



Augusta, Georgia

Stormwater Management Program

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Prepared in Conjunction with Requirements of
Georgia Municipal Separate Storm Sewer System

NPDES Permit No. GAS 000200



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Acronyms and Abbreviations

ABS -	acrylonitrile butadiene styrene (black plastic)
AED -	Augusta Engineering Department
AMCA -	American Mosquito Control Association
AUGUSTA -	Augusta -Richmond County
AUD -	Augusta Utility Department
BMP -	best management practice
°C -	degrees Celsius
CMP -	corrugated metal pipe
CFR -	Code of Federal Regulations
Cfu/100 ml -	colony forming units per 100 milliliters
EPA -	United States Environmental Protection Agency
EMA -	Emergency Management Agency
EPD -	Georgia Environmental Protection Division
FTE -	full time equivalent
GSWCC -	Georgia Soil and Water Conservation Commission
HVPS -	highly visible pollutant source
LEED -	Leadership in Energy and Environmental Design
LID -	Low Impact Development
MEP -	maximum extent practicable
Mg/L -	milligrams per liter
MS4 -	Municipal Separate Storm Sewer System
NOV -	notice of violation
NPDES -	National Pollution Discharge Elimination System
NTU -	Nephelometric turbidity units
PVC -	polyvinyl chloride
RCP -	reinforced concrete pipe
SWMP -	storm water management program
SWPPP -	storm water pollution prevention plan
TMDL -	total daily maximum load
USACE -	United States Army Corps of Engineers

Background

This revised stormwater management program (SWMP) has been prepared to meet requirements associated with reissuance of Augusta, Georgia (Augusta) (formerly known as Augusta-Richmond County) phase I Medium Municipal Separate Storm System (MS4) permit number GAS000200 (Permit). This permit was reissued by the Georgia Environmental Protection Division (EPD) on April 12, 2017. Components of the previously approved SWMP that continue to meet 2017 re-issued Permit requirements have been retained and incorporated herein. Numerical citations provided after section headings in this plan refer to applicable passages from Part 40 of the Federal Code of Regulations, Section 122 or 40 CFR122 (EPA 2009a).

The proposed SWMP addresses applicable regulatory requirements and is designed to reduce the discharge of pollutants from the Augusta's MS4 to the maximum extent practicable (MEP) in order to protect water quality of local watersheds. The program is described under Section 3.0.

1. Legal Authority

Augusta's various ordinances, regulations, technical manuals, and land development documents provide needed legal authority to implement and enforce SWMP control measures that are designed to reduce discharge of pollutants from Augusta's MS4 to the maximum extent practicable. Key ordinances are listed below:

- i) Land Subdivision Regulations; ii) Site Plan Regulations; iii) Grading Ordinance; iv) Stormwater Management Ordinance; v) Stormwater Management Plan Technical Manual; vi) Tree Ordinance; Flood Damage Prevention Ordinance; and vii) Soil Erosion, Sedimentation and Pollution Control Ordinance

2. Sharing Responsibility

There is no other entity sharing responsibility with Augusta, Georgia for implementing and enforcing this SWMP.

3. Stormwater Management Plan Components

Augusta SWMP consists of following components. Each component is described in detail under a separate section.

- 3.1 Structural and Source Control Measures;
- 3.2 Illicit Discharge Detection and Elimination Program (IDDE);
- 3.3 Industrial Facility Stormwater Discharge Control;
- 3.4 Construction Site Management;
- 3.5 Highly Visible Pollutant Sources (HVPS);
- 3.6 Enforcement Response Plan (ERP);
- 3.7 Impaired Waterbodies;
- 3.8 Municipal Employee Training;
- 3.9 Public Education;
- 3.10 Public Involvement; and
- 3.11 Post Construction

3.1 Structural and Source Control Measures (122.26(d)(2)(iv)(A))

Control Structures are structural components of a stormwater system that detain stormwater and allow its controlled release OR structures that regulate runoff discharge from best management practices. Typically control structures include manholes or vaults fitted with baffles, weirs or orifices. Storm Sewer

inlets, catch basins, grates are major components of the storm sewer conveyance system and serve an important function in safely conveying surface runoff through MS4.

