



CONSOLIDATED GOVERNMENT
What Progress Has Preserved.

Columbus Consolidated Government
Department of Engineering
Stormwater & Floodplain Management Division

Stormwater Management Program 2017-2022
NPDES Phase I Medium MS4
Permit No. GAS000202

Columbus Consolidated Government
Stormwater Management Program (SWMP) - 2017

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Columbus Consolidated Government (CCG) Stormwater Management Program

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Stormwater Management Program Objectives:

This management program is designed to meet the requirements of 40 CFR 122.26, and in addition, satisfy the request of the Georgia Department of Natural Resources, Environmental Protection Division (GAEPD) that the Columbus Consolidated Government (CCG) consolidate their stormwater management activities, along with descriptions and implementation schedules for those activities, into a single document. Furthermore, this document intends to incorporate all aspects of Stormwater Pollution Control as outlined in Parts 1 and 2 of the GAEPD Phase I Stormwater permitting process. It includes the following:

- A description of local stormwater regulations;
- A comprehensive planning process that involves both public participation and intergovernmental coordination;
- A description of staff and equipment available to set up and assess the NPDES stormwater management program;
- Identification of structural controls and measures to be included in these proposed programs;
- A description of management practices, control techniques, and system design & engineering methods utilized to minimize pollutant loadings;
- Programs to control stormwater runoff from commercial and residential areas, construction/demolition/reconstruction sites, and industrial facilities;
- Inspection programs to detect and eliminate illicit discharges, and to control and prevent improper disposal of any substance other than unpolluted stormwater runoff and exempted flows into the storm sewer system;
- A description of CCG's Comprehensive Water Quality Monitoring programs to include 303(d) Impaired Waterbody Monitoring (**Appendix 7**);
- A description of the CCG's Public Information and Education Programs (**Appendix 8**)

3.3.1 Structural and Source Control Measures

Structural and Source Controls:

The objective of using structural and source controls is to reduce the concentration and subsequent impact of pollutants from commercial, residential, and industrial areas that enter the separate storm sewer system and eventually the Waters of the State. The Stormwater Management Plan will address controls through the Stormwater Ordinance, Georgia State Stormwater Design Manual, and other programs described in this document. Where controls are being utilized, CCG has the ability to collect samples and analyze data to determine whether those controls are effective in reducing pollutant loads. If a particular technology's reduction rates are not satisfactory, CCG will reevaluate the BMPs utilization and change requirements accordingly.

Watershed Lakes:

Current structural controls consist mainly of detention and retention ponds that have been developed in an effort to control both local and regional flooding. In 1959, Muscogee County, in cooperation with the Pine Mountain Soil and Water Conservation District, began a program to create regional flood attenuation lakes. Eleven of these Watershed Lakes were constructed and remain operational to this day. CCG is responsible for maintenance of the dams, surrounding areas, outlets and outlet controls, spillways and for the removal and disposal of silt from the lakes and forebays. Inspection and maintenance of these Lakes is performed per a predetermined schedule (**Appendix 3**).

Residential/Subdivision Stormwater Management Projects, Periodic and Pre-Acceptance Inspection Procedures:

Residential Stormwater Controls deeded to CCG are maintained by the Subdivision's Developer for a one to two year period before CCG becomes responsible for the facility's maintenance. An Engineering Inspector will conduct documented periodic inspections of these facilities every six months after construction of the Stormwater Control is complete. Inspections are performed by Department of Engineering staff are documented on an Inspection Form entitled, Subdivision Maintenance Periodic Inspection Report (a copy of this form is included in **Appendix 5** of this document). Corrective actions required by the Department of Engineering prior to acceptance will be communicated to the Subdivision's Developer by email/letter. Once CCG has accepted the stormwater management project by resolution, the Engineering Department will advise the Rainwater Management Chief (Public Works) to add the facility to the Maintenance Schedule. This notification is typically communicated to the Rainwater Management Chief by email and will include a copy of Resolution.

Private Stormwater Management Facilities (PSWMFs) Inventory and Inspections:

The Columbus Consolidated Government maintains an inventory of privately owned stormwater management facilities (ponds, underground vaults, parking lot detention, water quality BMPs, etc.). As a component of CCG's Separate Storm

Sewer Mapping Program, CCG’s Stormwater & Floodplain Management Division collects locations and attribute data for these private ponds and their outfalls. An abridged inventory of these structures will be included in CCG’s Annual Reports. Inspection of these privately owned and maintained flood control structures will occur at a rate identified in **Appendix 4** of this document. Initial inspection reports and follow-up documentation of these inspections will be included in each year’s Annual Report.

By CCG Ordinance, the owners/operators PSWMFs are required to inspect their facility(ies) twice per year. The first inspection is to occur from January-June and the second July-December. Owner/Operator must also maintain these facilities at least once per calendar year. A compliance report must be submitted to CCG during the month of January containing documents and date-stamped photographs demonstrating that the two inspections and maintenance were conducted. Failure to inspect, maintain or report is a violation of UDO 7.12.7. These requirements are applicable to both new and existing PSWMFs.

3.3.1.1 MS4 Control Structure Inventory

MS4 Inventory:

The Municipal Separate Storm Sewer System Inventory of Columbus currently is comprised of:

Structure Type	MS4 Inventory (as of 03/31/17)
Inlets/Catch Basins*	17712
Junction Boxes/Manholes	2039
Outfalls (closed**):	690
Ditches:	43.8 miles
Outfalls (open***):	49+
Storm Drain Lines	381 miles
Detention/Retention Ponds	76 (1 in Combined Sewer Area)

*For the purposes of this Stormwater Management Plan, the term inlet and catch basins will be used interchangeably.

**Closed system outfalls are where MS4 stormwater is discharged from a piped sewer within 50 feet of a watercourse shown on USGS’s Hydrology GIS layer.

Inlet and Junction boxes totals were determined by selection of those features in the complete storm sewer (MS4 plus private) inventory that lie within a 50 foot buffer of CCG street centerline GIS shapefile. Outfall totals were determined by selection of “outfalls” that lie within the 50-foot buffer of CCG’s GIS Hydrology layer. The pipes inventory is comprised of all separate storm sewer pipes that have been captured to date. As pipes are not point features, it is difficult to determine how many pipes are exclusively MS4 pipes. Therefore the total number of surveyed pipes and their collective length is reported.

Measurable Goal: CCG will update its MS4 Inventory each year and will report the revised totals in its Annual Report.

3.3.1.2 MS4 Inspection and Maintenance Program (Public)

Note: Also see **Appendices 3 and 4** of this document.

Storm Sewer System Inspections and Maintenance:

The Rainwater Management Division of the Department of Public Works is responsible for inspecting, cleaning and maintaining the components of the MS4 to include storm sewers, streams and drainage ditches, and at present, 76 Stormwater Management Facilities (detention/retention ponds). *Note: One of the 76 facilities is actually within CCG's Combined Sewer Area, not within the MS4.*

- **Storm Inlets/Pipe Networks:** For cleaning of the storm sewers and catch basins, the Division uses eight Vacuum trucks. Throughout the workweek, these trucks service areas in accordance with work orders. These work orders are generated as a result of either complaints from the public through either CCG's Citizen's Service Center (706-653-4000 or 311), preventative maintenance schedules, or as a result of inspection activities by Division personnel. On weekends, one crew will work within a given drainage basin, checking and cleaning, as needed, all of the inlets and pipes that could not be addressed during the workweek. In addition, on the weekends, the weekend crew will also clean inlets and pipes in the downtown area of Columbus.
- **Streams and Ditches:** CCG maintains streams and ditches for two primary reasons, the prevention of flooding and aesthetics. CCG's goal is to perform maintenance on ditches and streams once per year. This maintenance may include cutting/removal of growth, removing debris, grading of smaller ditches to insure the flow of water, and applying herbicides on stream banks to inhibit unwanted plant growth. Repair of outfalls (pipe sections, headwalls, etc.) into streams and ditches and the installation of erosion control measures at outfalls is also an important facet of this MS4 maintenance program. The repair and installation of these items is performed on an as needed basis. CCG is conscience of the need to maintain outlet and end-of-pipe structures to minimize erosion. CCG promptly repairs any outfall it identifies as presenting an erosion problem. Natural erosion of stream banks is an occurrence that CCG cannot prevent completely. However, CCG does attempt to stabilize sensitive areas with vegetation when possible, or with riprap or other artificial means when vegetation is not possible or practical. The inspection of MS4 ditches will occur at a rate specified in **Appendix 3** of this document.
- **Detention/Retention Ponds:** Since 1981, CCG has required private developers to construct runoff attenuation structures when developments will contribute a significant impact on water flow either upstream or downstream. Hundreds of

these structures, both large and small, above and below ground, have been constructed throughout CCG's approximately 150 square mile area (8 of which is within the CCG's Combined Sewer Area). Those structures created as part of a commercial or industrial development remain the responsibility of the developer or landowner to inspect and maintain. Those structures created as part of a residential development however, can be deeded to CCG and subsequently maintained (after a 2 year maintenance bond *or in some cases one year as per the Stormwater Ordinance*) by CCG forces. Those structures deeded over to CCG after the maintenance bond has expired that are accepted by the Columbus City Council are routinely inspected and maintained per the activity schedule included in **Appendix 3** of this document. An inventory of City owned and maintained flood control structures is included in **Appendix 3** of this document as well. Amendments to that inventory will be submitted to GAEPD in CCG's Annual Reports.

