maintenance, fleet and building maintenance, new construction, land disturbance and/or stormwater system maintenance all benefit highly from training on good housekeeping at municipal facilities, illicit discharge detection, construction site inspections, and green infrastructure.

Training of this type increases employee awareness of the potential water quality impacts their job actions may cause and teaches ways to prevent pollution. The goal of this type of training is to reduce the amount of pollutants in runoff from municipal operations.

City MS4 staff will conduct at least one employee training session every year that focuses on the aforementioned topics. Training materials, attendance records and any other applicable documentation will be provided in each annual report.

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City of Dunwoody, Georgia
BMP F-6
Waste Disposal Procedure

In the process of cleaning the municipal separate storm sewer system, dirt and debris is removed from the system. Since the municipal stormwater system drains to streams, the material removed from the system needs to be disposed of in such a way that the material is effectively eliminated as a source of pollution to these waterways.

The City has two primary methods of cleaning the municipal system: structure cleaning and system repair or replacement projects. Both activities generate waste that needs to be disposed of properly.

Waste material is hauled away and disposed of off-site in a manner that ensures this material does not re-enter the MS4 or become a source of pollution elsewhere. The estimated volume or weight removed during these maintenance activities and repairs will be documented and submitted in each annual report.

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City of Dunwoody, Georgia
BMP F-7
Post-Construction Stormwater Management - New Flood Management Projects Procedure

Projects that control flooding offer an opportunity to address the water quality of the runoff that drains to local streams. This BMP provides for the consideration of water quality improvements as a part of any flood control project. These structures are assessed for water quality benefits at the design stage.

During the design of structural flood control projects, different types of post-construction stormwater management facilities will be evaluated to determine if they can be added to the project to improve water quality.

The Community Development Department reviews all submitted development plans to determine compliance with the water quality requirements. All plans are reviewed in accordance with the latest edition of the Georgia Stormwater Management Manual. The number of plans reviewed in the current reporting period where flood management projects were assessed for water quality impacts will be provided in that period's respective annual report.

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City of Dunwoody, Georgia
BMP F-8
Post-Construction Stormwater Management - Existing Flood Management Projects Procedure

Projects that control flooding offer an opportunity to address the water quality of the runoff that drains to local streams. The City owns and operates at least 5 existing flood management facilities. A list of these public ponds is submitted annually as part of BMP E-2. The intent of BMP F-8 is to provide for the assessment of at least one of these facilities every year for potential retrofits to improve water quality.

Assessments will take place alongside the regularly-scheduled detention pond inspections as outlined in BMP E-3 or by MS4 staff within the Public Works Department when responding to citizen complaints about such structures. Documentation of assessments and any retrofitting activities performed during a reporting period will be provided in that period's annual report.

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City of Dunwoody, Georgia
BMP F-9
Municipal Facilities Procedure

Identifying facilities and practices that may lead to pollution of stormwater, improves the City's ability to conduct meaningful inspections and include practices aimed at reducing or eliminating the pollutant in its daily operations.

The Public Works Department will coordinate with GIS staff every year to update the City's inventory of municipal facilities with the potential to cause pollution. The inventory will be submitted with each annual report.

All municipal facilities included in this inventory will be inspected at least once over the 5-year permit cycle, with a minimum of 5% of the inventoried structures to be inspected annually. Documentation of these inspections will be provided in each annual report.

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Appendix A
Enforcement Response Plan

1.0 Introduction

The Enforcement Response Plan outlines enforcement responsibilities, methods and procedures that ultimately protect public and environmental health, safety and welfare as well as improves water quality, preserves and enhances valuable, natural resources. The ability to receive, log and follow up on violations and enforcement actions in a timely manner is important to the successful operation of the MS4.

2.0 Program Description and Procedures

The City enforces water quality and quantity regulations through City Ordinances (See Attachments A and B). In accordance with City Ordinances, the progressive enforcement steps include 1) Notice of Violation, 2) Issuance of Citation and 3) Failure to Appear Warrant (only if accused does not appear in court as stipulated). Detailed descriptions of ordinances, citations, enforcement mechanisms, and time frames are included in Chapter 16 and Chapter 32 of the Dunwoody Code of Ordinances. Violations and Enforcement Procedures regarding Chapter 16 (Land Development Regulations) are tracked in the Iworqs (http://www.iworq.com/) Software Package. Violations and Enforcement Procedures regarding Chapter 32 (Utilities) are tracked in the Iworqs Software Package.

3.0 Goal

The goal of the Enforcement Response Plan is to resolve stormwater pollution problems within the community and to correct or eliminate in a timely manner.

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Appendix B
Impaired Waters Plan
2017-2022

Due to the pending approval status of the state's draft 2016 list of impaired streams, the City of Dunwoody is continuing to use the state's 2014 list to identify which of its streams are impaired. Upon publication of the state's final 2016 list, the City will make changes to its Impaired Waters Plan, if necessary, and submit any changed plan to the EPD for approval.

The City of Dunwoody is following the intent of the previous Impaired Waters Plan (2012-2017), included in this Appendix B. Following the previous Plan, the City performed monitoring of the three 303(d) listed streams that are located within its jurisdictional boundaries and implemented the MS4-related activities. The streams that are listed as impaired by the state that are located in the City of Dunwoody include Ball Mill Creek, Marsh Creek and Nancy Creek. The collected data is included in the City's 2017-2022 Stormwater Management Plan as Appendix B(i). From data analysis, the City has identified Ball Mill Creek as having an opportunity to be taken off of the 303(d) list and is pursuing the development of a SQAP for this purpose. The City will submit a SQAP to the EPD and perform the associated testing on the Ball Mill Creek in 2018 and 2019.

Dunwoody
Smart people – Smart city

City of Dunwoody Impaired Waters Plan

December 2014

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Appendix D: Sandy Springs Watershed Improvement Plan, 2010

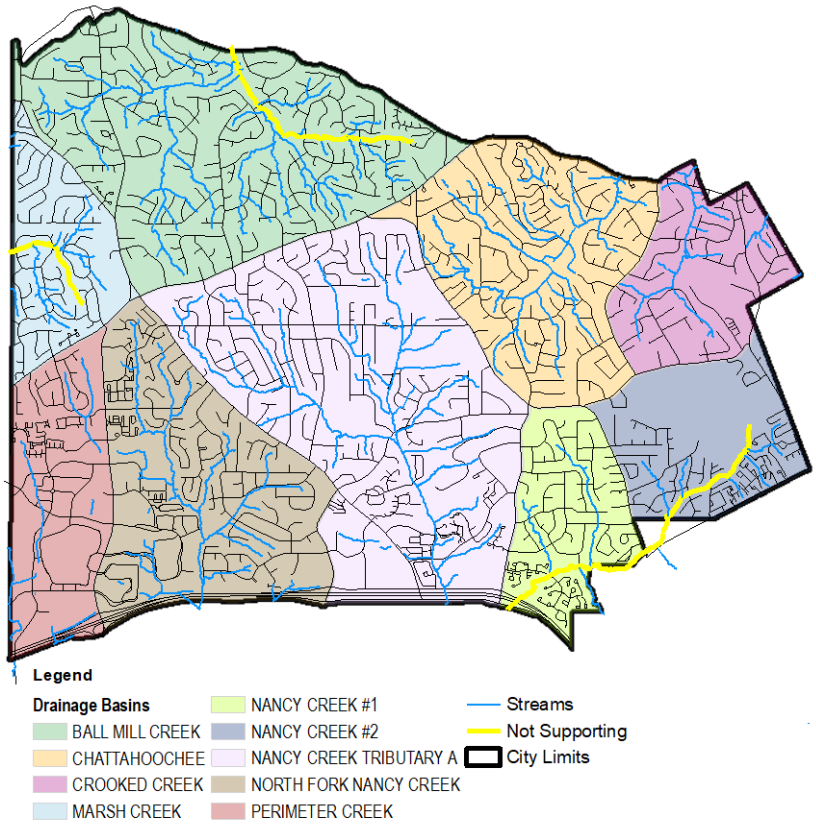
Appendix E: DeKalb County Press Release: DeKalb County Reaches Agreement with EPA, EPD. December 13, 2010.

Appendix F: Total Maximum Daily Load Evaluation for Twenty-Five Stream Segments in the Chattahoochee River Basin for Sediment (Biota Impacted)

Executive Summary

The City of Dunwoody has a National Pollutant Discharge Elimination System (NPDES) Phase II permit. One of the requirements under this permit is the development of this Impaired Waters Plan. This Plan was developed consistent with the permit guidance provided by the Georgia Environmental Protection Division (EPD). Although this document was developed to comply with state requirements, the City of Dunwoody has a strong commitment to sustainability and has ongoing programs in place to protect and improve water quality.

Figure E-1. City of Dunwoody's Impaired Waters



The City of Dunwoody has three streams that have been classified by the state as impaired; Ball Mill Creek, Marsh Creek, and Nancy Creek as shown in Figure E-1. Ball Mill Creek is considered impaired for fecal coliform bacteria and both Marsh Creek and Nancy Creek are considered impaired for fecal coliform bacteria and fish biota. The most likely sources of fecal coliform bacteria in the watershed include sanitary sewer overflows, domestic animals, and wildlife. The most likely sources of the fish biota impairment are sediments from historic agricultural lands or from stream bank erosion.

Most of the data used to classify these three streams as impaired were collected downstream of the City limits. Therefore, this Impaired Waters Plan presents a phased approach that emphasizes the collection of additional data to better characterize watershed conditions and potential sources of pollution within Dunwoody. Once a source or sources are identified the City can then develop an informed solution to address the specific challenges. The phased schedule also aligns with DeKalb County Watershed Department's ongoing sanitary sewer improvements program that may eliminate the need for further action by the City. The DeKalb County Priority Sewer Repair Areas document is located in Appendix A of this Impaired Waters Plan.

As the City collects additional data to characterize watershed conditions, they will continue to implement actions to protect water quality consistent with their approved Stormwater Management Plan as part of their Municipal Separate Storm Sewer System (MS4) permit. These activities among others include implementation of the illicit discharge detection and elimination program, erosion and sedimentation control program, and post-development stormwater management requirements. Following an adaptive management model, the City will continue to learn, assess, and adapt programs to protect stream health and promote sustainability within Dunwoody.

1.0 Background

The purpose of this Impaired Waters Plan is to identify the waters within the City of Dunwoody that are classified by the state as impaired and present a plan of actions to improve watershed conditions. This plan is a required element under the City's National Pollutant Discharge Elimination System (NPDES) permit.

There are currently three stream segments that are classified as impaired according to the state's 303(d) list of impaired waters. These stream segments include Ball Mill Creek, Marsh Creek, and Nancy Creek. These stream segments are shown in Figure 1-1 and listed in Table 1-1.