3.1.1 As of April 2017, Augusta has an inventory of permanent stormwater structures (including control structures such as Stormwater Management Facilities (ponds) and MS4 Out falls including:

Stormwater Control Structures:

- Detention/retention ponds -168 ponds
- Stormwater outfalls -305

Stormwater Conveyance Structures:

- Catch basins -15434
- Storm drain pipes -446 miles
- Ditches -90.5 miles

Control Structures” are structural components of a stormwater system that detain stormwater and allow its controlled release. OR “Structures” that regulate runoff discharge from best management practices. For this reason submitted map shows only ‘Ponds” and “outfalls”. Storm drainage structures, pipes and ditches are considered “other stormwater structures (conveyance structures)” and are documented as such under submitted SWMP subsection 3.1.1.

Maps and Inventory of Augusta MS4 control structures are attached as Appendix A & Appendix B

Augusta will provide the number of MS4 control structures added during the reporting period and the total number of structure in the inventory in each annual report.

3.1.2. Structural Control Maintenance (122.26(d)(2)(iv)(A)(1))

Augusta takes control of stormwater infrastructure components slated for public ownership after the structures have been inspected, accepted by the Augusta commission, and after the 18-month contractor warranty period has elapsed.

Catch basins will be maintained by the Augusta Engineering Department-Maintenance (AED-Maintenance) on an as-needed basis. AED’s current maintenance operation consists of in-house county force and on-call contract services. There are nine (9) Maintenance Coordinators who play a lead role in inspection and maintenance of Augusta’s stormwater conveyance system including MS4 structures. The coordinator makes initial determination and assign in-house or on-call resources depending on type and complexity of maintenance task. At a minimum, four (4) Augusta maintenance crews will be in the field 5 days per week, with each crew responsible for not only maintaining stormwater structures, but also inspecting and repairing pavement, sidewalks, curbs and gutters, clearing nuisance properties, and maintaining the Augusta levee system. Periodic Catch basin and pipe inspections will be conducted each year at a rate ensuring 100% of total such structures inspected in a 5-year period. In addition to periodic cleaning, maintenance will consist of repairing catch basins that are not functioning properly.

Augusta will provide number and percentage of the total MS4 control structures inspected and maintained during the reporting period in each Annual report.

The Augusta Engineering Department-Engineering (AED-Engineering) requires that certified as-built plans be submitted at completion of new developments. Stormwater infrastructure information from these as-built plans will be incorporated into the municipal inventory on an annual basis.

Storm drain pipes will be inspected by the AED staff or contract services. The AED-Maintenance will respond to specific complaints and problems (typically blockages, overflows, and localized flooding), and the AED-Engineering will monitor MS4 outfalls for illicit discharges and connections. Inspection of these structures will be based on a 5-year revolving schedule; maintenance will be prioritized based on the severity of damage and potential for additional damage to the structure and its surroundings should it fail. Underground portions of storm pipes will be inspected on an as-needed basis. The AED will work with the Augusta Utilities Department (AUD) in the event that cross connection between the storm drain system and either sanitary sewer or potable water pipes are detected via outfall monitoring. MS4-Periodic outfall and ditch inspections will be conducted each year at a rate ensuring 100% of total structures inspected in a 5-year period.

Periodic ponds inspections will be conducted each year at a rate ensuring 100% of total such structures inspected in a 5-year period. Vegetative Maintenance type noted deficiencies, if any, will be addressed in ninety (90) days of completion of initial inspection. Corrective measures will be developed in ninety days of completion of initial inspection If noted deficiency is structural type. The pond will be re-inspected following correction of noted deficiencies and documented accordingly. An inventory of stormwater management facilities (ponds) is presented in Appendix B of this plan.

Stormwater MS4 structures will be inspected and monitored by the AED each year at a rate ensuring 100% of total structures inspected in a 5-year period.

AED keeps track of inspection / maintenance activities using electronic database. Requested and performed work is logged electronically as “work request/work order” in Augusta’s customized database. At present AED uses “CityWorks” asset management program. Augusta Engineering invested approx. \$500,000 in this program in 2016. Recorded data summary for a reporting year is retrieved for reporting in the MS4 respective annual report.

3.1.3. Planning Procedures (122.26(d)(2)(iv)(A)(2))

The goal of this SWMP is to reduce pollutant loads in surface water features in Augusta storm conveyance to the maximum extent practicable (MEP) with minimal disruption to the local population and Augusta operations. Implementation of this plan will be achieved by inspections, monitoring, sampling and analysis, public outreach, and if necessary, enforcement action.

All new land development, whether commercial or residential, will be required to maintain pre-development runoff release rates. This requirement will be strictly enforced to maintain discharge velocities and mitigate water quality degradation by retaining stormwater flow and permitting solids, particulates, and other contaminants to settle out, naturally decompose, or volatilize before being released to receiving waters. More stringent, watershed-specific development requirements will be implemented in special consideration basins, such as in the Rae's Creek, Rock Creek and Rocky Creek basins.