Measurable Goal: CCG will report both inspections and maintenance totals for its MS4 each year in its Annual Report.

3.3.1.3 Planning Procedures

Comprehensive Plan of 2028 (revised 2008):

Columbus' Comprehensive Plan is an ordinance, whose purpose is to provide guidance to local officials in their decisions concerning land use matters. Federal regulations require that Stormwater Management Programs describe how the Comprehensive Plan is compatible with the goals and objectives with the Stormwater Management Program. Columbus is currently utilizing a Land Use Plan that was revised and adopted in 2008.

Identify Management Objectives for Receiving Waters:

- Capacity of Natural Systems (summarized): It would be in the best interest of CCG to discourage development in areas where natural constraints are present including poor drainage, flooding, steep slopes, poor soil conditions, and other identified factors. The Storm Drainage and Land Development sections of the Unified Development Ordinance have been developed to provide a framework of both guidance and design expectations to design professional concerning the impacts of new development on drainage systems downstream. The Program will also provide an indication of the general capacity of the drainage system to accommodate various development intensities. CCG's adoption of the Georgia Stormwater Management Manual aids engineers in designing appropriate drainage systems and accommodate increased runoff from developments. The Zoning Ordinance and Subdivision regulations have been developed to discourage development in areas where adverse impacts to the environment are likely.

- Stormwater Drainage: It is the one of the goals of the SWMP to encourage drainage facility improvements where feasible, to limit development where drainage problems cannot be feasibly alleviated, and to minimize environmental impacts due to significant impervious area installation. Water Quality is monitored regularly throughout CCG per the schedule included in **Appendix 7** of this document. Over the course of time, trends in water quality be identified, and land use restrictions will be considered where the environment has been adversely impacted.

Stormwater Design Standards for Controls in New Developments and Significant Redevelopments:

- CCG adopted the Georgia State Stormwater Management Manual on July 1, 2003. A copy of this document (Volume 2) is available at:

www.gegiastormwater.org

This change did not require the Columbus Consolidated Government to adopt a new ordinance, as the current ordinance does not reference a specific guidance document, only that design standard as recognized by the Department of Engineering.

- CCG’s Project Design Standards are included in **Appendix 1** of this document.
- CCG’s Soil Erosion and Sedimentation Ordinance is included in **Appendix 1** of this document.
- CCG’s Land Development Regulations are included in **Appendix 1** of this document.

Measures to Minimize Effects of New Development on Stormwater Quality:

The current Columbus Water Works. Planning for the Future Master Plan for Water and Wastewater Treatment notes that the most serious threat to Columbus' drinking water supply is that of a hazardous material spill into the Lake Oliver Reservoir (CCG’s drinking water source) from specific points such as pipeline crossings. Nonpoint source pollution carried in stormwater runoff from urban areas is also a concern. The Master Plan made the following recommendations to assure protection of water quality:

- The Columbus Water Works should monitor point source NPDES wastewater permits;
- CCG should actively oppose any proposal to locate major hazardous or nuclear facilities in the upstream watershed;

- The Water Works should monitor land use trends and water quality of Lake Oliver to determine whether additional watershed protection measures (i.e. buffers and setbacks) are warranted along the Lake and tributaries;
- Special consideration should be given to the number and location of septic tanks adjacent to Lake Oliver;
- The Water Works should continuously monitor water quality at the raw water intake site and at the wastewater plant's discharge point;
- A comprehensive emergency response plan should be established by local governments to provide better investigation and follow-up actions for emergency spill incidents;
- The Water Works should investigate alternate sources of water for emergency use.

Other Environmental Ordinances:

Effective March 1, 2005 five environmental ordinances went into effect providing additional protection of CCG’s natural resources. These ordinances include:

- Water Resources Protection
- River and Stream Corridor Protection
- Watershed Protection
- Groundwater Recharge Protection
- Wetlands Protection

A copy of these ordinances is included as **Appendix 1** of this document.

Measurable Goal: Any changes to any Planning Document that has a direct bearing on the operations of CCG’s Stormwater Program will be described in the Annual Report.

3.3.1.4 Street Maintenance

This management measure involves incorporating pollution prevention techniques to reduce or eliminate pollutant loads from existing road surfaces as part of routine operations and maintenance. Substantial amounts of sediment, litter, and other pollutants are generated during daily roadway and bridge use and scheduled repair and resurfacing/reconstruction operations. These pollutants can threaten local water quality by contributing heavy metals, hydrocarbons, sediment and debris to stormwater runoff. Table 1 shows some of the polluting constituents that can be present in roadway runoff and their primary sources.

Constituent	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere

Nitrogen, Phosphorous	Atmosphere, roadside fertilizer application
Lead	Tire wear, automobile exhaust
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel roadway structures, moving engine parts
Copper	Metal plating, brake lining wear, moving engine parts, bearing and bushing wear, fungicides and insecticides
Cadmium	Tire wear, roadside insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubrication oil, metal plating, brake lining wear, asphalt paving
Manganese	Moving engine parts
Sulfate	Roadway beds
Petroleum	Spills, leaks, or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt surface leachate
Litter	Leaves, yard waste, trash from vehicles

As Table 1 demonstrates, there are numerous pathways for pollutant deposition on roadways and bridges that can influence the water quality of stormwater runoff. Routine performance of general maintenance activities such as street sweeping, vegetation maintenance, and cleaning of runoff control structures (inlets) can help alleviate the impacts of these pollutants. Modifications in roadway resurfacing/reconstruction practices can also help reduce pollutant loads to stormwater runoff and protect the quality of receiving waters.

Street Sweeping Operations:

The Beautification Division of the Department of Public Works is responsible for the Street Sweeping Program. The goal of this program is to minimize the accumulation of sediment, debris and litter in public streets and gutters, thereby reducing the amount of material entering into the storm sewer system.

This Division services approximately 1300 miles (2600+ lane-miles) of roads and bridges. The goal of the program is to sweep each paved residential street at least once per year. High Use arterials and collectors, I-185, and the downtown areas receive more frequent attention, due to their traffic densities and visibility. CCG, for this program, has been divided into eight districts (corresponding to City Council Districts) and at this time CCG currently operates six street sweepers. Material collected by the sweepers (leaves, sand, paper, etc.) is deposited in the Pine Grove Sanitary Landfill or is temporarily maintained in one of three holding areas.

Measurable Goal: The Street Sweeping Program’s activity estimates (pounds of debris removed, miles of street swept, etc.) will be included in each Annual Report.

Miles Swept Estimation Methodology:

Selected areas of known length are swept, noting the number of vacuum-motor operating hours required. Using the sweeper's odometer, monthly average miles per hour are calculated. Subsequent tracking of the number of operating hours accumulated during any month, a "miles swept" estimate can be estimated.

Pounds of Debris Removed Estimation Methodology:

Periodically, CCG's sweepers, are weighed when full and when empty. After several of these weighings have been completed, an average load's weight may be determined and multiplied by the number of dumps made during the reporting cycle to determine an estimate of the weight collected.

Road Resurfacing Reconstruction Practices:

Proper planning for road and bridge resurfacing operations is a simple but effective method to control pollution. There are a number of procedures that can and have been implemented to control the impacts of these operations to include dry weather only paving, spill minimization, inlet/manhole protection, and erosion/sedimentation control practices.

Resurfacing and Reconstruction activities performed by contractors working on publicly owned roadways adhere to the standards of practice as detailed in:

Department of Transportation State of Georgia Standard Specifications Construction of Roads and Bridges. 2013 Edition. Each contract CCG executes has within it this standard of practice requirement.