Figure 1-1. Streams Listed as Impaired within the City of Dunwoody

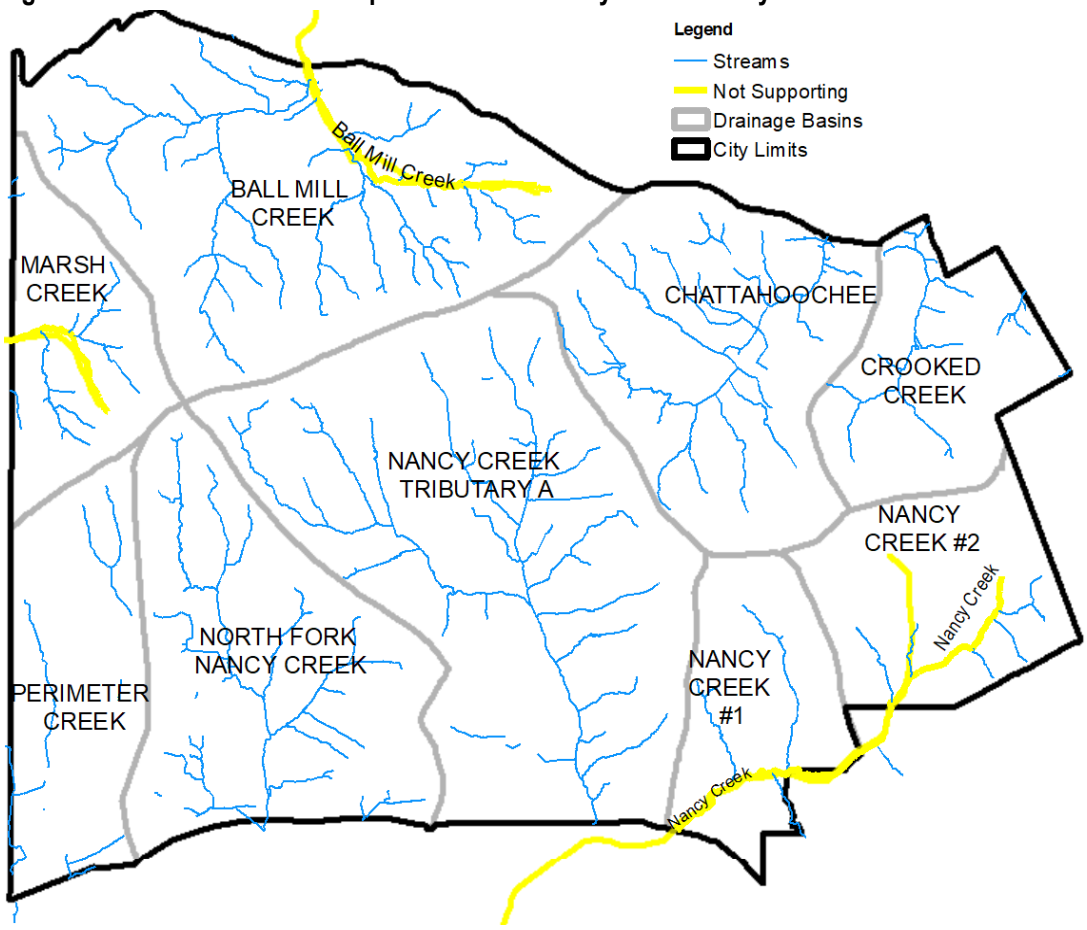


Table 1-1. Streams Listed as Impaired within the City of Dunwoody

Impaired Stream Segment	Parameters
Ball Mill Creek (headwaters to Chattahoochee River)	Fecal Coliform
Marsh Creek (headwaters to Chattahoochee River)	Fecal Coliform, Fish Biota
Nancy Creek (headwaters to Peachtree Creek)	Fecal Coliform, Fish Biota

This section presents background information intended to provide context for the remainder of the Impaired Waters Plan. There is an overview of applicable regulations as well as of the parameters of concern for the three listed streams.

1.1 Regulatory Overview

The Georgia Environmental Protection Division (EPD) is responsible for establishing water quality standards for waterbodies in the state. Consistent with the U.S. Clean Water Act, the state collects water quality sampling data and identifies streams that do not meet these water quality standards. The list, published bi-annually, of waters that do not meet state standards is referred to as the 303(d) list of impaired waters (after the section in the Clean Water Act where the state requirement is identified). As noted before, three streams within Dunwoody were classified as impaired on the 2014 list because they do not meet state water quality standards.

Some important considerations regarding the 303(d) list of impaired waters:

- The list is generated by EPD based on the best available sampling data that is collected by a state agency or a local jurisdiction with an adopted Sampling Quality Assurance Plan (SQAP).
- Dunwoody has the option to develop a SQAP and, once approved by the state, submit water quality data to support removing a stream segment from the list of impaired waters.
- Jurisdictions were not required to have a SQAP prior to 2005 in order to have data used for listing and TMDL purposes. Much of the data used for listing purposes prior to 2000 was sampling data collected following a sanitary sewer overflow. As the state was building its water quality database, this was the only data available for use.
- Impaired streams remain on the list until sufficient data is collected to show that the impairment no longer exists. Therefore, conditions may have changed but monitoring has been insufficient to remove a stream from the list.
- Typically, the entire headwaters of a stream will be considered impaired if a downstream sample exceeds the standard. Meaning a sample downstream of Dunwoody may have shown impairment that classifies the upstream area as impaired; however the stream may meet state standards within the City limits.

The sampling data needed to remove a stream from the impaired waters list is summarized by parameter in Section 1.2.

Total Maximum Daily Loads: The state must further evaluate impaired streams and develop a Total Maximum Daily Load (TMDL), which accounts for the likely sources of pollution as well as activities in the watershed to reduce pollution loads. The TMDL presents a percent reduction in the pollutant load that would be needed in order for that waterbody to meet state standards. These reductions are shown in Table 1-2 for each of the listed streams by parameter. TMDL implementation plans often summarize likely sources of pollution as well as planned activities to address potential pollution sources.

Table 1-2. Percent Reduction Needed in Pollutant Loads as Outlined in the TMDL

Impaired Stream Segment	Parameters	Reduction Needed
Ball Mill Creek (headwaters to Chattahoochee River)	Fecal Coliform	51%
Marsh Creek (headwaters to Chattahoochee River)	Fecal Coliform	60%
	Fish Biota	n/a
Nancy Creek (headwaters to Peachtree Creek)	Fecal Coliform	84%
	Fish Biota	36%

Stormwater Program – The City of Dunwoody is responsible for a National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Phase II permit. The permit includes six minimum control

measures and requires that the City establish and then meet measurable goals for each of these six measures. The six minimum measures under the MS4 permit include public education, public involvement, illicit discharge detection and elimination, construction site runoff management, post-development stormwater management requirements, and implementation of pollution prevention/good housekeeping practices for municipal activities. This Impaired Waters Plan is one facet of compliance with this permit. The City has adopted ordinances and developed programs in order to comply with these requirements. These ongoing efforts are all related to protecting water quality and reducing stream impairment.

Watershed Assessment and Protection Plan - The DeKalb County Watershed Department, as part of its NPDES wastewater discharge permit, must implement a watershed assessment and protection plan. Among other elements, this plan includes water quality monitoring. This program is unique to Georgia and is based on the concept that when the state approves additional wasteload allocations for additional wastewater treatment capacity; this act permits additional development that could negatively impact water quality. As part of this program, DeKalb County monitors watershed conditions and has adopted ordinances similar to the ones adopted by the City of Dunwoody as part of the MS4 permit program.

DeKalb County Consent Order – DeKalb County has entered into an agreement with EPA and EPD in order to reduce the occurrences of sanitary sewer overflows within the county service area as well as decrease the time to respond to these occurrences. The consent order agreement establishes a schedule for completing specific actions to reduce the number of overflows with emphasis on certain priority areas. This program is relevant to this Impaired Waters Plan, as all three streams are impaired for fecal coliform bacteria. Planned rehabilitation of the collection system may reduce the fecal coliform bacteria loading to these waterbodies such that no additional actions are required. There are a number of different documents related to the Consent Order. The most relevant of these documents is the DeKalb County Priority Sewer Repair Areas report, which is included in Appendix A.

1.2 Parameters of Concern

There are two different parameters of concern for the City of Dunwoody which are described in greater detail below: fecal coliform bacteria and fish biota.

Fecal Coliform Bacteria

Fecal coliform bacteria are found in the digestive tract of all warm blooded mammals (humans, dogs, cats, deer, etc.). Although most of these bacteria are not harmful, their presence is used as an indicator that there is potential for health impacts. In suburban areas, like Dunwoody, sources of fecal coliform bacteria may include pet waste runoff, native animals such as deer and raccoon, overflows from the sanitary sewer system, leaking septic tanks, or improperly connected wastewater plumbing. Fecal coliform is the most common impairment seen in Georgia waterbodies.

The state's fecal coliform standard varies based on the time of year. The "winter" standard from November to March is 1,000 counts/100mL and the "summer" standard from April to October is 200 counts/100mL. The summer standard is lower to reflect the higher probability that people will be recreating in the state's waterways thus increasing the chance for possible health impacts.

Fecal coliform is typically reported in terms of a geometric mean, or 4 samples taken within a 30 day period. The geometric mean provides some flexibility for natural variability in levels. For example, if one out of the four samples exceeds the water quality standard, it is possible that the geometric mean will meet state standards. In order to remove a stream from the 303(d) list for fecal coliform bacteria, 4 geometric means collected over 4 calendar

quarters (or 16 total samples) are needed in accordance with an approved SQAP. The timing of the samples must ensure that the geometric means do not overlap from April to May or from October to November, as the standards are seasonal.

Fish Biota

The state periodically performs assessments to look at the quantity and health of fish in streams around the state. The state's bioassessments were based on Fish Index of Biotic Integrity (IBI) protocols. Streams that ranked "poor" or "very poor" on the IBI index are classified as impaired. Often the fish impairment is due to high sediment loads that impact the fish spawning habitats and also generally impact their well-being. Sediment loads in suburban areas like Dunwoody include migration of historic sediment in streams from former agricultural practices in the area and instream bank erosion aggravated by suburban runoff. Erosion from new development projects is also a source of sediment in some communities; but is likely not a major contributor in Dunwoody because of the City's erosion and sedimentation control program. Impairment for habitat, such as fish biota, is relatively common in the urbanized areas around metropolitan Atlanta.

Due to the complexity of fish sampling protocols, the state does not currently accept locally collected fish data to support removing streams from the 303(d) list. The only entity who can affect the impairment classification is the state's Wildlife Resources Division. A community may request that sampling be performed on a stream listed as impaired, but typically the state requires compelling evidence such as the completion of a water quality improvement project in order to justify additional sampling.

Sediment is often used as a surrogate parameter for fish biota in TMDL modeling; therefore, total suspended solids (TSS) sampling is recommended as part of this plan to determine whether conditions in Dunwoody's impaired streams are improving. The sediment data may also be used as a justification to request the state to collect fish samples at the City of Dunwoody limits.

2.0 Ball Mill Creek Watershed

Ball Mill Creek is located in the northwest portion of the City, as shown in Figure 2-1. The headwaters for the drainage basin are located within the City of Dunwoody, the stream flows north into Sandy Springs for an additional 1.75 miles until it joins the Chattahoochee River.

2.1 Land Use

The watershed is primarily single-family residential (96.4%) with some commercial and institutional land use interspersed, as shown in Table 2-1. Dunwoody Village and the Mount Vernon shopping centers are located in the southern and western headwaters of the watershed, respectively.