The director of the Augusta Planning and Development Department (APDD) is responsible for regulating land development, and to protect human health and the environment from the potential negative

impacts of converting land from its natural state to urban uses. Augusta Engineering Department (AED) is enforcement arm of this process.

Augusta has a Comprehensive Plan in place to manage land use and zoning. The original plan was adopted in 1992. The Plan is updated periodically. Latest update was in 2008. Revisions to Comprehensive Plan, if any, during a reporting period will be provided in respective year annual report. This Comprehensive Plan is a long-range plan for managing and guiding Augusta's development over the next decade and beyond. Three principal components of the Augusta Comprehensive Plan are the Community Assessment, the Community Participation, and the Community Agenda. In summary, the Plan examines the existing conditions affecting development, enumerates the needs and goals for the future development of the City, and spells out the strategy for addressing needs and achieving goals. The elements of the Plan include Population, Housing, Economic Development, Transportation, Community Facilities and Services, Historic Resources, Natural Resources/Greenspace Program, and Land Use. The Natural Resources/Greenspace Program includes protection of natural and environmentally sensitive resources in the City addressing such topics as topography, soils, agricultural land and forestland, air quality and water resources. The City's Greenspace Program is also integrated into this element of the plan.

The various ordinances, regulations, technical manuals, and other documents that together constitute Augusta development documents consist of the following:

- Comprehensive Zoning Ordinance
- Land Subdivision Regulations
- Site plan Regulations
- Stormwater Management
- Stormwater Management Plan Technical Manual
- Street and Road Design Technical Manual
- Tree Ordinance
- Flood Damage Prevention Ordinance
- Soil Erosion, Sedimentation and Pollution Control Ordinance
- Grading Ordinance
- Groundwater Recharge Area Protection Ordinance
- Water Supply and Watershed Ordinance
- Augusta Utilities Department -Design Guidelines
- Rights-of-Way Encroachment Guidelines
- Use of County Rights-of-Way

A summary of relevant Augusta regulations and ordinances designed to protect human health and the environment is provided below. The full text of each ordinance may be found at <http://www.augustaqa.gov> under Augusta Planning &Development Department home page and Augusta Law Department homepage.

Comprehensive Zoning Ordinance

The Comprehensive Zoning Ordinance defines development requirements related to zoning, including setbacks, off-street parking, and general requirements that apply to individual land use types.

Site Plan Regulations

The Augusta Site Plan Regulations were established to define minimum site plan design requirements. The AED-Engineering is responsible for inspections to verify that development activities are consistent with approved site plans.

Stormwater Management Ordinance

The Augusta Stormwater Management Ordinance is administered by the AED. The goals of this ordinance include protection of local streams and lakes by prohibiting illicit sewer and waste water connections to the stormwater conveyance system, eliminating dumping or disposal of material other than stormwater into storm drains, and protecting the stormwater system from pollutants associated with commercial and industrial facilities. A companion document to this ordinance, the *Stormwater Management Plan Technical Manual* establishes minimum requirements for designing stormwater conveyance and management system.

Tree Ordinance and Illustrated Guide

The Augusta Tree Ordinance and Illustrated Guide provides standards for the protection of public trees, for the designation of landmark trees, and further provides landscaping, tree protection and tree establishment standards for the development of private property in Augusta, Georgia. It is the purpose of this regulation to promote the public health, safety, and general welfare of provisions designed to:

- Aid in stabilizing the environment's ecological balance by contributing to the processes of air purification, oxygen regeneration, wildlife habitat, groundwater recharge, and stormwater runoff retardation, while concurrently facilitating noise, glare, and heat abatement
- Encourage the preservation of existing trees and vegetation
- Prevent soil erosion
- Protect and enhance the aesthetic qualities of the community
- Prevent structural and pavement saturation
- Safeguard and enhance private property values and protect private and public investment
- Conserve energy

Flood Damage Prevention Ordinance

The Flood Damage Prevention Ordinance was established to minimize public and private losses due to flooding. This ordinance is designed to:

- Restrict land develop activities within 100-year floodplain area that will result in an increase in flood stage, velocity, or erosion
- Control alteration of natural floodplains, stream channels, and natural protective barriers
- Limit filling, grading, dredging, and other development that may increase flood damage or erosion
- Prevent or regulate construction of flood barriers that will divert flood water to or increase flood hazards to other land

Via this ordinance, Augusta ensures that all applicable flood-related permits are received by the appropriate governmental agencies. The Zoning Board of Appeals hears and decides on appeals regarding variances to this regulation. Variances will not be issued within designated floodway or lower floodway fringes if an increase in flood levels during base flood discharge is likely to occur.