Projects associated with City contracts are routinely inspected by CCG's team of Engineering Inspectors. This activity is performed to insure that construction proceeds according to the approved plans (to include dry weather only paving, spill minimization, inlet/manhole protection, and appropriate E&S practices), terms of the contract, and specific construction requirements.

If the Engineering Inspector finds that Construction Plans are not being adhered to, they have the authority as Special Enforcement Officers to issue Stop Work orders, Warning tickets, or Citations as necessary.

Litter Removal Programs:

The Columbus Consolidated Government currently operates or contributes to three litter removal programs:

- Help the Hooch
- Prison Labor Crews
- Community Service Labor Crews

Help the Hooch is an annual creek and river litter clean-up event held in late September/early October. This event is organized and funded by several public and private entities to include: Columbus Consolidated Government, Columbus

Water Works, Keep Columbus Beautiful, Chattahoochee RiverWarden, Muscogee County School District, Columbus State University, and many others. It is the intent of the Help the Hooch Planning Committee to involve as many individuals and groups as possible for the purpose of not only picking up litter, but educating the community at the same time. On average, this event engages about 8,000 volunteers per year, the majority of whom are school-age children. Volunteers from Ft. Benning, area schools, civic and professional organizations, and individuals and groups from industry and businesses have participated in the effort to clean CCG's local creeks, streams, and the riverbanks. A summary of the number of man-hours performed and pounds of trash collected each year are included in the Annual Report.

The Columbus Consolidated Government Department of Public Works uses both *County, as well as, State inmate labor* to maintain Public Right of Ways to include grass cutting and litter pick-up on a daily basis. The Columbus Consolidated Government Department of Public Works Community Service Division schedules work for those sentenced to perform *Community Service* by the local judiciary. On average, 60-80 individuals work 8-hour days every weekend picking up litter along main thoroughfares and in those areas requiring special attention as determined by the Program Coordinator. A summary of the number of man-hours performed and pounds of trash collected will be included in our Annual Reports.

Measurable Goal: CCG's Litter Removal activity estimates (pounds of debris removed, volunteers, volunteer hours, Community Service Hours, etc.) will be included in each Annual Report.

3.3.1.5 Flood Management Projects

New Development:

The Columbus Consolidated Government has been granted Land Disturbance Permit Issuing Authority by GAEPD and has a Memorandum of Understanding with the Pine Mountain Soil and Water Conversation District (**Appendix 6**) to review E&S plans, allowing CCG's Engineering Department to review development plans and issue permits for both minor and major land disturbing (site development) activities and to review development designs for other elements as they pertain to local ordinances. CCG's Engineering Department furthermore has the authority to enforce the Soil Erosion and Sedimentation Ordinance (**Appendix 1**) and issue stop work orders, warning tickets, and citations to violators.

Current development requirements state that Engineers or Landscape Architects must include Storm Water Management Plans with each set of plans they submit for review that are consistent with the requirements of the Georgia State Stormwater Management Manual. This guidance document requires that Stormwater structures (i.e. detention/retention ponds, underground storage, vortex

separators) effectively treat the "first flush" (first 1.2 inches of runoff). Stormwater Management Plans are reviewed for these requirements and in some instances connections or additional measures may be requested. Once all conditions for stormwater control are met, the developer is issued a permit. After the permit is issued, the Engineering Inspector that supervises the area containing the development receives a copy and the enforcement process begins.

Existing privately owned and operated stormwater management controls are inspected periodically to insure that they remain in working order. The checklist used for this program is included in **Appendix 5**.

Stormwater Controls constructed in conjunction with a subdivision are normally deeded over to the Columbus Consolidated Government after a two-year period. It is then CCG's responsibility to routinely inspect and maintain those facilities as necessary to insure that they remain in proper working order. Stormwater Controls associated with Commercial or Industrial activities are not deeded to CCG and are therefore the responsibility of the owner to maintain. CCG's Engineering Department maintains an inventory of both publicly and privately owned stormwater management facilities. An inventory of City owned and maintained stormwater control structures is included in **Appendix 3** of this document. Any additions and changes to that inventory will be submitted in CCG's Annual Report package.

By CCG Ordinance (effective January 1, 2016), the owners/operators of PSWMFs are required to inspect their facilities at least twice per year. The first inspection is to occur from January-June and the second July-December. Owner/Operator must also maintain these facilities at least once per calendar year. A compliance report must be submitted to CCG during the month of January containing documents and date-stamped photographs demonstrating that the two inspections and maintenance were conducted the prior calendar year. Failure to inspect, maintain or report is a violation of UDO 7.12.7. These requirements are applicable to both new and existing PSWMFs.

3.3.1.6 Municipal Waste Facilities (excluding any facilities addressed in Section 3.3.3

- Construction and Demolition Sites: The Pine Grove landfill has within it a construction and demolition (C&D) landfill. Cells within this landfill (sanitary and C&D) are separated by roads, which form berms. This C&D site receives waste from demolished structures only.

Disposal Policy:

Due to the joint location of the sanitary landfill and the C&D disposal site, the dumping operation is strictly supervised to ensure that there is no intermixing of C&D material and sanitary waste. If landfill personnel at the weigh station

have doubts about the content of the load, the carrier is directed to the sanitary site. Since July 1, 1993 no mixed loads have been accepted, to include those of City crews. All mixed loads must be separated and disposed of accordingly. CCG realizes with the implementation of that policy that private waste haulers may elect to dump material illegally. CCG's Special Enforcement Division (Public Works) is prepared to meet that challenge and will enforce CCG's Codes concerning illegal dumping as well as the Stormwater Ordinance.

Measurable Goal: Should CCG add or close any Municipal Waste Facility doing the reporting period, a notation will be included in the subsequent Annual Report.

Inert Landfill #1 (Granite Bluff):

Inert Landfill Site #1 is located in northwest Columbus in an old rock quarry. The area associated with the landfilling activities does not discharge to a water of the State. The surface runoff that does leave the site flows through a sediment basin and then a short distance in a ditch to the Chattahoochee River. Because the areas associated with the industrial activity have no discharge points to Waters of the State, a Notice of Intent for GAR050000 has not been submitted to GAEPD, nor is the facility inspected by Engineering Department staff.

Inert Landfill Site #2 (Oxbow Meadows, closed):

Inert Landfill Site #2 is located in south Columbus with the Chattahoochee River floodplain. The disposal site is located on land previously mined for sand and gravel. It consists of several pits, some originally twenty feet in depth. Inert waste has been deposited in these pits for several years. This disposal process has resulted in the creation of a forested wetland. Groundwater and surface water samples are routinely monitored for pollutants. Analysis Summaries Reports for those samples are kept on file with the Director of Public Works. Because the areas associated with the industrial activity have no discharge points to Waters of the State, a Notice of Intent for GAR050000 has not been submitted to GAEPD, nor is the facility inspected by Engineering Department staff. This facility was closed in 2013.

Recycling/Sustainability Center:

CCG's Recycling/Sustainability Center is located in east Columbus, close to the Pine Grove Landfill (8001 Pine Grove Way). The facility consists of an office building with classrooms and a large metal structure where recyclables will be handled and packaged for shipping.

Measurable Goal: CCG will update its inventory of Municipal Waste Facilities each year and will conduct inspections of these facilities at least once per permit cycle. Documentation of these inspections and the revised inventory will be provided in each Annual Report.

3.3.1.7 Municipal Facilities with the Potential to cause pollution excluding any Facilities addressed in 3.3.1.6 or 3.3.3

Wastewater Treatment Plant (owned and operated by Columbus Water Works):

The Columbus Water Works operates a wastewater treatment plant located at 3001 South Lumpkin Road. The entire site is graded as not to allow off site discharge of runoff. All runoff at this site is directed to the head of the plant for treatment and subsequent discharge to the Chattahoochee River. Though a Notice of Intent was filed for this facility, it was done so in error. It has been recommended to Columbus Water Works staff that a Notice of Termination for the facility be completed and forwarded to GAEPD. Inspection details for this facility are recorded on an Industrial Stormwater Discharger Inspection form (a copy of this form, and other inspection forms associated with this Stormwater Management Program can be found in **Appendix 5** of this document).

Water Treatment Plant (owned and operated by Columbus Water Works):

The Columbus Water Works operates a drinking water production facility on River Road. A Stormwater Pollution Prevention Plan has not been developed for this facility because it does not qualify for coverage under the General Stormwater Discharge permit associated with Industrial Activities. This facility is inspected once per permit cycle for compliance with the Stormwater Ordinance requirements. The facility manager will be given recommendations at the time of inspection on instituting additional stormwater pollution prevention BMPs as necessary.