Figure 2-1. Ball Mill Creek Watershed

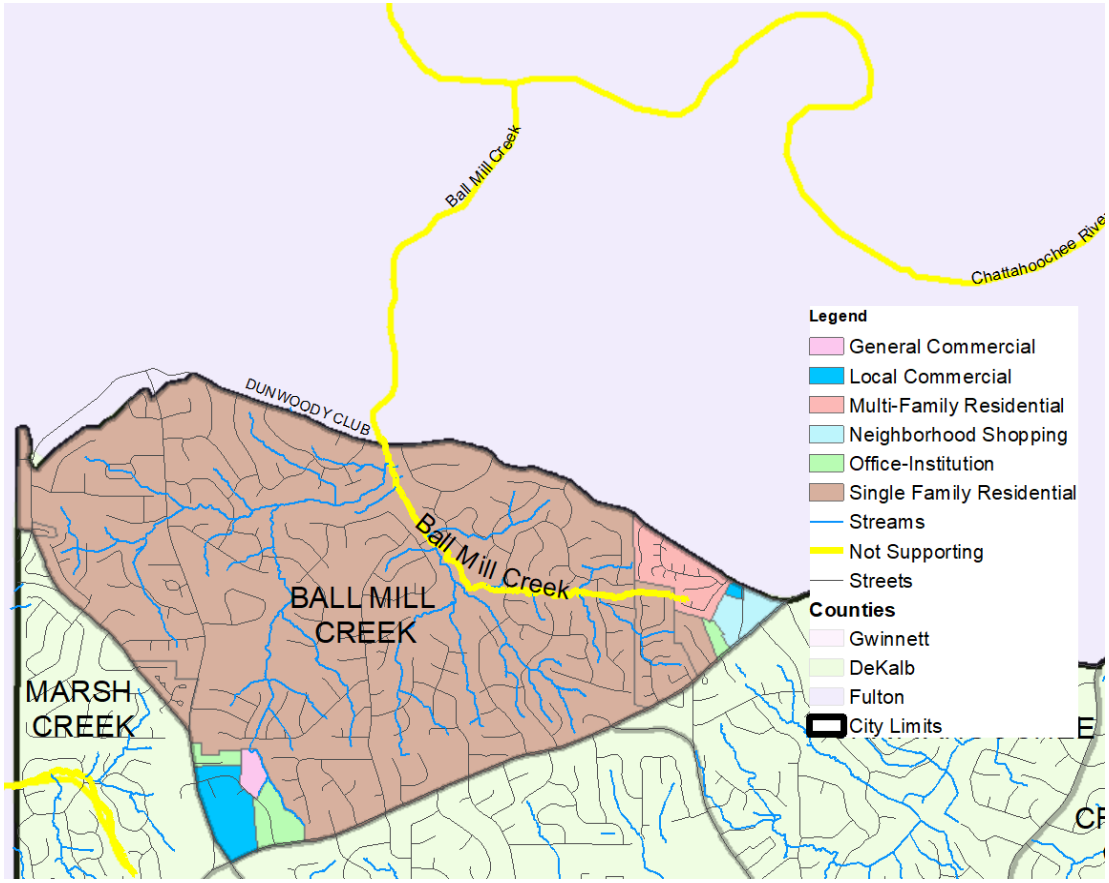


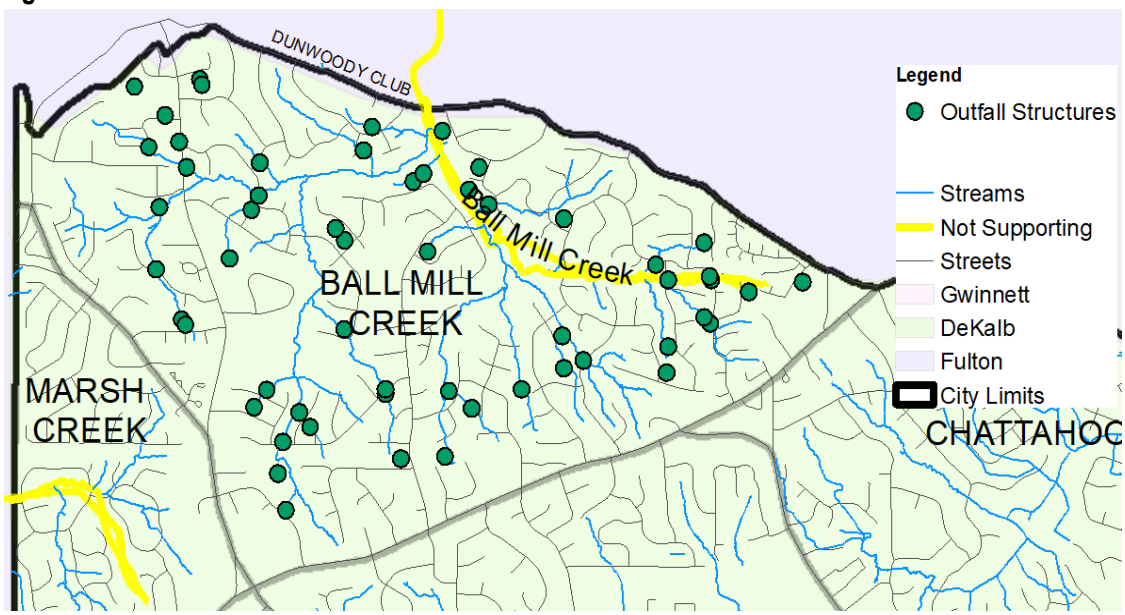
Table 2-1. Estimated Percentage of Land Use by Zoning Category in the Ball Mill Creek Watershed

Land Use (based on Zoning Category)	Acres	% of Watershed
Single-Family Residential	4,912	96.4%
Office-Institutional	35	0.7%
General Commercial	8	0.2%
Local Commercial	81	1.6%
Multi-Family Residential	39	0.8%
Neighborhood Shopping	18	0.3%
TOTAL	5,093	100.0%

2.2 MS4 System Outfalls

Figure 2-2 shows the outfalls within the Ball Mill Creek Watershed according to the City's stormwater infrastructure inventory.

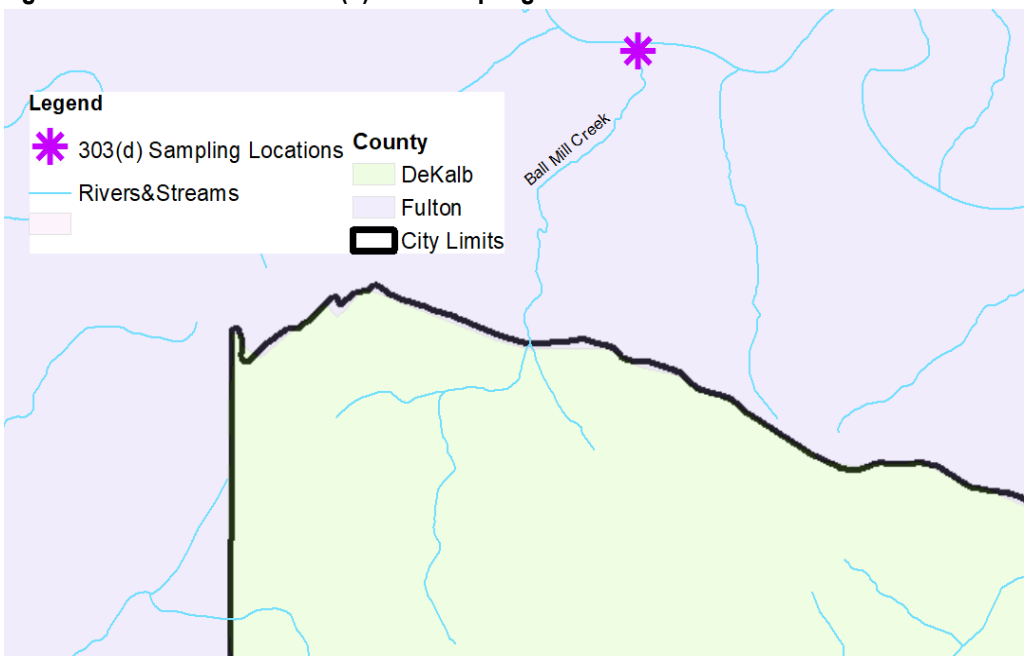
Figure 2-2. Ball Mill Creek Outfalls



2.3. Summary of Available Water Quality Data

Ball Mill Creek is considered impaired for fecal coliform bacteria. The 303(d) list indicates that there are three sources of data that were used as the basis for the impaired determination on Ball Mill Creek; EPD Watershed Planning Unit, DeKalb County, and Fulton County. However, through discussions with EPD, the only data used for the listing was data provided by Fulton County in the 1990's as part of the Chattahoochee River Management Project (CRMP). This data was collected almost 2 miles downstream of the City of Dunwoody limits, as shown in Figure 2-3. It is uncertain whether this data was to determine overall stream health or in response to a sanitary sewer flow. EPD was unable to provide a copy of this data or the CRMP.

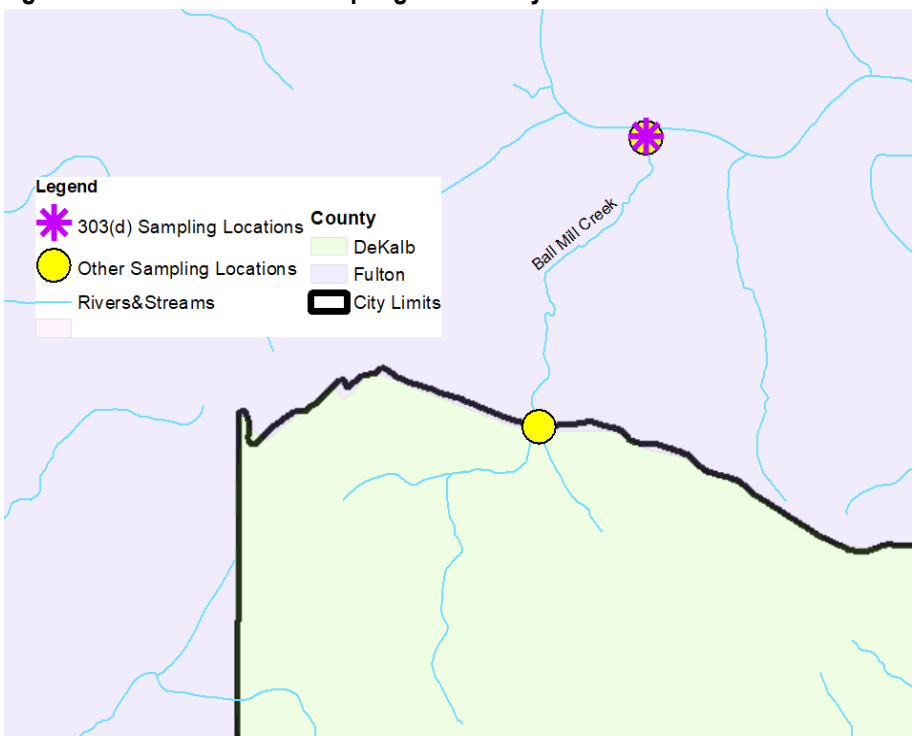
Figure 2-3. Ball Mill Creek 303(d) List Sampling Stations



The most recent TMDL for Ball Mill Creek (Appendix B) indicates that a 51% reduction in fecal coliform bacteria is needed to meet water quality standards. The data used to develop the TMDL was considered "limited" and included 23 samples. The TMDL indicates that DeKalb County sampling data from 1994-1995 was used in addition to the CRMP data from 1992 – 1996. The overall geometric mean for the sampling data was 512 counts/100 mL, which exceeds the summer standard of 200 counts/100mL but is lower than the winter standard of 1,000 counts/100mL.In order to meet the summer standard, a 51% reduction is needed in overall loads. Although not indicated in the TMDL document, EPD staff confirmed that the sampling data from the CRMP was taken near the Chattahoochee River as shown in Figure 2-3.

Although the data was not used in the state's 303(d) listing evaluation, DeKalb County and Sandy Springs have collected and/or currently collect water quality data on Ball Mill Creek for the locations shown in Figure 2-4 and described below.

Figure 2-4. Ball Mill Creek Sampling Stations by Others



DeKalb County monitors Ball Mill Creek at Dunwoody Club Drive as part of their ongoing Bacteria and Water Quality Sampling program. This program is part of the ongoing Watershed Management Plan activities required as part of the County's wastewater treatment program. The County collects geometric means (i.e., four samples within a 30 day period) every quarter or 16 samples per year. Data from 2005 through 2014 show that all of the summer geometric mean samples exceeded the summer standard while none of the winter geometric means exceeded the winter standard. Approximately two-thirds of the summer means exceeded the winter standard. The highest geometric mean exceeded 10,000 colonies per 100mL, significantly greater than the 200 colonies per 100mL summer standard in October 2006. A copy of this sampling data is located in Appendix C.