Soil Erosion, Sedimentation and Pollution Control Ordinance

The Augusta Soil Erosion, Sedimentation, and Pollution Control Ordinance addresses erosion control and stormwater quality management practices for construction activities. This regulation is consistent with and modeled on the State of Georgia requirements for soil erosion, sedimentation and pollution control plans. The AED is responsible, with assistance of National Resource Conservation Services (NRCS), for reviewing soil erosion and sediment control plans, inspecting active construction sites, and taking enforcement action, as needed.

Grading Ordinance

Land grading activities are regulated by this ordinance. This ordinance provides rules and regulations for excavation, filling, and grading activities within Augusta, and provides for administration and enforcement of these rules and regulations.

Groundwater Recharge Area Protection Ordinance

To provide for the health, safety and welfare of the public and a healthy economic climate within Augusta and surrounding communities, it is essential that the quality of public drinking water be ensured. For this reason, it is necessary to protect the subsurface water resources that Augusta and surrounding communities rely on as sources of public water. Groundwater resources are contained within aquifers, which are permeable, rock or sediment strata. These aquifers are replenished by infiltration of surface water runoff in zones of the surface known as groundwater recharge areas. Groundwater is susceptible to contamination when unrestricted development occurs within significant groundwater recharge areas. It is, therefore, necessary to manage land use within groundwater recharge areas in order to ensure that pollution threats are minimized.

The objectives of this ordinance are:

- Protect groundwater quality by restricting land uses that generate, use or store dangerous pollutants in recharge areas
- Protect groundwater quality by limiting density of development
- Protect groundwater quality by ensuring that any development that occurs within the recharge area shall have no adverse effect on groundwater quality

Greenspace Program

In addition to these ordinances, Augusta implemented the Georgia Greenspace Program in November 2000 to provide both short-term and long-term plans to manage and protect local greenspace and environmentally sensitive areas. The program, which is managed by the Augusta Planning & Zoning Commission, has a goal of permanently setting aside and protecting approximately 20% of the land (33,269 acres) in Augusta, excluding that contained within the limits of Fort Gordon. Six principal areas were identified where this protection will occur, including:

- 1) Land adjacent to the Augusta Canal
- 2) Land adjacent to the Savannah River
- 3) Land within Phinizy Swamp
- 4) Land in the Rae's Creek watershed
- 5) Land in the Rocky Creek watershed
- 6) Greenbelts adjacent to several streams in the southern portion of Augusta

3.1.4. Street Maintenance (122.26(d)(2)(iv)(A)(3))

Evaluation of pollutant levels in stormwater resulting from runoff from streets indicates that paved roadways can be a significant contributor to surface water pollution. To reduce contaminant levels to

the maximum extent practicable (MEP), the US Environmental Protection Agency (EPA) has mandated that municipalities act to review their road management practices to improve the cleanliness of the road system.

The Augusta Engineering Department manages street sweeping operation within Augusta, GA jurisdictional boundaries. Sweeping is performed In-house. Sweeping, and service frequency varies with the Road Service Classification. Primary service area includes sweeping of Arterials and Collectors roads. Local roads are swept on an as needed basis. Each time sweeper hopper is full, depending on sweeper type, it will empty directly at Augusta landfill or into dedicated roll-off containers. These containers are brought to the landfill when full. Landfill tracks collected waste by weighing it as it is disposed of at the facility. Under MS4 program, Augusta is proposing to sweep at a minimum of 1,000 miles in a reporting year period. Street sweeping log is presently maintained as a paper copy (log copy include in Appendix E). Street Name and length is determined using Augusta GIS street maps. However, AED is working on transitioning to “electronic log” system, and data will be transmitted to logger as sweeper performs work. Completion of transition will be reported at its completion in respective year annual report. This information along with total volume or weight of refuse removed will be submitted as part of annual report during the term of this Permit.