Other Facilities:

The Columbus Consolidated Government operates several facilities that will require inspection and possible implementation of stormwater best management practices. Warrants for BMPs will be based on the findings of those inspections. These facilities include:

- Street Sweeping Temporary Holding Areas (3)
- Fleet Maintenance Yard (Cusseta Road)
- Heavy Equipment Maintenance Yard (at Pine Grove Landfill)
- Parks and Recreation Fertilizer/Pesticide Storage Area (Cusseta Road)

A standard Industrial Stormwater Discharger Inspection Form will be used as the documentation tool for these inspections. Any photos taken will be included as part of the digital document (forms and photos will be scanned and saved as pdf documents for archiving).

Measurable Goal: Stormwater Management Division personnel will inspect each of these facilities at least once per permit cycle. Copies of the inspection forms and any follow-up documentation will be provided in the Annual Report.

3.3.1.8 Pesticide, Fertilizer and Herbicide Application

Herbicide Program:

CCG operates herbicide trucks that are used in roadside and ditch spraying. CCG chemical applicators are licensed by the State of Georgia to apply herbicides. Careful attention is of course paid to the quantities of chemicals applied. The Herbicide teams actively spray during warmer months (April-July). The objective is to control and keep dormant the growth of specific weeds that inhabit maintained areas. The team has been specifically trained in proper procedures of application but common sense is stressed as a safety measure both to the public and to team members.

- Training of Herbicide Team: Chemical Applicators attend initial training upon their hire and attend continuing education classes provided the University of Georgia's Cooperative Extension Service or other similar provider. Applicator's certification profile (available online through the Georgia Department of Agriculture's website, records of training (initial and/or continuing education) will be included in each year's Annual Report.
- Herbicides Used: The primary herbicide used by CCG's herbicide crews is Glyphos (Round-up). Application methods consist of overlapping sprays until full coverage is achieved. Herbicide dilution and application rates comply with Local, State and Federal guidelines.
- Herbicide Inventory: The Columbus Consolidated Government will inventory its store of herbicides annually to calculate quantities on hand on the date of the inventory. CCG Divisions that utilize herbicides include Rainwater Management, Beautification and Parks & Recreation.

Outreach to Commercial Facilities concerning Pesticide and Herbicide Application:

CCG has produced two information brochures entitled "Rules of Thumb... Pesticide & Herbicide Use" and "Lawns, Gardens and Stormwater, Best Management Practices". These brochures will be included with CCG's Annual HVPS, PSWMFs and Industrial Stormwater mailouts.

Performance Measure: An Herbicide/Pesticide/Fertilizer Inventory will be included in each Annual Report, as will copies of educational materials and mailing lists for the Outreach Program.

A printout from the Georgia Department of Agriculture's website, displaying each of the CCG's chemical applicators licenses (with status) will be provided in each Annual Report.

3.3.1.9 Municipal Employee Training

In-house Training

Licensed applicators are required to accumulate Continuing Education credits to keep their licenses active. Records of Continuing education are maintained by the Department of Public Works and are available by request.

Training Program for Municipal Employees that Addresses Runoff:

Each year Michael Burgess, Stormwater and Floodplain Management Chief conducts one initial certification and one refresher course for Level 1A Erosion and Sedimentation Control. Engineering and Public Works (Landfill, Right-of-Way Maintenance, Rainwater Management, and others) Department employees are encouraged to attend this training.

Each Reporting Year employees of the Pine Grove Landfill receive specific training in one or more areas of the Industrial Stormwater Discharge Permit per the facility's SWMP.

Each Reporting Year employees of CCG's Fleet Maintenance Facility (Cusseta Rd) receive specific stormwater training per the facility's SWMP that was developed as a result of USEPA's Administrative Order on Consent CWA-04-2016-4478.

CCG has developed and implemented an Employee Training Program based on requirements identified in USEPA's Administrative Order on Consent (CWA-04-2016-4778). This program specifies the types and audiences for training ensuring that CCG employees have a level of knowledge commensurate with their duties associated with CCG's infrastructure and MS4 responsibilities. The narrative describing this program can be found in **Appendix 8** that accompanies this document.

Performance Measure: Written/Digital training materials and rosters of those attending these training sessions and the licensure status of each CCG Chemical Applicator will be included in each year's Annual Report.

3.3.2 Illicit Discharge Detection and Elimination Program (IDDE)

The goals and objectives of this program are to:

- Detect and locate nonpoint sources of pollution that could affect the water quality of CCG's local streams, lakes, and waterways;
- Control nonpoint sources of pollution to these waterways;
- Increase public awareness of the importance of clean water both for the health and welfare of the community and for the sustained economic growth of Columbus;
- Enlist public support in the clean-up and maintenance efforts along CCG's local streams, lakes, and waterways;
- Establish a database of existing water quality with Columbus, using it as a gauge of BMP effectiveness;
- Locate illicit discharges and improper disposal of liquids or solids and eliminate these sources of pollution;
- Assess the conditions of stream banks, bottoms, and surrounding drainage areas for stability, the presence of vegetation and insure proper flow is maintained. When problems of erosion, excess vegetation, or stream blocking by natural or manmade items are encountered, they will be reported to the Department of Public Works for corrective action;
- Map the storm sewer systems and incorporate that data into CCG's GIS to be used for planning of future developments and for tracing illicit discharges.

Enforcement of the Program:

The Columbus Consolidated Government's Stormwater Ordinance (**Appendix 1**) went into effect on March 1, 2005. In addition to inspecting construction sites for E&S violations, CCG's Engineering Inspection team has been trained to also look for Stormwater Ordinance violations.

The Columbus Consolidated Government has an Environmental Court to hear cases involving alleged violations of CCG's Environmental Ordinances. For more information about the new Environmental Court, please contact Drale Short, Special Enforcement Chief (Department of Public Works) at 706-653-4160.

CCG has authority to require removal of illicit discharges from the storm sewer based on approved Codes and Ordinances. The Department of Engineering has sworn Enforcement Officers who are qualified to issue Summons to the Environmental Court. Details concerning CCG's Enforcement of its Environmental Ordinances can be found in its Enforcement Response Plan, included as **Appendix 11** of this document.

CCG's IDDE program currently consists of the following components:

- Field Screening Analysis Program

- Storm Sewer Mapping Project
- CreekWalk Surveys
- Industrial Discharger Inspections
- Highly Visible Pollutant Source Inspection Program
- Closed Circuit Television of CCG's MS4 Infrastructure

Field Screening Sites and Testing Procedures:

CCG's Stormwater & Floodplain Management Division maintains a catalog of field screening outfalls that is updated annually.

CCG's Sampling Quality Assurance Plan (SQAP), approved by GAEPD in January 2013 is included in **Appendix 7**. A letter from GAEPD stating that CCG's SQAP is acceptable can also be found in **Appendix 7** of this document.

At each of these sites, at least once per permit cycle, and at a rate of not less than 20% per year, we will conduct a field screening examination. This examination will compose of the following tests and measurements and will only be conducted after a 3-day period of no rainfall (<0.10inches, in order to insure that only non-storm flows are present) occurs:

- Discharge (Trickle, Slight, Moderate)
- pH (s.u.)
- Surfactants (as MBAS, mg/L)
- Turbidity (NTU)
- Temperature (°C)
- Fluoride (mg/L)
- Conductivity (uS/cm)
- Odor (Presence/Absence)
- Color (Presence/Absence)
- Sheen (Presence/Absence)
- Foam (Presence/Absence)

Performance Measure:

Summaries of the Observations, measurements, investigation notes, and analysis results derived from this program will be included in each Annual Report for that permit year. An updated inventory of Field Screening Outfalls will also be included in each Annual Report.

Testing Kits and Probes

Analyses for this program will be conducted using the following equipment or its equivalent:

- pH/Conductivity/Temperature – Oakton Multimeter PCSTestr35
- Fluoride – HACH Pocket Colorimeter II (SPADNS)

- Turbidity – HACH 2100P Turbidimeter
- Detergents/Surfactants – Chemetrics Detergents Kit with Comparator

Storm Sewer Mapping Project:

The Columbus Consolidated Government has two Leica 500 GPS units to map its MS4. As of March 2017, approximately 27000 structures have been mapped.

Performance Measure:

An updated Storm Sewer Inventory will be included in each Annual Report.