The Sandy Springs Watershed Improvement Plan for Fecal Coliform (Appendix D) includes a summary of Fulton County sampling data from 2007 to 2009. Ball Mill Creek near the Chattahoochee River had an average fecal coliform level of 355 counts/100mL. Similar to the data collected by DeKalb County, these fecal coliform levels are below the winter standard and just above the summer standard.

2.4. Possible Sources of Pollutants of Concern

The most recent TMDL (Appendix B) calculated that a 51% reduction in fecal coliform is needed in order for Ball Mill Creek to meet state standards. The source of fecal coliform bacteria identified within the TMDL is stormwater runoff which includes sources such as; sanitary sewer sources, septic systems, domestic animals (dogs, cats, etc.), wildlife (deer, raccoons, etc.), and illegal stormwater connections. A listing of the most likely of these sources is presented below; however this information is only based on available evidence.

As part of DeKalb County's ongoing sewer maintenance program, they are completing a mapping update and condition assessment of the sanitary sewer system in the Ball Mill Creek watershed in 2014 (Appendix A). Any issues associated with the sanitary sewer system will be identified and prioritized across the county service area. Based on

the periodic high spikes in fecal coliform bacteria, it is likely that there are older sections of sanitary sewer within the Ball Mill Creek watershed that leak or overflow into the creek. As an example, DeKalb County addressed a grease blockage in the Ball Mill Creek watershed in September 2014 which resulted in an overflow. Like most communities, DeKalb County is working to address the impact of their aging infrastructure on a prioritized basis with available funding.

Another source of fecal coliform that may be present in the watershed is from domestic animals and wildlife. The area is highly developed with residential properties and domestic animals are popular.

Illegal stormwater connections are a possible source although the contribution from these sources is likely small. It is possible that illegal sanitary sewer lines associated with basement remodels and/or illegal construction practices have been connected to the storm drain system instead of the sanitary sewer system. The City's stormwater infrastructure inventory and ongoing asset management program will continue to look for these rare occurrences.

2.5. Existing Watershed Activities

The City of Dunwoody implements the MS4 stormwater program that is outlined in Section 1.1. This program includes activities designed to monitor and reduce potential pollution in the city. The specific activities are outlined within the City's Stormwater Management Plan and not duplicated in this Impaired Waters Plan.

DeKalb County Watershed Management is responsible for the maintenance of the sanitary sewer collection system. As mentioned previously, DeKalb County is currently inventorying the collection system within the Ball Mill Creek watershed. Based on the inventory and condition assessment, DeKalb County will prioritize and complete any needed rehabilitation projects. DeKalb County has a consent order with EPD and EPA that outlines a schedule for assessing and rehabilitating the system in order to reduce sanitary sewer overflows (http://www.dekalbwatershed.com/ConsentDecree.html and Appendix E).

2.6 Recommendations for the Watershed

DeKalb County Watershed Management currently monitors fecal coliform levels in Ball Mill Creek at Dunwoody Club Drive. This is an excellent monitoring location because it is located at the city limits. As data is currently being collected, this Impaired Waters Plan recommends monitoring further upstream to Ball Mill Creek and Barcroft Way. This will provide additional data on conditions within the watershed. Section 3 of this Impaired Waters Plan outlines the details of the recommended monitoring program.

Additional monitoring as well as continued implementation of the MS4 program activities by the City of Dunwoody will help collect additional information to inform future actions. The completion of the sanitary sewer evaluation in the Ball Mill Creek watershed may assist with narrowing the list of possible sources within the watershed. Similarly, having two sampling locations within the watershed may help to isolate potential sources.

3.0 Marsh Creek Watershed

Marsh Creek (also known as March Creek) is located in the western portion of Dunwoody as shown in Figure 3-1. The headwaters are located within the City limits and the stream flows west into Sandy Springs where it flows into the Chattahoochee River.

3.1 Land Use

The watershed is primarily single family residential (98.3%) with some commercial property in the very upper headwaters. The commercial property is part of Dunwoody Village. The land use data for the watershed based on Dunwoody's zoning is summarized in Table 3-1.

Figure 3-1. Marsh Creek Watershed

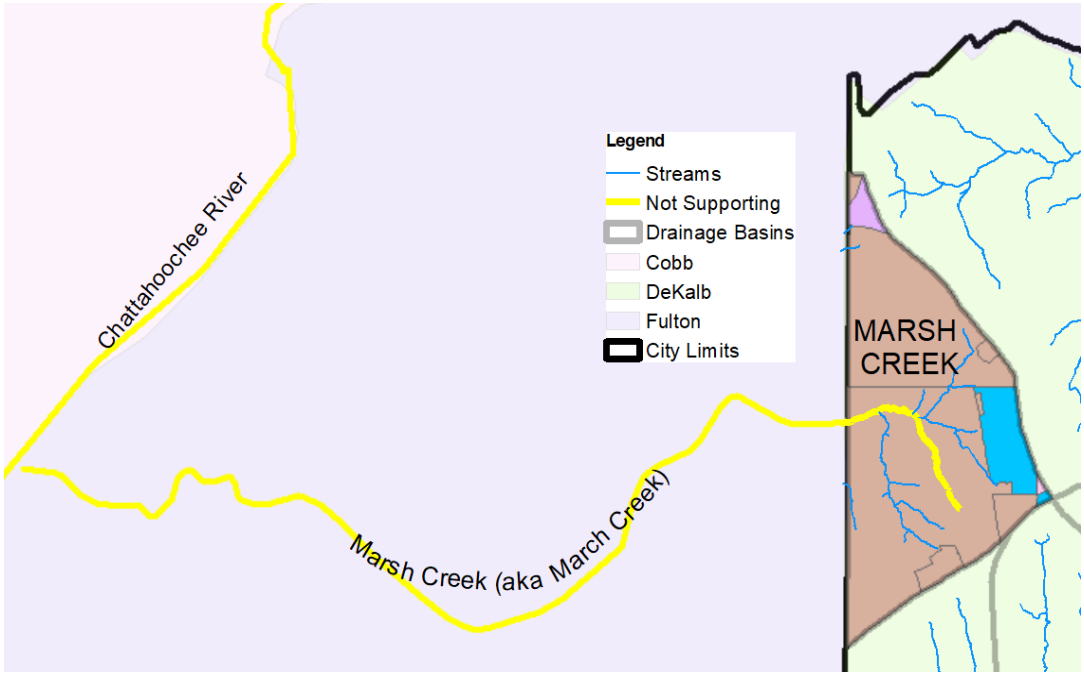


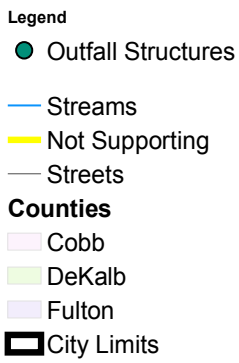
Table 3-1. Estimated Percentage of Land Use by Zoning Category in the Marsh Creek Watershed

Land Use (based on Zoning Category)	Acres	% of Watershed
Single-Family Residential	5233	98.3%
Single-Family Cluster Residential	9	0.2%
General Commercial	1	0.0%
Local Commercial	79	1.5%
TOTAL	5322	100.0%

3.2 MS4 System Outfalls

Figure 3-2 shows the outfalls within the Marsh Creek Watershed according to the City's stormwater infrastructure inventory.

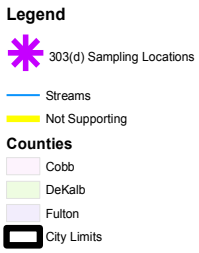
Figure 3-2. Marsh Creek Outfalls



3.3. Summary of Available Water Quality Data

Marsh Creek is considered impaired for fecal coliform bacteria and fish biota. The 303(d) list indicates that there are two sources of data that were used as the basis for the impaired determination on Marsh Creek; EPD Watershed Planning Unit and Fulton County. However, through discussions with EPD, the only data used for the fecal coliform listing was data provided by Fulton County in the 1990's as part of the Chattahoochee River Management Project (CRMP). This data was collected on Marsh Creek at Brandon Mill Road, NW (3.6 miles downstream of Dunwoody) and Riverside Drive, NW (4.4 miles downstream of the City of Dunwoody limits), as shown in Figure 3-3. It is uncertain whether this data was to determine overall stream health or in response to a sanitary sewer flow. The fish biota data was collected by the Georgia Wildlife Resources Division at the same 2 stations shown in Figure 3-3.

Figure 3-3. Marsh Creek 303(d) List Sampling Stations



3.3.1 Fecal Coliform Bacteria

The most recent TMDL for Marsh Creek (Appendix B) indicates that a 60% reduction in fecal coliform bacteria is needed to meet water quality standards. The data used to develop the TMDL was considered "limited" and included 38 samples and an overall geometric mean of 5,623 counts/100mL. Some of the data used for the TMDL was collected from 1992 to 1996 as part of the CRMP. These results are significantly above the winter standard.

The Sandy Springs Watershed Improvement Plan (Appendix D) summarizes Fulton County monitoring of Marsh Creek (aka March Creek) at Brandon Mill Road from 2007 to 2009. The average fecal coliform level was 615 colonies/100mL which is under the winter fecal coliform standard of 1,000 colonies/100mL but exceeds the summer standard of 200 colonies/100mL.

3.3.2 Fish Biota/ Sediment

Marsh Creek was listed for fish biota by data collected by the Department of Natural Resources on behalf of the EPD. The listing was just made in 2014 and the TMDL is scheduled to be developed in 2017. Therefore, very little data was available regarding the potential impairment. The fish sampling data was collected on Marsh Creek at Riverside Drive within the City of Sandy Springs, which is the most downstream station shown in Figure 3-3.

3.4. Possible Sources of Pollutants of Concern

The possible sources of fecal coliform bacteria and fish biota impacts are presented in the following two sections.

3.4.1 Possible Sources of Fecal Coliform Bacteria

The TMDL indicates that a 60% reduction in fecal coliform bacteria is needed. Sources mentioned in the TMDL include sanitary sewer sources, septic systems, domestic animals (dogs, cats, etc.), wildlife (deer, raccoons, etc.), and illegal stormwater connections. A listing of the most likely of these sources is presented below; however this information is only based on available evidence.

Fulton County has a program to address aging infrastructure and like most communities, has some areas where aging infrastructure results in sanitary sewer leakage and/or overflows. One example of efforts that Fulton County has taken is the 2010 construction of the new Marsh Creek Pump Station located at Marsh Creek and Riverside Drive within Sandy Springs. The old pump station was first built in the 1960's as a wastewater treatment plant but had been converted to a pump station to improve water quality. The pump station was replaced to increase reliability, which may also contribute to reduced overflow events within the Marsh Creek watershed.

There are still periodic sanitary sewer issues within Fulton County. A group of Kennesaw State University students recently sampled E-coli bacteria levels on Marsh Creek at Mabry Road within Sandy Springs and found levels of 36,350 MPN, well above the acceptable range of 1,000 MPN for urban streams. A manhole overflow and pipe break were identified as the sources and this issue was addressed, bringing the e-coli levels down to 720 MPN. These are common challenges faced in metropolitan Atlanta as our infrastructure ages.

DeKalb County manages the sewer system within the City of Dunwoody and in the Marsh Creek watershed. As part of the county's Consent Order agreement with EPD and EPA, DeKalb County has identified the Marsh Creek watershed as an area where capital improvement projects are needed to upgrade the sanitary sewer capacity and minimize the threat of overflows.