The AED-Maintenance operates two Vacon pump trucks designed to remove sand, silt, and grit prior to it discharging into the storm sewer system. Removed debris is disposed of at the Augusta Landfill and tracked by weight at disposal time. AED also has on-call contract services on board to supplement maintenance work on as needed basis. AED keeps track of maintenance activities using an electronic database. Requested and performed work is logged electronically as “work request/work order” in Augusta’s customized “Cityworks” database. Recorded data is retrieved for reporting for the MS4 annual report. Augusta will inspect catch basins at a rate ensuring 100% of total catch basins will be inspected in a 5-year period. If needed, maintenance of inspected structures will trigger development of a work order in “CityWorks” and needed work will be completed within 90 days of inspection. Vacon information along with total volume or weight of debris removed will be submitted as part of annual report during the term of this Permit.

The sub-tropical climate in the Augusta region does not require methods to prevent polluting as a result of the application of salts or other compounds for roadway de-icing. Litter removal is conducted by AED-Maintenance, community service volunteers, or correctional facility trustee teams prior to mowing. Collected litter is bagged and taken to Augusta Landfill. Landfill tracks collected waste by weighing it as it is disposed of at the facility. AED uses landfill tickets submitted by AED-Maintenance, community service volunteers, and correctional facility trustees as well as declared “total weight collected” from on-call service contractors for tracking this information. This information will be submitted as part of annual report during the term of this Permit.

Sediment control from roadway runoff, particularly during street maintenance and repair activities, is the primary storm water quality issue in the Augusta area with regard to streets. Sediment and erosion control measures taken during street maintenance activities will include:

- Use of silt fences
- Installation and maintenance of construction entrances
- Minimization of vegetation removal or disturbance
- Seeding, matting, mulching, or installation of other soil stabilization materials if vegetation must be removed

3.1.5. Flood Management Projects (122.26(d)(2)(iv)(A)(4))

New flood control projects will be assessed for water quality impacts using Augusta Stormwater Management Manual and associated guidance documents prepared by Augusta Engineering Department. These projects also will be subject to the development constraints for sensitive areas imposed by the City. In addition to addressing the issues that deal with flood plain and soil erosion and sediment control, the development regulations require that the developer submit a Storm water Management Plan, a hydrology study and water quality assessment information for review by the City Engineer. All stormwater runoff shall be adequately treated prior to discharge. The storm water management system shall be designed to retain the first 1.0 inch of rainfall on the site or capture and treat the water quality treatment of volume, which is defined as the runoff volume resulting from the first 1.2 of rainfall, or combination of aforementioned options; retaining and treatment. To ensure aforementioned conditions are met, flood control projects are subject to the same review process that is described under section 3.4.2.

Existing flood control structures in the Augusta area are dry detention structures and are designed solely to release the incoming water at a controlled rate. It would not be feasible or cost-effective to retrofit these structures. Augusta requires 10 percent reduction in post-development peak discharges for stressed watersheds. These watersheds are Rae's, Rocky and Rock. Retrofitting existing flood control devices will not yield the desired objective in a cost-effective way. Also, gathered water quality data in Augusta area suggest that all constituents of interest are present at low concentrations in incoming stormwater and meet the surface water quality standards except fecal coliform in some basins. Augusta is proposing no further assessment. However, if future in-stream water quality problems are identified or new development occurs in the service area, these ponds will be reassessed for possible retrofit.

3.1.6 Municipal Facilities with the Potential to Cause Pollution (122.26(d)(2)(iv)(A)(5))

This section describes Municipal facilities that are not subject to IGP but have potential to cause pollution. The following facilities possibly fall under such category.

- Highland Avenue Water Treatment Plant
- Tobacco Road Water Treatment Plant
- Engineering Maintenance Tobacco Road facility
- Various Recreation and Parks Department storage sites (i.e., fertilizers, herbicides, and pesticides)

These facilities include: Riverwalk (chemicals: fertilizer); Diamond Lake Park (Chemicals: herbicide & fertilizer storage); Westview Cemetery (chemicals: fertilizer); Magnolia Cemetery (chemicals: fertilizers); Cedar Grove Cemetery (chemicals: fertilizer); and Recreation Maintenance Yard (chemicals: fertilizer, pesticide, lime, weed control agents)

Inventory of such facilities will be updated annually and reported with MS4 Annual Report. Augusta is proposing annual inspection of these facilities at a rate ensuring 100% of total such facilities inspected in a 5-year period. These facilities will be inspected by the City staff using the "Highly Visible Pollutant Source Inspection Form" (a copy provided in Appendix E).