CreekWalk:

The CreekWalk Program has since its inception has taken place every Fall (October-November). This activity, normally requiring three City employees (Stormwater and Floodplain Management Division staff) inspects Columbus' creeks and lakes looking for:

- Illicit discharges to the creeks and/or lakes
- Obstructions to flow/Dumping
- Erosion problems
- Failed storm sewer system structures (headwalls, flared end sections, etc.)
- Leaking sanitary lines/Overflowed manholes

The Stormwater & Floodplain Management Division will perform this activity a minimum of three times each Permit cycle for 15 creeks, per a schedule shown on **page 24** of this document.

Weracoba Creek however, will be walked every year as it has a historical and ongoing water quality challenge. Weracoba Creek will be examined yearly until such time as water quality monitoring demonstrates it to be meeting State Water Quality standards.

The fifteen waterways to be examined include:

- Brookstone Creek
- Bull Creek
- Carver Creek
- Cooper Creek
- Dram Branch
- Double Branch Creek
- Hunter Creek
- Flat Rock Creek
- Lindsay Creek

- Mill Branch Creek
- Roaring Branch Creek
- Rocky Creek
- St. Mary's Creek
- Turkey Creek
- Weracoba Creek

CreekWalk Schedule:

CreekWalk examinations will occur per the following schedule:

Creek Name	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Brookstone	x	x		x	
Bull		x	x		x
Carver	x		x	x	
Cooper		x		x	x
Dram Branch	x		x		x
Double Br.	x	x		x	
Flat Rock		x	x		x
Hunter	x		x	x	
Lindsay		x		x	x
Mill Branch	x		x		x
Roaring Br.	x	x		x	
Rocky		x	x		x
St. Mary's	x		x	x	
Turkey		x		x	x
Weracoba	x	x	x	x	x
Total per Year	9	9	9	9	9

Performance Measure:

A report outlining the nature and locations of problems will be generated after the CreekWalk has been completed and forwarded to the Department of Public Works for corrective action. This information will be included in each year's Annual Report.

3.3.2.1 Legal Authority

The Council of the Columbus Consolidated Government adopted the Unified Development Ordinance in March of 2005. Chapter 7, Article 12, Section 3 of this document covers prohibited discharges and illicit connection to the separate storm sewer system. Chapter 8, Article 6 allows for City staff on enter private property for the purpose of inspecting private stormwater management facilities.

Performance Measure:

If this ordinance is revised, a copy of the updated ordinance will be included in the Annual Report.

3.3.2.2 Outfall Inventory/Map

An FSA Outfall Map is included in **Appendix 10** of this document.

Performance Measure:

An updated FSA Outfall Inventory will be included in each year's Annual Report. *Note: Updates to the Storm Sewer Inventory have not been finalized since the last update and were not available at the time this SWMP was produced.*

3.3.2.3 IDDE Plan

The Columbus Consolidated Government Department Engineering Stormwater & Floodplain Management Division will utilize the following programs in its effort to identify and eliminate non-stormwater discharges to the MS4 and waters of the State of Georgia. CCG's IDDE Plan document is included as **Appendix 12** of this document.

- Field Screening Analysis of MS4 Outfalls
- Closed Circuit Television of MS4 pipe networks
- CreekWalk
- Citizen Complaints
- Referrals from other 311, other City Departments and the Columbus Water Works
- Industrial Stormwater and HVPS Inspections

3.3.2.4 Spill Response Procedures

The Columbus Fire/EMS Department under the control of the Columbus Public Safety office, staffs a Hazardous Materials Response Team, HAZMAT, that operates from Station #6, which is centrally located within CCG. The team operates 24 hours a day, 7 days a week. When a chemical spill, vehicular accident, or any other event occurs that could potentially endanger lives or the environment, the HAZMAT team is deployed and takes appropriate actions to isolate and subsequently remove the contaminants from the area if possible. The team is armed with equipment to accomplish these goals and can mitigate most emergencies involving eight of the nine classes of Hazardous Materials (excluding radioactive materials). Capabilities include:

- Identification of known and unknown chemicals with combustible gas instrumentation, vapor sampling tubes, and other identification devices
- Solidification

- Neutralization
- Emulsification
- Containment/ Confinement
- Decontamination

When the spilled substance is identified, appropriate actions are taken first to contain the substance, and if necessary, GAEPD, the Department of Engineering, and Columbus Water Works are notified of the situation.

HAZMAT has the authority to enter private property while tracing the source of a suspected hazardous material. This authority is given to them by the same City Code that allow Police Officers to enter when the health and safety of the public is in question.

3.3.2.5 Public Reporting Procedures

The citizens of Columbus have the ability to report any water quality or flooding problems/concerns to CCG's Citizens' Service Center (706-653-4000 *or* 311). These telephone numbers are displayed on the majority of City vehicles as well as on CCG's Public Access Television Channel, CCGTV. Each year, the Stormwater & Floodplain Management Division has ink pens and other promotional items printed up displaying the Citizen's Service line as the one to contact in case of spills, etc. These pens and other items are given away at Environmental functions as well as being available at CCG's Engineering office.

Performance Measure:
Complaints and resolutions of the same that are received (related to illicit discharges, dumping, erosion/sedimentation complaints, etc.) will be included in each year's Annual Report.

3.3.2.6 Proper Management and Disposal of Used Oil and Toxic Materials

CCG's Sanitation Division (Public Works) offers a curbside pickup service for used oil and antifreeze. The public information and education program associated with this service is comprised mainly of brochures and public service announcements on CCG's Public Access Channel, CCGTV.

Performance Measure:
The numbers and types of educational literature distributed associated with this program will be submitted as part of CCG's Annual Report package.

3.3.2.7 Sanitary Sewer Infiltration Controls

The Columbus Consolidated Government does not own nor does it operate the sanitary sewer collection system in Columbus, GA. This system is owned and operated by the Columbus Water Works (CWW).

Performance Measure:

CCG will provide in its Annual Report each year a table of sanitary sewer overflows/spills detailing the date of the spill, quantity spilled and the receiving water. CCG will also provide the number of pipe sections videoed by the CWW to detect inflow/infiltration/seepage.

3.3.2.8 Municipal Employee Training

Employees of the CCG's Stormwater & Floodplain Management Division attend a variety of training sessions each year. Employees attend conferences put on by the Georgia Association of Water Professionals, FEMA and the Georgia Soil and Water Conservation Commission, the Georgia Association of Floodplain Management, etc.

CCG has developed and implemented an Employee Training Program based on requirements identified in USEPA's Administrative Order on Consent (CWA-04-2016-4778). This program specifies the types and audiences for training ensuring that CCG employees have a level of knowledge commensurate with their duties associated with CCG's infrastructure and MS4 responsibilities. The narrative describing this program can be found in **Appendix 8** that accompanies this document.

Performance Measure:

Monies are allocated in each year's budget specifically for education/training and the amount is reported each year in the Annual Report. Details concerning any municipal employee training related to erosion/sedimentation control, water quality, NPDES regulatory compliance, etc. will be included.

3.3.3 Industrial Facility Stormwater Discharge Control

Industrial Discharger Inspections:

The Stormwater & Floodplain Management Division will perform Industrial Stormwater Discharger Inspections per the schedule in **Appendix 4** of this document. Industrial Dischargers will be inspected at least once per 5-yr permit cycle. A copy of the current Industrial Stormwater Discharger Inventory is included in **Appendix 4**.

Those industries that are to be inspected are those that have active GAR050000 (Stormwater Discharges associated with Industrial Activities) permits. Summaries of inspection results and follow-up information will be included in Annual Reports.

Industrial Stormwater Inspection Team:

CCG's Stormwater Inspectors will be the primary inspectors for this program. Normal inspections will be scheduled ahead of time (between 2 and 5 days) with the Facility's Manager, Environmental Engineer, or Maintenance Manager. Spot inspections or inspections prompted by a GAEPD request or citizen complaint will not be scheduled in advance. A copy of the inspection form that will be used by the Stormwater Inspector is found in **Appendix 5** of this document.

3.3.3.1 Industrial Facility Inventory

Industrial Discharger Inventory:

A current inventory of Industrial Dischargers will be maintained by Division staff and updated as necessary. Any changes that the Division becomes aware of (Facility shutdown, Change of SIC code, Change of Address, etc.) will be noted CCG's inventory will be updated accordingly. Resources that will be consulted to update this inventory each reporting year will include:

1. GAEPD's Industrial General Permit Notice of Intent List
2. GAEPD's No Exposure Exclusion List
3. CCG Business License Database (search for keywords and NAICS equivalent to the SIC identified in the Permit)

Performance Measure:

A copy of the most current Industrial Discharger/Potential Industrial Discharger inventory will be provided to GAEPD in the Annual Report. An additional copy will be provided to Georgia's Industrial Stormwater Discharge Coordinator on an annual basis.