Additional sources of fecal coliform bacteria within the watershed may include domestic animals, wildlife, and illegal stormwater connections. The City's stormwater infrastructure inventory and ongoing asset management program will continue to look for additional sources of fecal coliform bacteria within the watershed.

3.4.2 Possible Sources of Sediment

The TMDL for biota for Marsh Creek has not been completed. However, for similar watersheds within the Chattahoochee River Basin, the primary source of habitat impairment is considered to be due to runoff from medium-density and high-density residential properties.

Common thought is that instream sediment loads in urbanized areas are the dominant source of fish habitat impairment. This is likely to be true for the City of Dunwoody as there is an active Erosion and Sediment Control Program that minimizes the new sediment loads to the streams. Historic agriculture practices as well as development prior to modern stormwater and erosion requirements contributed sediment that continues to wash downstream. If peak flows are not detained in more urban watersheds, the velocity of the stream flows can also result in stream bank erosion that contributes to instream sediment loads.

The sampling data for the biota listing was collected on Marsh Creek at Riverside Drive, which is downstream of the City of Dunwoody limits.

3.5. Existing Watershed Activities

The City of Dunwoody implements the MS4 stormwater program that is outlined in Section 1.1. This program includes activities designed to monitor and reduce potential pollution in the city. The specific activities are outlined within the City's Stormwater Management Plan and not duplicated in this Impaired Waters Plan.

DeKalb County Watershed Management is responsible for the maintenance of the sanitary sewer collection system. As mentioned previously, DeKalb County is currently inventorying the collection system within the Marsh Creek watershed. Based on the inventory and condition assessment, DeKalb County will prioritize and complete any needed rehabilitation projects. DeKalb County has a consent order with EPD and EPA that outlines a schedule for assessing and rehabilitating the system in order to reduce sanitary sewer overflows (Appendix A and E).

3.6 Recommendations for the Watershed

The sampling data reflects conditions downstream of the City of Dunwoody. Additional monitoring data at the City boundary will provide data that is more reflective of conditions within the city. The recommended monitoring plan is outlined in Section 5 of this Impaired Waters Plan.

4.0 Nancy Creek Watershed

Nancy Creek begins in Dunwoody near DeKalb County Water Treatment Plant. It flows through portions of Dunwoody, Doraville, Chamblee, Brookhaven, Sandy Springs, and Atlanta prior to flowing into the Chattahoochee River. The Nancy Creek watershed is unusual because it flows from Dunwoody, into Chamblee, back into Dunwoody, and then flows downstream. The subwatersheds within the City limits include Nancy Creek #1, Nancy Creek #2, and Nancy Creek Tributary A as shown in Figure 4-1.

4.1 Land Use

The land cover in this watershed is more intense than the other two impaired watersheds but is still dominated by single-family residential land use (87.0%). There is a higher percentage of multi-family residential (5.8%), office, and commercial development inside Dunwoody. The land use data for the watershed based on Dunwoody's zoning is summarized in Table 4-1.

While outside of the City of Dunwoody, it is notable that the southern boundary of the City is I-285. This major interstate system is upstream of the sampling locations used for the impaired water listing.

Figure 4-1. Nancy Creek Watershed

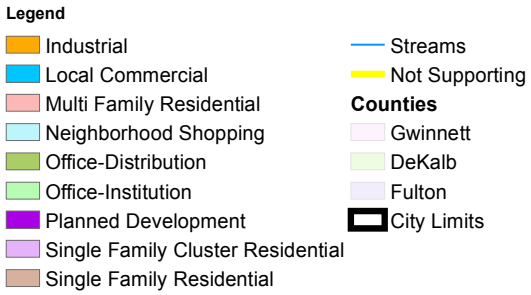


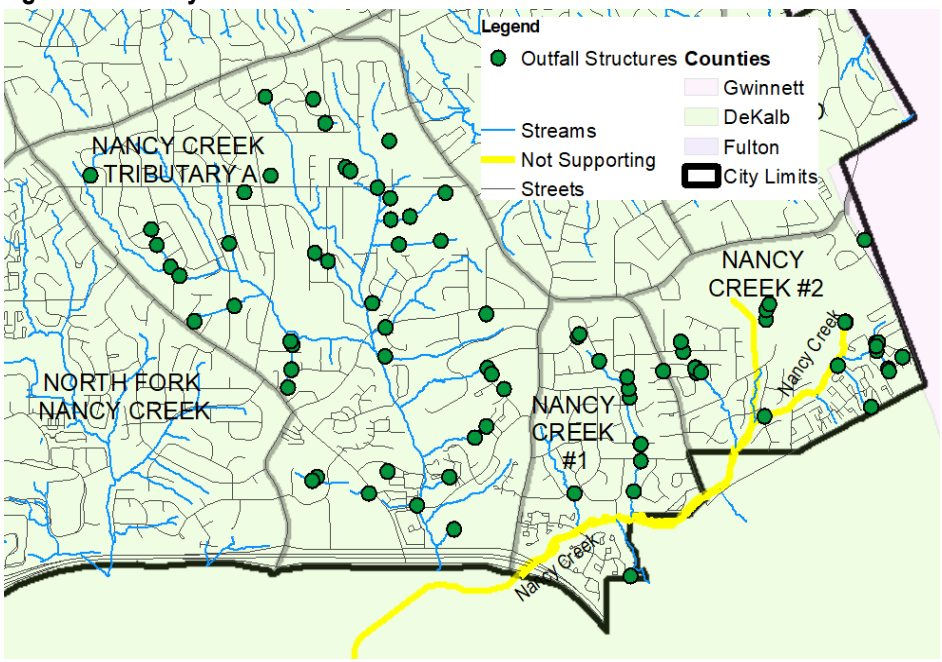
Table 4-1. Estimated Percentage of Land Use by Zoning Category in the Nancy Creek Watershed

Land Use (based on Zoning Category)	Acres	% of Watershed
Single-Family Residential	5853	87.0%
Single-Family Cluster Residential	40	0.6%
Local Commercial	141	2.1%
Industrial	13	0.2%
Multi-Family Residential	388	5.8%
Neighborhood Shopping	2	0.0%
Office-Distribution	66	1.0%
Office-Institution	220	3.3%
TOTAL	6723	100.00%

4.2 MS4 System Outfalls

Figure 4-2 shows the outfalls within the Nancy Creek Watershed according to the City's stormwater infrastructure inventory.

Figure 4-2. Nancy Creek Outfalls



4.3. Summary of Available Water Quality Data

Nancy Creek is considered impaired for fecal coliform bacteria and fish biota. The 303(d) list indicates that there are three sources of data that were used as the basis for the impaired determination on Nancy Creek; EPD Watershed Planning Unit, DNR Wildlife Resources, USGS. However, from discussions with EPD the listing for fecal coliform was based on data collected by the City of Atlanta on Nancy Creek at West Wesley and the fish biota data was collected by the state Wildlife Resources Division at Johnson Ferry Road, Northside Drive, and West Wesley. As shown in Figure 4-3, these sampling locations are significantly downstream of Dunwoody; Northside Drive is approximately 12 miles downstream and West Wesley is 17 miles downstream.

Figure 4-3. Nancy Creek 303(d) List Sampling Stations

4.3.1 Fecal Coliform Bacteria

The most recent TMDL for Nancy Creek (Appendix B) indicates that an 84% reduction in fecal coliform bacteria is needed to meet water quality standards. The TMDL includes 16 miles of Nancy Creek from the headwaters in Dunwoody to the confluence with Peachtree Creek in the City of Atlanta.

The data used to develop the TMDL was collected in 2000 by the City of Atlanta on Nancy Creek at West Wesley, just upstream of the confluence with Peachtree Creek. The geometric means range from 170 counts/100mL to 1,363 counts/100mL. Three of the geometric means were collected under the summer standard with one mean meeting the standard and two exceeding the standard. The one sample collected under the winter standard exceeded the winter standard (Appendix B).

Although the data was not used in the state's 303(d) listing evaluation, DeKalb County collects water quality data on Nancy Creek for the locations shown in Figure 4-4 and described below.

Figure 4-4. Nancy Creek Sampling Stations by Others

DeKalb County monitors Nancy Creek at Chamblee Dunwoody Road, just south of the City of Dunwoody limits and also further downstream at Johnson Ferry Road. These sampling stations are part of the County's Bacteria and Water Quality sampling associated with their wastewater collection and treatment operations. The data from Nancy Creek at Chamblee Dunwoody, which is just outside the City of Dunwoody limits, shows that all of the summer geometric means are above the summer state standards and half of the winter geometric means are above the winter state standard (Appendix C). The fecal coliform data for Nancy Creek at Johnson Ferry Road were slightly better than the results at Chamblee Dunwoody.

4.3.2 Fish Biota/ Sediment

The monitoring data for the biota impairment were collected between 1998 and 2003 and include locations that are classified as upstream, midstream, and downstream in the TMDL (Appendix F). The upstream location is located in DeKalb County and has a habitat score of good to poor, depending on the indices as shown in Table 4-2. The midstream location, however, has an IBI score of very poor for both indices.

Table 4-2. Nancy Creek TMDL Biota Sampling Data

Stream Name	Area upstream Drainage (sq. mi.)	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Nancy Creek u/s (Johnson Ferry)	12.6	7/31/03	28	Poor	7.7	Good	85.7
Nancy Creek mid (Northside Drive)	30.9	10/07/03	18	Very Poor	5.4	Very Poor	57.1
Nancy Creek d/s (W Wesley)	37.2	10/07/03	24	Very Poor	6.8	Fair	87.4
IBI = Index Biotic Integrity IWB = Index of Well-Being							

4.4. Possible Sources of Pollutants of Concern

The possible sources of fecal coliform bacteria and fish biota impacts are presented in the following two sections.

4.4.1 Possible Sources of Fecal Coliform Bacteria

The TMDL indicates that an 84% reduction in fecal coliform bacteria is needed. Sources mentioned in the TMDL include sanitary sewer sources, septic systems, domestic animals (dogs, cats, etc.), wildlife (deer, raccoons, etc.), and illegal stormwater connections. A listing of the most likely of these sources is presented below; however this information is only based on available evidence.

As part of the DeKalb County consent order agreement with EPD and EPA, they have identified a number of locations in their sewer service area that are priorities for improvement projects. Some of the highest priority projects are located within the Nancy Creek watershed. Hopefully, as the capital improvement projects are completed within the Nancy Creek watershed, the fecal coliform bacteria spikes will reduce to meeting state standards.

The City of Atlanta has also had challenges with sanitary sewer overflows on Nancy Creek that are evident in the data used to develop the TMDL. The City of Atlanta has been working to address their aging sanitary sewer infrastructure to reduce contributions of fecal coliform bacteria to local waterways as well.

In addition to sanitary sewer sources, domestic pets and wildlife are also potential sources as are failing septic systems or improper connections of domestic sewage to the storm sewer system. These sources are considered secondary to the sanitary sewer sources however as part of the City's MS4 program implementation, the City staff will continue to look for issues and address them when identified.

4.4.2 Possible Sources of Sediment

The most recent Biota TMDL for Nancy Creek (Chattahoochee River Basin Biota Impacted – January 2008) indicates that a 35% reduction in sediment load is needed. The majority of the sediment load in the TMDL for Nancy Creek is classified as "stormwater" and associated with runoff from high and medium density residential land uses within the watershed.

The Nancy Creek watershed is more urbanized than the Marsh Creek watershed and includes I-285 (although this is outside of the City's limits). The increased urban runoff from a major interstate system that has not been historically retained or treated could result in an increase in instream sediment loads that would impact fish habitat conditions.

The City will continue to be diligent with the erosion and sediment control program and continue to look for other potential sources of sediment loads.

4.5. Existing Watershed Activities

The City of Dunwoody implements the MS4 stormwater program that is outlined in Section 1.1. This program includes activities designed to monitor and reduce potential pollution in the city. The specific activities are outlined within the City's Stormwater Management Plan and not duplicated in this Impaired Waters Plan.

DeKalb County Watershed Management is responsible for the maintenance of the sanitary sewer collection system. As mentioned previously, Nancy Creek is considered a priority watershed for rehabilitation of the aging sanitary sewer system in order to reduce overflows. DeKalb County has a consent order with EPD and EPA that outlines a schedule for assessing and rehabilitating the system in order to reduce sanitary sewer overflows.

4.6 Recommendations for the Watershed

Although the data used to develop the TMDL reflects conditions further downstream from the City limits, the DeKalb County watershed monitoring results indicate that Nancy Creek just south of the City limits does not typically meet water quality standards. The Nancy Creek watershed is a priority for sanitary sewer rehabilitation projects that will hopefully reduce the fecal coliform bacteria loading. The recommendation is to collect samples at two locations; both near where Nancy Creek leaves the city and flows into an adjacent jurisdiction. The recommended monitoring plan is outlined in Section 5 of this Impaired Waters Plan.

5.0 Monitoring and Implementation Plan

This section outlines the proposed monitoring locations, monitoring details, and proposed monitoring schedule. This monitoring plan presents a data-focused approach. The City hopes to collect data to better characterize the impairment within the city limits. The data evaluation will establish the City's future actions as outlined in Section 6.0.

5.1 Sample Location

The City of Dunwoody has identified four monitoring stations with the following goals in mind:

- Monitor as close to the City boundary as possible in order to reflect conditions within Dunwoody
- Sampling location with safe access
- Sites that would be conducive to habitat assessments or biota assessments in the future
- Avoidance of duplicate monitoring sites to provide for additional data collection
- Sites that would represent the watershed conditions

The proposed sampling locations are shown in Figure 5.1. Figures 5-2 through 5-5 show pictures of the four recommended locations.

Figure 5-1. Recommended Water Quality Monitoring Locations

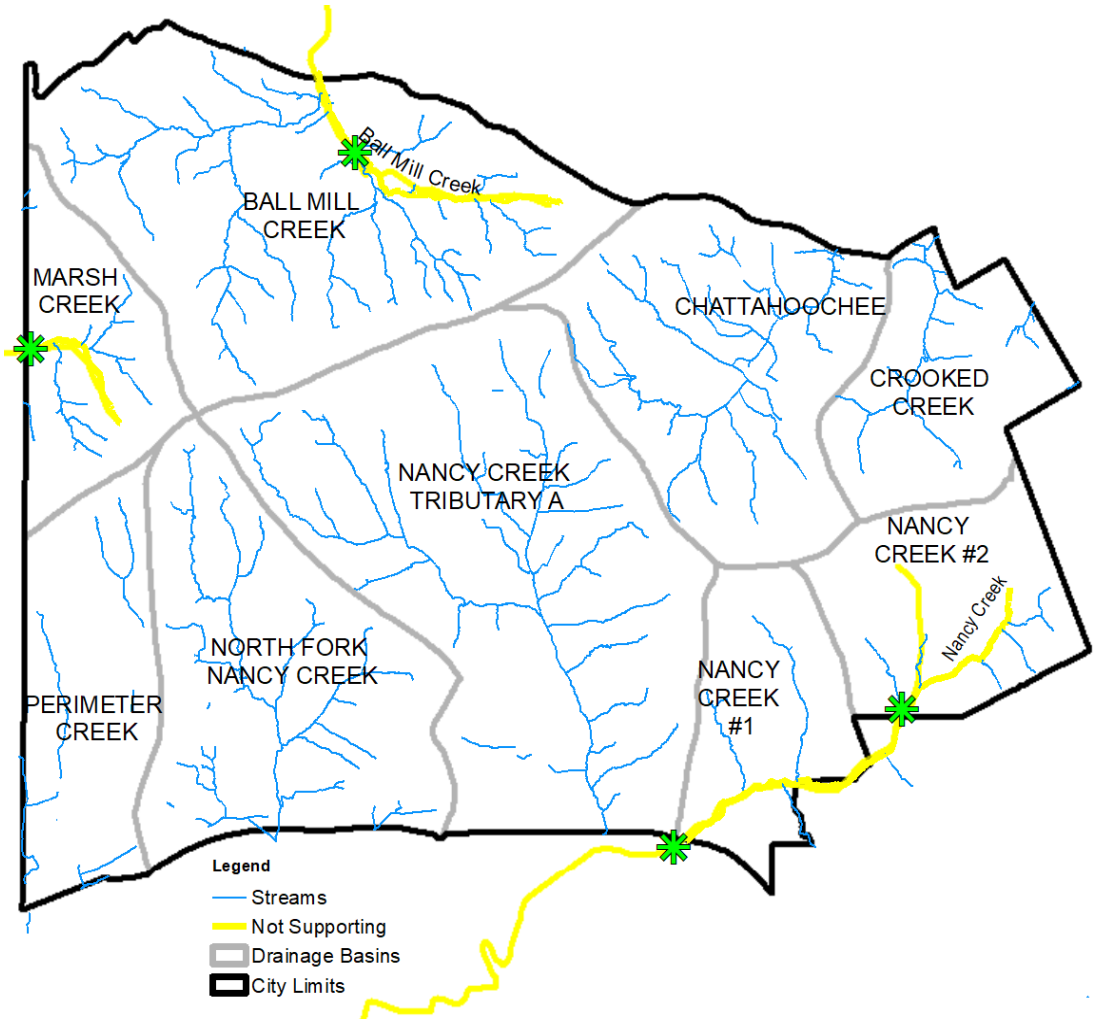


Table 5-1. Recommended Water Quality Monitoring Locations

Sampling Station Location	Sampling Location Details	Recommended Frequency
1. Ball Mill Creek at Barcroft Way	Upstream of the City of Dunwoody limits on Ball Mill Creek.	Bi-Monthly
2. Marsh Creek at Winding Branch Circle (western intersection)	Located in a residential subdivision just inside the City limits.	Bi-Monthly
3. Nancy Creek at Binghamton Drive	Just inside the city limits before Nancy Creek flows into Chamblee.	Bi-Monthly
4. Nancy Creek at N Peachtree Road	Just downstream of the city limits in Brookhaven.	Bi-Monthly

Figure 5-2. Ball Mill Creek at Barcroft Way Monitoring Location

Figure 5-3. Marsh Creek at Winding Branch Circle (upstream or downstream)

Figure 5-4. Nancy Creek at Binghamton Drive

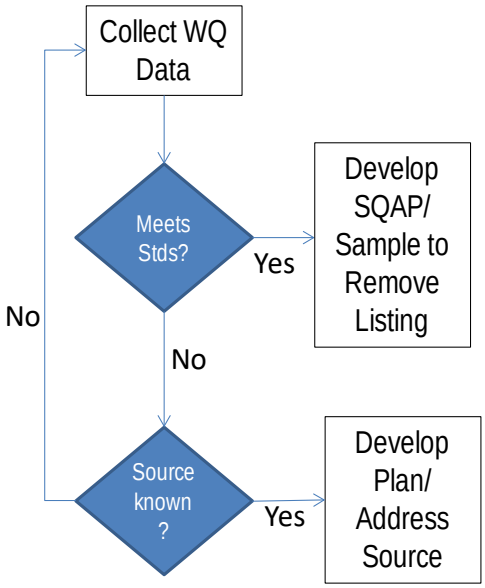
Figure 5-5. Nancy Creek at N Peachtree Road

5.2. Sample Characteristics

Fecal coliform bacteria and TSS monitoring is recommended as an element of this plan in order to better characterize conditions in all three listed streams. Six bi-monthly samples for all four sampling stations is recommended with both TSS and fecal coliform bacteria monitored together. While this monitoring is not consistent with state requirements for official listing purposes, it will guide and inform City staff to the extent of the watershed issues within Dunwoody. The sampling procedures will follow the Metropolitan North Georgia Water Planning District's *Standards and Methodologies for Surface Water Quality Monitoring* (March 2007 or most recent version), specifically Part IIB, which outlines the procedures for water quality monitoring grab samples.

Year 1 Samples: The characterization during Year 1 is intended to gain a greater understanding of conditions within the City of Dunwoody. The bi-monthly characterization samples will be grab samples for fecal coliform and can be either probe or grab samples for TSS. They will be taken every other month on a consistent schedule and initially will not be tied to wet weather or dry weather conditions. Because samples will be taken bi-monthly, the fecal coliform samples will reflect conditions during the summer standard (May through October) and the winter standard (November through April).

Figure 5-6. Adaptive Management Approach



Year 2 Samples: The Year 2 characterization will be tied to the results of Year 1 following an adaptive management approach. For example, if the sample results from Year 1 show that the stream is not impaired within the City limits, the City will likely submit a SQAP for approval and increase the number of samples to quarterly geometric means in order to remove the stream from the 303(d) list. The SQAP would outline the specific procedures but sampling would include both summer and winter geometric means consistent with guidelines for submitting data to the 303(d) list. If the data from Year 1 shows that the stream is not meeting state standards and a likely source of the impairment is identified, then Dunwoody will work to resolve the issue. If the data from Year 1 shows that the stream is not meeting state standards but a likely source is not identified, the City will likely identify additional monthly monitoring stations and/or perform stream walks to narrow the City's focus. For TSS, if the results show that TSS is increasing, the City may also look at additional upstream watershed sampling or stream walks in order to identify potential sources. Figure 5-6 shows a representation of the evaluation process that Dunwoody may use.

The City will continue to follow an adaptive management approach that emphasizes the evaluation of data to guide future actions to improve water quality. The sampling for future years will also be guided by continued coordination with DeKalb County's Watershed Department as they implement the actions within the Consent Order.

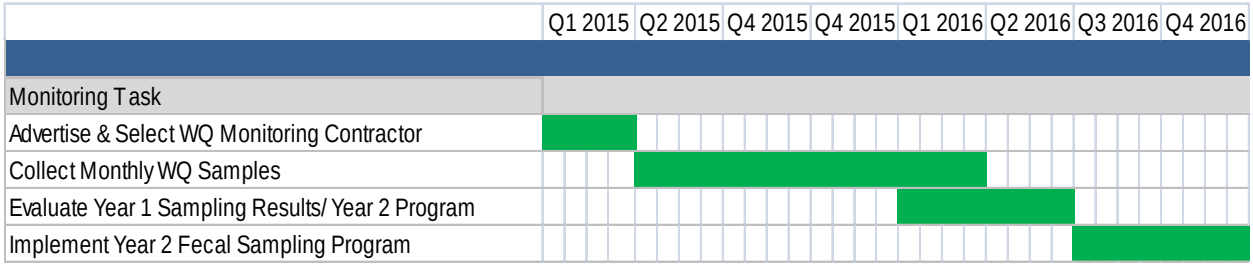
5.3 Data Trend Analysis

The City will analyze the collected fecal coliform and TSS water quality data using separate excel spreadsheets. A simple plot of the results plotted on the y-axis with the dates from first to last on the y-axis will be used. The plot will allow for the identification of trends. Any known sanitary sewer overflows can be correlated with the fecal coliform sampling results. Additionally, the fecal coliform analysis will show the summer and winter averages.

5.4 Monitoring Implementation Schedule

The proposed monitoring implementation schedule is presented below. The schedule shown in Figure 5-7 includes time needed by the City to advertise and secure a contractor and/or laboratory to perform the monitoring outlined within this Plan.