3.3.3.2 Inspection/Monitoring Program

Industrial Stormwater Inspection Team:

CCG's Stormwater Inspector will be the primary inspector for this program. Normal inspections will be scheduled ahead of time (between 2 and 5 days) with the Facility's Manager, Environmental Engineer, or Maintenance Manager. Spot inspections or inspections prompted by a GAEPD request or citizen complaint will not be scheduled in advance. A copy of the inspection form that will be used by the Stormwater Inspector is found in **Appendix 5** of this document.

Inspection Prioritization:

Prioritization for inspections will be based on the following criteria:

1. Duration since the last inspection
2. A variety of industrial sectors
3. The facility's potential to contribute pollutants of concern to listed impaired waterbodies
4. Findings from the facilities' annual compliance reports that are required by local Ordinance to be submitted to CCG

Purpose of the Industrial Stormwater Inspections:

Due to the fact that CCG does not have the authority to enforce the specific terms and conditions of the GAR500000 Industrial Stormwater Discharge permit, one goal for this Inspection Program is to provide education to each industry's Pollution Prevention Team in how to achieve, and maintain compliance with the permit and with Columbus' Stormwater Ordinance and other Environmental Ordinances. This education process will be both verbal (during the inspection) and written (follow-up letter). Copies of the inspection reports and follow-up communication will be included in each year's Annual Report. CCG's Stormwater Inspectors have several options as far as the Enforcement of the Stormwater Ordinance is concerned. If at all possible, it would be initially preferable to handle matters of noncompliance informally, without resorting to the Court system, but that recourse will be taken if appropriate. In addition to verbal correction, CCG's Stormwater & Floodplain Management Division Inspectors use written Warnings and Citations as appropriate. A log of both Written Warnings and Citations is included in CCG's Annual Reports.

Inspection Documentation:

During each Industrial Stormwater Inspection, CCG Inspection personnel will at a minimum complete CCG's Industrial Stormwater Inspection form identifying deficiencies and corrective actions necessary to comply with CCG's local Stormwater Management Ordinance. In the event that the State Permit has been potentially violated or the facility's conditions indicate that it no longer qualifies for Non-Exposure Exclusion status, the owner/operator of the facility and GAEPD personnel will be notified in writing within 30 days of the identification of such potential violations. Violations of CCG's local Stormwater Management Ordinance will be addressed per the Enforcement Response Plan.

Monitoring Program:

CCG will require an Annual Report from every facility with coverage under the GAR5000000 Industrial Stormwater Discharge Permit. The content of these reports (deadlines for submittal, certification, etc.) has been identified within an Ordinance Revision. Upon receipt, CCG staff will review these reports and will prepare a summary for EPD. These reports and the summary will be forwarded to EPD each year in CCG's Annual Report.

Performance Measure:
CCG will provide GAEPD with copies of inspection reports, follow-up correspondence and enforcement documentation each year in its annual Report.

CCG will collect, review and provide a summary of the Industrial Stormwater Discharger Annual Compliance Reports each year in CCG's MS4 Annual Report.

3.3.3.3 Enforcement Procedures

Enforcement procedures for Stormwater Ordinance violations documented at industrial facilities are described in CCG's Enforcement Response Plan, **Appendix 11** of this document.

Performance Measure:
A list of enforcement actions taken and their outcomes will be provided in the Annual Report.

3.3.3.4 Educational Activities

The Columbus Consolidated Government's Stormwater & Floodplain Management Division has developed and will mail each year an assortment of educational materials covering the areas of sector-specific BMPs and the Georgia Industrial Stormwater Discharge Permit. Each industry on the active inventory will receive a packet of educational materials each year.

Performance Measure:
Copies of educational materials and the mailing list to which these materials were sent will be included in the Annual Report.

3.3.3.5 Municipal Employee Training

The lone facility owned and operated by the Columbus Consolidated Government that has coverage under the Industrial Stormwater Discharge General Permit is the

Pine Grove Landfill. Landfill Employees receive training annually per the requirements of the facility's SWMP.

CCG has developed and implemented an Employee Training Program based on requirements identified in USEPA's Administrative Order on Consent (CWA-04-2016-4778). This program specifies the types and audiences for training ensuring that CCG employees have a level of knowledge commensurate with their duties associated with CCG's infrastructure and MS4 responsibilities. The narrative describing this program can be found in **Appendix 8** that accompanies this document.

Performance Measure:

A roster of those attending along with copies of any materials handed out at the training will be included in each year's Annual Report.

3.3.4 Construction Site Management

Overview of the Columbus Erosion and Sedimentation Program:

CCG's Soil Erosion and Sedimentation Ordinance was last revised and approved by Columbus City Council in 2017. A copy of the revised ordinance is also included in this document as **Appendix 1**. Should the Ordinance require revision, a copy of the revised Ordinance will be included in the Annual Report.

The ordinance mirrors the model ordinance provided by GAEPD with the following exceptions: inclusion of local fees, allowable maximum fines by CCG's Environmental/Recorders Court, buffer widths and site regulation size. CCG regulates projects less than 1.0 acre for Soil Erosion and Sedimentation Control. Projects less than 1.0 acres could qualify for a Minor Land Disturbance or Site Development permit depending on the type(s) of Construction Activities required. Examples of <1 acre projects include commercial parking lot additions, building additions, etc. CCG regulates these projects to insure that all significant construction with Columbus-Muscogee County meets Erosion and Sedimentation Control, Stormwater Control, Floodplain Management and Tree Ordinance Requirements.

Permits issued through the CCG Department of Engineering include Site Development (both commercial and residential), clearing, grading, minor land disturbances, and work on the right-of-way by utilities and citizens. Demolitions as part of a redevelopment are included in the site development plans and permits.

CCG uses a Permit Management System to keep records of Development Plans we have received, individual review processes, inspection records, photos, etc. The current system (EnerGov) tracks plans back to 2009. A former system, still available, contains records from 2009 back to 2004. Prior to 2004, project information was tracked on a single computer using Microsoft Access and a mainframe-based program.

Site Planning Policies and Procedures to incorporate water quality impacts:

CCH adopted the Georgia State Stormwater Management Manual as its design standard for stormwater controls in 2003. Please refer to this manual for technical information as related to drainage controls and water quality treatment requirements. A copy of this manual is available at:

www.georgiastormwater.org

The Columbus Consolidated Government adopted the Georgia Stormwater Management Manual (GSMM) as its design manual as of July 1, 2003.

Non-structural and Structural Best Management Practices Requirements:

Site Development plans are reviewed by CCG Engineering Department staff and CCG's Arborist to insure that any land disturbing activity (to include preliminary grading, clearing, minor land disturbances, and work on the right-of-way by utilities) complies with the Best Management Practice requirements of Columbus' Soil Erosion and

Sedimentation Ordinance (to include both BMPs during the construction process as well as those installed for stormwater flow and water quality control), Floodplain Regulations and the Tree Ordinance.

3.3.4.1 Legal Authority

The Council of the Columbus Consolidated Government adopted the Unified Development Ordinance in March of 2005. Chapter 7, Article 12 of this document covers prohibited discharges and illicit connection to the separate storm sewer system. Enforcement Authority comes from Chapter 12 Article 4 of the UDO.

3.3.4.2 Site Plan Review Procedures

Permits issued through the CCG Department of Engineering include Site Development (both commercial and residential), clearing, grading, minor land disturbances, and work on the right-of-way by utilities and citizens.

Demolitions, as part of a redevelopment are included in the site development plans and permits. CCG has an annual contract for demolition of structures that do not conform to housing codes.

CCG maintains a log of plans it receives, denies and approves. E&S Program reports are provided to the Georgia Soil and Water Conservation Commission on a quarterly and semi-annual basis.

Plans are reviewed for compliance with the minimum standards of the Georgia Erosion and Sedimentation Act of 1975 (as amended), State and Federal guidelines and other pertinent local requirements.

A copy of the approved plans is maintained within the Department of Engineering, one copy is given to the project inspector, three to five copies are returned to the owner for his file, the contractor is given a copy to keep on-site, and copies are available to the design engineer by request. The Field Inspector issues the Site Development "Red Card" after initial E&S measures are installed.

Pre-construction and plan review meetings are held as requested. Typically, these are suggested for large projects only.