Figure 5-7. Water Quality Monitoring Implementation Schedule



6.0 Proposed Best Management Practices (BMPs)

Both fecal coliform bacteria and sediment are tough parameters to address. The City's phased approach reflects the complexity and dynamics associated with both of these parameters. For example, studies have shown that no single BMP type is able to consistently reduce bacteria to levels below summer standards and in some instances structure BMPs can even increase the levels of fecal coliform bacteria because they provide habitat for wildlife. Gwinnett County has been studying sediment loads in their county and found that most of the sediment is either legacy or instream and the ability to distinguish between the two loads is difficult. The phased and adaptive approach suggested in this Impaired Waters Plan will allow Dunwoody to advance their approach based on data. A few specific BMPs are recommended:

1. **Continued coordination with DeKalb County Watershed Management Department.** As noted in this Impaired Waters Plan, DeKalb County is evaluating the sanitary sewer system in both the Ball Mill Creek and Marsh Creek watersheds. The Nancy Creek watershed has already been classified as a priority watershed for rehabilitation. It is likely that the fecal coliform levels in these watersheds will reduce as DeKalb County continues to rehabilitate their system.
2. **Continued Public Education and Outreach.** One source of fecal coliform bacteria in suburban areas, similar to the three impacted watersheds, is domestic animal waste. There are a number of campaigns including the Clean Water Campaign's "Here's the Scoop" brochure (shown on the right). Distributing these in partnership with local domestic animal providers (veterinary clinics, pet food stores, groomers, and trainers) could help distribute the information in a targeted fashion. These brochures are available either for free or for a reduced cost from the Metropolitan North Georgia Water Planning District. Many communities in the region have also elected to install pet waste stations in public parks and require pet waste stations in multi-family developments. Some communities have partnered with single-family neighborhoods to install these in appropriate areas. Even if domestic animals are not the source of the fecal coliform bacteria, educating pet owners on their responsibilities to protect the community may be an important message.

3. **Continued Illicit Discharge Detection and Elimination.** As part of Dunwoody's MS4 permit, the city performs inspections of industrial and commercial facilities on a rotating basis. Confirmation that facilities that cater to domestic animals are following best practices is one aspect of these inspections. Similarly, the City through the ongoing asset management program and MS4 outfall inspection program are looking for areas where illicit discharges may be occurring to the stormwater system. These will be addressed as found by the City during these routine inspections.
4. **Continued Implementation of Ordinances for new developments and redevelopments.** While it is difficult to control the migration of historic sediment through a watershed, it is relatively easy to control the new contribution of sediment into waterbodies. The City has an active Erosion and Sediment Control program that includes plan review and inspections throughout construction. Working closely with the development community to limit the sediment that enters local waterbodies helps limit the sediment impact to fish habitat. Instream sediment loads from bank erosion is drawing greater attention in metropolitan Atlanta and several communities are performing bank studies to better estimate the contribution. Ensuring new developments have the proper post-development stormwater controls that mitigate peak flows will reduce the bank erosion that is common in more urban stream systems.

With the data available and the ongoing work by DeKalb County's Watershed Management Department, these ongoing BMPs are seen as the best strategies for protecting water quality in Dunwoody. As additional monitoring is performed, additional BMPs or other Watershed Improvement Projects may be added based on the result of that data.

APPENDIX A: DEKALB COUNTY PRIORITY SEWER REPAIR AREAS

APPENDIX B: REVISED TOTAL MAXIMUM DAILY LOAD EVALUATION FOR SEVENTY-NINE STREAM SEGMENTS IN THE CHATTAHOOCHEE RIVER BASIN FOR FECAL COLIFORM

APPENDIX C: DEKALB COUNTY WATERSHED MONITORING DATA

APPENDIX D: SANDY SPRINGS WATERSHED IMPROVEMENT PLAN

APPENDIX E: PRESS RELEASE REGARDING DEKALB COUNTY AGREEMENT WITH EPA, EPD

APPENDIX F: TOTAL MAXIMUM DAILY LOAD EVALUATION FOR TWENTY-FIVE STREAM SEGMENTS IN THE CHATTAHOOCHEE RIVER BASIN FOR SEDIMENT (BIOTA IMPACTED)

City of Dunwoody Georgia

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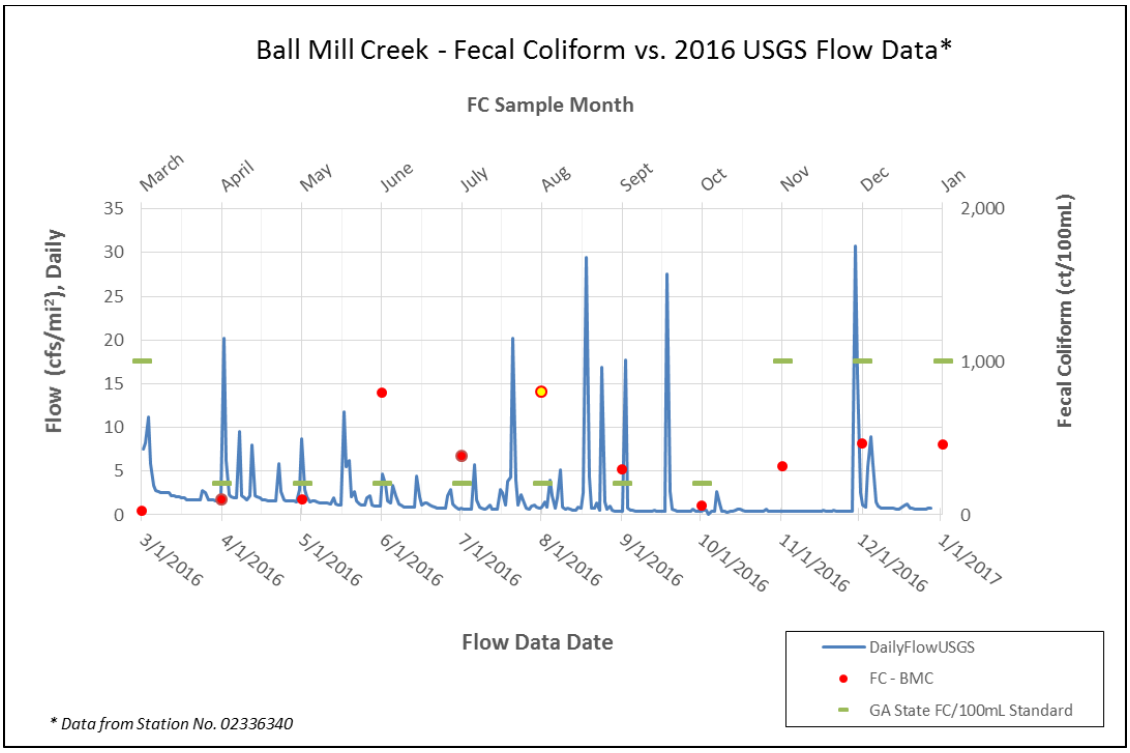
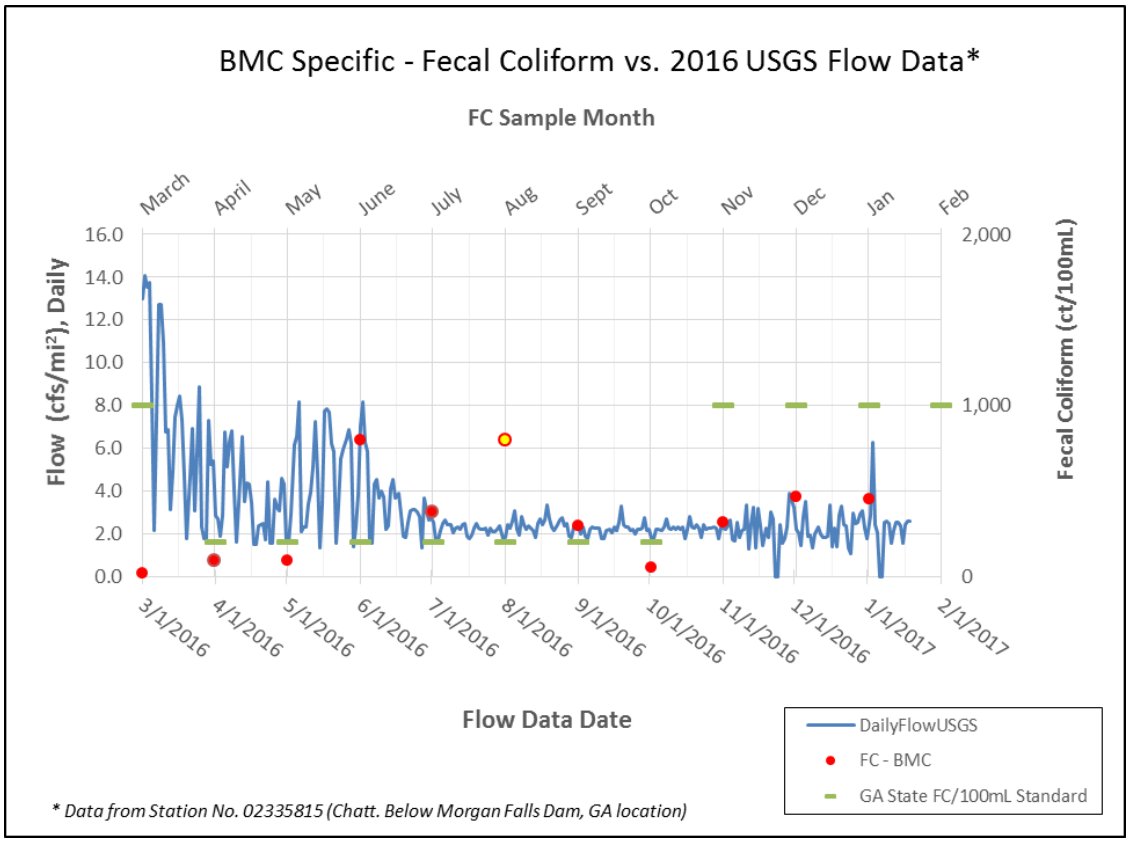
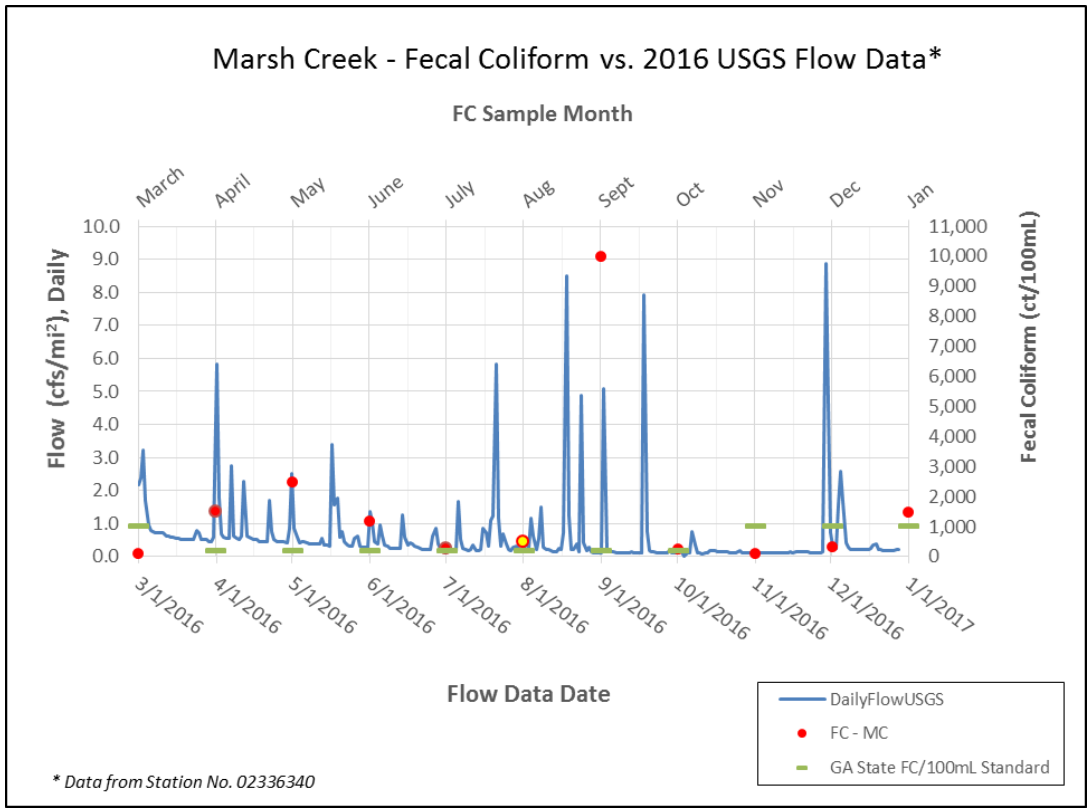
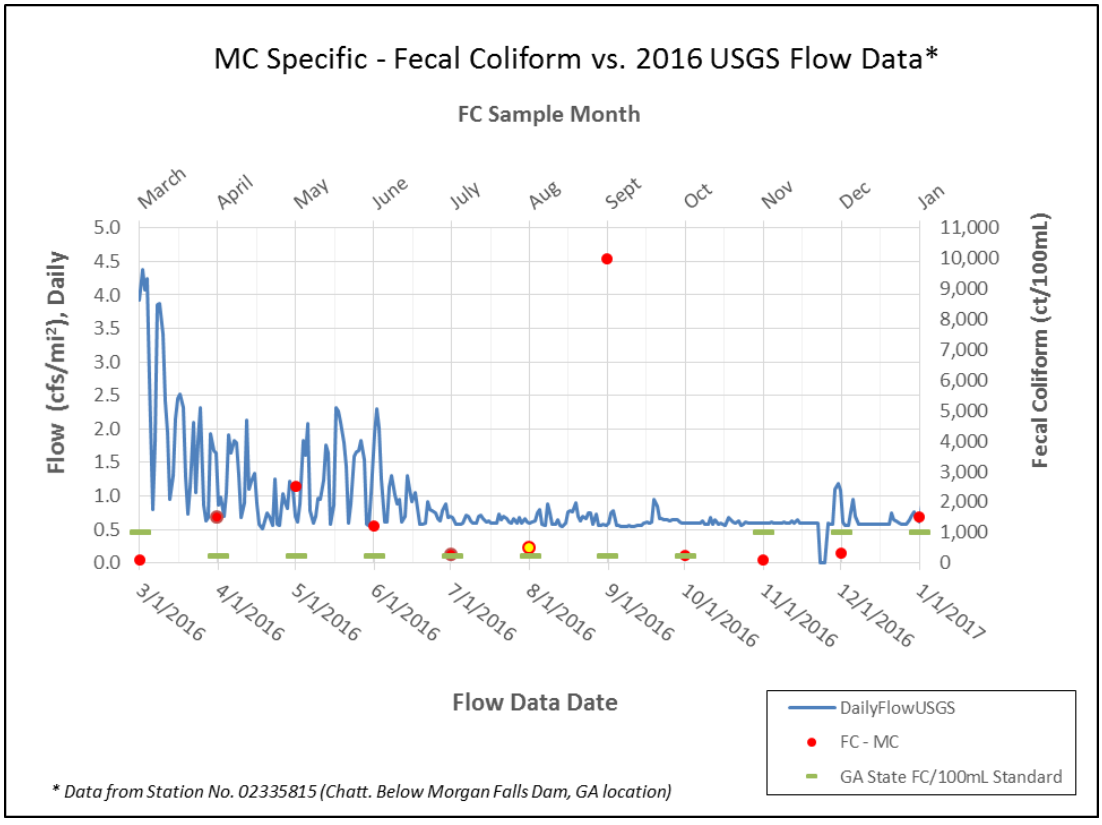
Appendix B(i)