Performance Measure:

CCG will provide in each Annual Report a list of permit applications received, reviewed, approved and/or denied each permit year. The number of land-disturbance activity (LDA) permits will also be included in the Annual Report.

3.3.4.3 Inspection Program

The Columbus Consolidated Government Department of Engineering currently has five Engineering Inspectors on staff, one of which is the Inspector Supervisor. Their main objective is to insure that construction activities taking place in their jurisdictions adhere to Columbus' Soil Erosion and Sedimentation Ordinance and comply with the approved plans.

Constructions Site Inspection Prioritization Policy, Frequencies, and Responsibilities:

The Columbus Consolidated Government Department of Engineering’s Erosion and Sedimentation (E&S) Inspectors will perform inspections of construction sites to ensure compliance with the requirements of local and state permits (LDA, NPDES, etc.) and local Ordinances (E&S, Stormwater, Tree Preservation and others) during all phases of construction to include: the installation of initial BMPs, active construction and through final stabilization. The number of active construction sites and the number of inspections on each site will be included in the Annual Report.

Prioritization Policy:

The CCG Department of Engineering has evaluated the potential threat to water quality posed by the construction activity and has assigned a threat priority of low, medium, or high. Based on the threat priority, CCG’s Department of Engineering has established an inspection frequency to ensure that BMPs are adequate, are being implemented and maintained properly, and that no discharge violations are occurring. Factors considered in the threat designation include:

1. Size and Type of the Construction Project
2. Disturbed Area (greater or less than 1 disturbed acre)
3. Site Location (inside or outside the MS4)
4. Adjacency to Waters of the State of Georgia
5. Site topography

Projects will be given a threat designation by the CCG Department of Engineering at prior to plan approval.

Inspection Frequencies:

Construction sites will be inspected according to the priority established by the CCG Department of Engineering, until construction activities are complete. The minimum frequency of construction site inspections is shown in Table 1.

Table 1: Minimum Inspection Frequency of Construction Projects

Construction Site Priority Level	Typical Site Characteristics	Minimum Inspection Frequency
High	>1 disturbed acre with NPDES coverage	Once per week

Medium	>1 disturbed acre within CCG's Combined Sewer Area or <1 acre disturbed within MS4	Once every two weeks
Low	Minor Land Disturbance projects	Once at permit issuance, again for final inspection

Inspection Responsibilities:

At a minimum, the following will be addressed during inspections (initial through final stabilization):

1. Ensure that coverage under the appropriate Stormwater Discharge Associated with Construction Activities Permit has been obtained by reviewing the Notice of Intent (initial inspections only, if applicable).
2. Review the applicable Erosion, Sedimentation and Pollution Control Plan and conduct a thorough site inspection to determine if control measures have been installed, implemented and maintained according to the Plan and the *Manual for Erosion and Sediment Control* (current version) ensuring that the combination of erosion, sedimentation and pollution control BMPs identified on the approved E&S plans have been installed and maintained in order to reduce or prevent the discharge of pollutants into stormwater conveyances and receiving waters.
3. Update the Inspector's set of plans with any modifications made to the approved set of plans onsite. *Note: BMPs with a hydraulic component cannot be field-adjusted and must go back through the review process.*
4. Review Site Records to ensure that the permittee is conducting daily, weekly and monthly inspections per the requirements of the State General Permit (if applicable).
5. Ensure that the owner/developer/contractor is meeting the requirements of CCG's Erosion & Sedimentation Control Ordinance and that all infrastructure is installed per the approved set of plans.
6. Visually observe and document non-stormwater discharges, potential illicit connections, and potential discharges of pollutants in stormwater runoff
7. Visually observe all outfalls associated with the project, the surrounding perimeter and evaluate receiving water conditions.
8. Ensure that all stormwater management facilities to include ponds, vaults, water quality BMPs (infiltration basins, filters, proprietary devices, etc.) are installed per the approved plans.
9. Ensure that, if issues are noted during the inspections, appropriate corrective actions are taken in a timely manner.
10. For all projects, provide the permittee with a written or electronic report generated from findings in the field within 7 days after the inspection.
11. Preserve a digital copy of each document, photograph and report generated in the common Permit Management System (EnerGov or equivalent).

12. Should an Inspector not be able to inspect his or her sites per the minimum inspection frequency for any reason (sickness, vacation, jury duty, etc.), another inspector must conduct the scheduled inspection on their behalf.

CCG's Engineering Inspection Team has been directed to follow the guidelines set forth in CCG's Enforcement Response Plan, included as **Appendix 11** of this document.

Performance Measure:

A summary of construction sites and the number of inspections conducted at each and a list of enforcement actions taken and their outcomes will be provided in the Annual Report.

3.3.4.4 Enforcement Procedures

Enforcement procedures for E&S violations documented at construction sites are described in CCG's Enforcement Response Plan, included as **Appendix 11** of this document.

3.3.4.5 Educational/Training Activities

Education and Training:

CCG's Plan Reviewers and Erosion & Sedimentation Control Inspectors are all certified as Level 1B Inspectors. Each of the Plan Reviewers is also certified as either a Level II Plan Reviewer or Design Professional.

CCG has developed and implemented an Employee Training Program based on requirements identified in USEPA's Administrative Order on Consent (CWA-04-2016-4778). This program specifies the types and audiences for training ensuring that CCG employees have a level of knowledge commensurate with their duties associated with CCG's infrastructure and MS4 responsibilities. The narrative describing this program can be found in **Appendix 8** that accompanies this document.

Performance Measure:

CCG will provide a roster of current E&S Plan Reviewers and Inspectors in each Annual Report, listing each individual's certification(s) and the corresponding certification expiration dates. Certifications for all CCG Inspectors, Plan Reviewers and Design Professionals will be renewed prior to expiration. New employees will be certified at the appropriate level commensurate with their job description within 12 months of employment.

3.3.5 Highly Visible Pollutant Sources (HVPS)

Highly Visible Pollutant Source Inspection Program:

Certain business types operating within Columbus have been identified as having a higher probability of potentially contributing pollutants to CCG's waterways. These businesses, referred to as Highly Visible Pollutant Sources typically generate waste products that if not properly managed, pose a threat to water quality when precipitation occurs. Examples of these business types include:

- Auto Repair Facilities
- Car Washes/Detail Shops
- Carpet Cleaners
- Nurseries
- Home Improvement Stores (outdoor chemical storage)

Facilities identified as HVPSs will be inspected by Stormwater & Floodplain Management Division staff to determine each facility's compliance with the Stormwater Ordinance.

3.3.5.1 HVPS Facility Inventory

HVPS Inventory:

Each Reporting Year, CCG's Stormwater & Floodplain Management Division will update its inventory of Highly Visible Pollutant Sources utilizing the following resources:

- CCG Business License Office database
- Various Internet/Web-based Resources
- Returned Mail/Corrected Addresses from Educational Outreach projects

Performance Measure:

The database is updated each year and is included in each Annual Report. A copy of the most current HVPS Inventory is included in Appendix 4.

3.3.5.2 Inspection Program

Commercial Site Inspections:

CCG's Stormwater & Floodplain Management Division staff will perform inspections of those businesses identified as HVPSs to ensure that any such facility within the jurisdiction of the Columbus Consolidated Government is in compliance with the Stormwater Ordinance. Spot and scheduled inspections will occur as outlined in the MS4 Inspection Plan approved by GAEPD (copy included as **Appendix 4** of this document). A copy of the form that will be used for these inspections is included in **Appendix 5** of this document.

Any violations/deficiencies identified during the inspection process requiring corrective action will require a follow-up inspection. The timeline for compliance with necessary corrections will be left up to the discretion of the Stormwater Inspector, but in no case will exceed 30 days. The Stormwater Inspector will perform a follow-up compliance assurance inspection within 7 days after the time given to comply has expired.

HVPS Inspection Rate:

100% of CCG’s HVPS facilities will be inspected each permit cycle at a rate no less than 10% per year.

Performance Measure:

A copy of each of the inspection forms and follow-up letters will be submitted to GAEPD each year in CCG’s Annual Report.

3.3.5.3 Enforcement Procedures

Enforcement procedures for Stormwater Ordinance violations are described in CCG’s Enforcement Response Plan, included as **Appendix 11** of this document.

Performance Measure:

A list of enforcement actions taken and their outcomes will be provided in each Annual Report.

3.3.5.4 Educational Activities

Educational Efforts:

The Stormwater & Floodplain Management Division, in addition to performing a site inspection of “highly visible” commercial activities for compliance, will use that time to informally educate the facility manager or his/her representative about the following topics:

- Stormwater Management Ordinance, how the ordinance applies to the business’ operations (i.e., prohibited discharges, dumping)
- Stormwater Management Project (pond, proprietary device, etc.) Maintenance (as applicable)
- Good Housekeeping Practices (parking areas, dumpster areas, etc.)

A follow-up letter summarizing the facility’s deficiencies and opportunities, any recommendations or warnings given, and the titles of any educational materials delivered will be mailed no later than 30 days after the inspection.

CCG's Stormwater & Floodplain Management Division will also mail (regular mail) no less than 300 brochures, pamphlets, or other educational materials concerning general stormwater issues, nonpoint source pollution, spill prevention, or other related topics specific to targeted operations during each reporting year. Examples of specific topics could include:

- Auto Repair Facilities, Garages, etc. – Proper handling of automotive fluids, the Columbus' Motor Oil Recycling Program, Pavement Management, etc.
- Carpet Cleaners –Water quality impacts of illegally dumping household chemicals (detergents)
- Nurseries, Home Improvement Stores – Water Quality Impacts associated with improper fertilizer storage, handling, and application.

Performance Measure:

A copy of each piece of educational literature utilized in this program along with a mailing list of recipients will be submitted in each Annual Report.

3.3.5.5 Municipal Employee Training

The employee training program for selected CCG Divisions has been designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance. Training programs contain a general stormwater awareness message, pollution prevention/good housekeeping measures, Spill Response and Prevention, and information about the operation and maintenance of structural best management practices (BMPs). Training programs also include information on stormwater pollution prevention plans (SWP3) for municipal facilities and BMPs recommended for use in the field to prevent contaminated discharges. Finally, municipal field staff will be trained to recognize, track, and report illicit discharges.

CCG has developed and implemented an Employee Stormwater Training Program that identifies employee sectors and the training they will routine receive as part of this Stormwater Management Plan. A copy of the Plan is included as **Appendix 8** of this document.

3.3.6 Enforcement Response Plan

The Columbus Consolidated Government's Enforcement Response Plan can be found as **Appendix 11** of this document.

3.3.7 Monitoring for Discharges to Impaired Waterbodies

A description of the Columbus Consolidated Government's Impaired Waters Monitoring Plan can be found in **Appendix 7** of this document.

3.3.8 Municipal Employee Training

CCG has developed and implemented an Employee Training Program based on requirements identified in USEPA's Administrative Order on Consent (CWA-04-2016-4778). This program specifies the types and audiences for training ensuring that CCG employees have a level of knowledge commensurate with their duties associated with CCG's infrastructure and MS4 responsibilities. The narrative describing this program can be found in **Appendix 8** that accompanies this document.

3.3.9 Public Education

A description of the Columbus Consolidated Government's Public Information and Education Program can be found as **Appendix 8** of this document.

3.3.10 Public Involvement

A description of the Columbus Consolidated Government's Public Involvement Program can be found as **Appendix 9** of this document.

3.3.11 Post-Construction Stormwater Management

CCG adopted the Georgia State Stormwater Management Manual as its design standard for stormwater controls in 2003. Please refer to this manual for technical information as related to drainage controls and water quality treatment requirements. A copy of this manual is available at:

www.georgiastormwater.org

The Columbus Consolidated Government adopted the Georgia Stormwater Management Manual (GSMM) as its design manual on March 1, 2005, though its use as the community stormwater design manual dates back to July 1, 2003. The GSMM is specifically mentioned by title in the Unified Development Ordinance that went in to effect on March 1, 2005.

3.3.11 (a) (2) Performance Standards

The Columbus Consolidated Government shall apply the standards for new development and redevelopment to any site that meets one or more of the following criteria:

- a) New development that creates or adds 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 5,000 square feet of land or greater.
- b) Redevelopment that creates, adds or replaces 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 1 acre or more, including projects less than one acre if they are part of a larger common plan of development or sale.

For sites meeting the above criteria, CCG will ensure that the following minimum standards are considered during the site plan preparation process:

Green Infrastructure/Low Impact Development/Stormwater Runoff Quality/Reduction

Stormwater runoff shall be retained onsite or adequately treated prior to discharge. Until April 12, 2020, stormwater runoff shall be treated through one of the following two approaches:

- a) The stormwater management system shall be designed to retain the first 1.0 inch of rainfall on the site, to the maximum extent practicable. The MEP applicability can be determined by the MS4 using criteria they establish, such as the feasibility criteria in the GSMM. If the first 1.0 inch of rainfall can be retained onsite using runoff reduction methods, then additional water quality treatment is not required. If the 1.0 inch cannot be retained onsite, the remaining runoff from a 1.2 inch rainfall event must be treated to remove at least 80% of the calculated average annual postdevelopment total suspended solids (TSS) load or equivalent as defined in the GSMM or in the equivalent manual.
- b) The stormwater management system shall be designed to remove 80% of the average annual post-development total suspended solids (TSS) load or equivalent as defined in the GSMM or in the equivalent manual. Compliance with this performance standard is presumed to be met if the stormwater management system is sized to capture and treat the water quality treatment volume, which is defined as the runoff volume resulting from the first 1.2 inches of rainfall from a site.

No later than April 12, 2020, CCG will have transitioned to exclusively using approach (a) to achieve compliance with this performance standard. This timeframe has been provided by GAEPD to allow sufficient study, training, and planning on the part of the all MS4 municipalities in Georgia. All site plan reviewers, construction site inspectors, and other personnel whose duties involve post-construction stormwater runoff will receive training in the new GSMM and the runoff quality/reduction standard by April 12, 2020.

Stream Channel/Aquatic Resource Protection

Stream channel and/or aquatic resource protection shall be provided by using the following approaches: 1) 24-hour extended detention storage of the 1-year, 24-hour return frequency storm event; 2) erosion prevention measures such as energy dissipation and velocity control; and 3) preservation of the applicable stream buffer.

Overbank Flood Protection

Downstream overbank flood protection shall be provided by controlling the post-development peak discharge rate to the predevelopment rate for the 25-year, 24-hour storm event.

Extreme Flood Protection

Extreme flood protection shall be provided by controlling the 1 DO-year, 24-hour storm event such that flooding is not exacerbated.

3.3.11 (a) (3) Linear Transportation Projects

CCG must apply the performance standards listed in Part 3.3.11(a)(2) during the design of all construction projects. However, CCG may be unable to apply the performance standards, all or in part, for linear transportation projects being constructed by CCG. CCG may develop a feasibility program which sets reasonable criteria for determining when implementing the performance standards in linear projects is infeasible. CCG may develop this feasibility program and submit it to EPD for review. Upon submittal to EPD, CCG may begin implementation of this feasibility program for linear transportation projects only.

Green Infrastructure/Low Impact Development (GI/LID)

CCG shall continue to review and revise, where necessary, building codes, ordinances, and other regulations to ensure they do not prohibit or impede the use of GI/LID practices, including infiltration, reuse, and evapotranspiration. At a minimum, CCG shall assess those regulations governing residential and commercial development, road design, land use, and parking requirements.

CCG will develop and implement a GI/LID program approved by EPD. The program shall include procedures for evaluating the feasibility and site applicability of different GI/LID techniques and practices, and various structures and practices to be considered. If the program is revised during the reporting period, submit the revised program to EPD for review with the annual report.

CCG will track the addition of GI/LID structures through the plan review process and ensure that the structures are added to the inventory. Provide an updated inventory including the type and total number of structures in each annual report.

CCG will conduct inspections and/or ensure that inspections are conducted on 100% of the total privately owned non-residential (e.g., mixed use development, commercial, etc.) and CCG GI/LID structures within the 5-year permit term. CCG

will provide the number and percentage of the total structures inspected during the reporting period in each annual report.

CCG will conduct maintenance on the GI/LID structures it owns, as needed. CCG will provide the number and/or percentage of the total structures maintained during the reporting period in each annual report.

CCG will implement procedures for ensuring privately-owned non-residential GI/LID structures are maintained as needed. CCG will provide documentation of these activities in each annual report.

Performance Measures

The Columbus Consolidated Government will develop an inventory of GI/LID structures located within CCG's jurisdiction, including the total number of each type of structure. This inventory will be updated and provided initially with the 2020-2021 Annual Report.

The Columbus Consolidated Government will conduct inspections on 100% of the total non-residential GI/LID structures within a 5-year period at a rate of no less than 10% per year. CCG will provide the number and/or percentage of the total structures inspected starting with the 2020-2021 Annual Report.