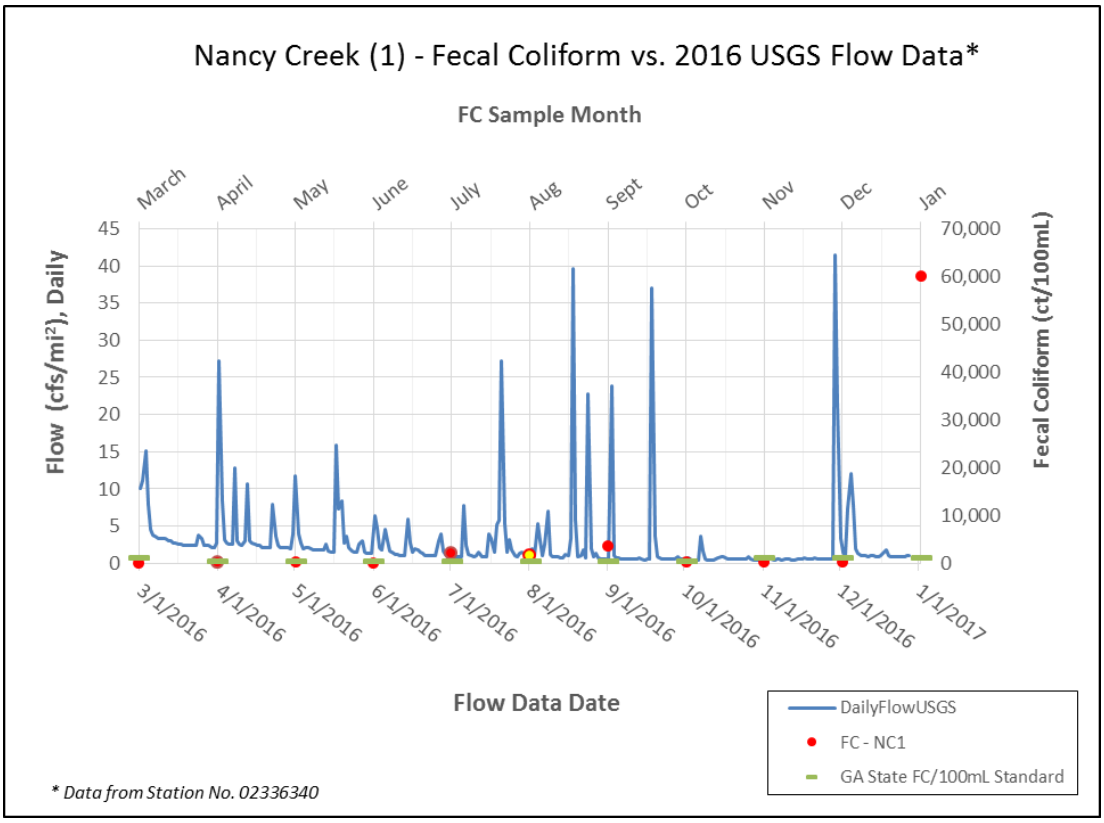
Impaired Waters Plan 2012-2017 *Data*

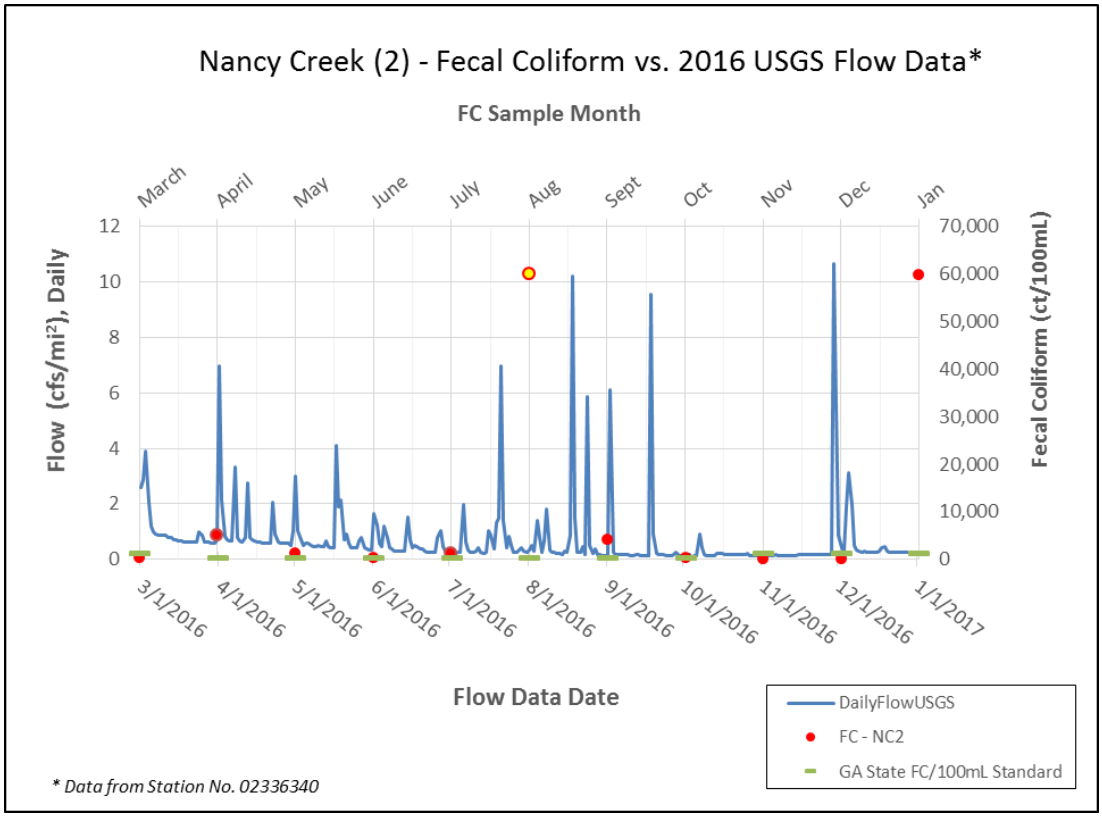

Ball Mill Creek - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
Flow Data Date
DailyFlowUSGS
FC - BMC
GA State FC/100mL Standard
* Data from Station No. 02336340


BMC Specific - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Feb
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
Flow Data Date
DailyFlowUSGS
FC - BMC
GA State FC/100mL Standard
* Data from Station No. 02335815 (Chatt. Below Morgan Falls Dam, GA location)


Marsh Creek - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
3/1/2016
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
Flow Data Date
DailyFlowUSGS
FC - MC
GA State FC/100mL Standard
* Data from Station No. 02336340


MC Specific - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
3/1/2016
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
Flow Data Date
DailyFlowUSGS
FC - MC
GA State FC/100mL Standard
* Data from Station No. 02335815 (Chatt. Below Morgan Falls Dam, GA location)


Nancy Creek (1) - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
0
5
10
15
20
25
30
35
40
45
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
3/1/2016
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
Flow Data Date
DailyFlowUSGS
FC - NC1
GA State FC/100mL Standard
* Data from Station No. 02336340


Nancy Creek (2) - Fecal Coliform vs. 2016 USGS Flow Data*
FC Sample Month
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Flow (cfs/mi²), Daily
Fecal Coliform (ct/100mL)
0
2
4
6
8
10
12
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
3/1/2016
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
Flow Data Date
DailyFlowUSGS
FC - NC2
GA State FC/100mL Standard
* Data from Station No. 02336340

City of Dunwoody Georgia

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Appendix C

Linear Transportation Feasibility Program

The City is currently developing the Linear Project Feasibility Program to be completed and submitted to the EPD for approval in September of 2018.