3.1.7. Pesticide, Fertilizer, and Herbicide (122.26(d)(2)(iv)(A)(6))

Although application of pesticides, fertilizers, and herbicides is a potential source of pollution to storm water runoff, use of these compounds by Augusta municipal departments is limited and closely controlled. Weed control along streets and highways is generally accomplished by mowing and other

mechanical means, rather than by the use of chemical applications. In the event that herbicides are needed, foliar application is used to mitigate leaching and runoff. Nuisance aquatic plants are also typically controlled via mechanical removal rather than by application of herbicides. Respective Augusta departments maintain separate inventories of chemicals stored. Augusta Employees or Augusta Contractors who apply these chemicals will have required training, and only those so trained are authorized to use these chemicals. A copy of training and certification of Augusta employees will be provided in each annual report.

Because soil in the region is relatively fertile and rainfall abundant, the need for fertilizer is negligible. In addition, Augusta uses native vegetation that requires minimum chemical assistance to thrive, thus limiting the potential for adverse runoff to stormwater, and minimizing maintenance and upkeep costs.

3.2 Illicit Discharge Detection and Elimination Program (IDDE) (122.26(d)(2)(iv)(B))

3.2.1. Legal Authority, Program Description and Administration

The Augusta Stormwater Management Ordinance (dated July 28, 2015) regulates illicit discharges to the MS4, and this ordinance will be stringently enforced (a copy included in Appendix I). To provide for the health, safety, and general welfare of its citizens, Augusta regulates non-stormwater discharges to the MS4 to the maximum extent practicable, as required by state and federal law. Objectives of the Augusta illicit discharge detection and elimination program are:

- Regulate the contribution of pollutants to the Augusta MS4 by any user
- Ensure the proper installation, operation, and maintenance of construction site BMPs
- Prohibit illicit connections and illegal discharges to the Augusta MS4
- Control discharges to the Augusta MS4 from spills, dumping or disposal of materials other than stormwater
- Establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure regulatory compliance

The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the EPD and EPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the Augusta MS4.

Revisions to current “Illicit Discharge Ordinance”, if any, during the reporting period will be provided in each annual report.

3.2.2 Outfall Inventory/Map

Augusta has current inventory of 305 MS4 Out falls. Augusta will provide the number of MS4 outfalls added during the reporting period and the total number of structure in the inventory in each annual report. Maps and inventory of outfalls is presented in Appendix A and Appendix B of this plan.

3.2.3. Illicit Discharge Detection and Elimination (IDDE) Plan

Augusta will continue outfall dry-weather screening activities for the duration of this permit. Rainfall events with precipitation levels below 0.1 inches are considered dry weather events. A qualified dry weather sampling will be preceded by 72-hours of dry weather. The field screening will be conducted

using a field analysis kit and observation will be logged on a form (Appendix E). No flow will be documented as "no flow observed" and flow related items will be marked as N/A on the form.

In the event that dry-weather discharge is noted at an outfall, AED will use following process for completing the monitoring and source determination.

Step 1: In addition to visual observations (such as Color, Odor, Oil Sheen, Floating Solids), the AED will immediately conduct onsite testing using a storm water field test kit. Flow will be tested for pH, conductivity, detergent, and fluoride. Acceptable standards for these parameters are: pH (6-8.5), conductivity (<0.250 S/cm), detergent (<0.05mg/L), and fluoride (<0.4mg.L). Not later than following day of initial inspection, AED will walk up the storm conveyance system and open storm structure covers to investigate observed flow source. Efforts will be made to the extent possible to identify the source of flow. The source may include groundwater, lawn watering, air conditioning condensate, foundation drainage, or illicit discharges.

Step 2: In the event the source appears to be illicit, water samples will be collected and indicator water quality parameters analyzed to determine the potential source of outfall flow. These parameters include:

<u>Parameter</u>	<u>Water Quality Standard</u> *
Water temperature	± 10° C of ambient conditions
Turbidity	< 40 NTU
Conductivity	< 0.250 S/cm
pH	6.0 -11.0
Fluoride	< 0.4 mg/L
Detergents	< 0.05 mg/L

** These standards were derived from empirical surface water quality background data collected from various springs and unimpaired stream headwaters throughout the Augusta area in past. It should be emphasized that these standards are only intended to trigger additional investigation of dry-weather discharges, and are not to be used as the sole basis for taking enforcement action.*

If visual and olfactory signs indicate storm and sanitary sewer mixing, a sample will be collected for Fecal Coliform (FC) laboratory testing. The sample will be delivered to Augusta POTW In-house laboratory or a certified laboratory for processing so that 6-hour holding time is not exceeded. Single maximum FC criteria of 4,000 colonies per 100 ml for any given sample will be used.

If necessary, additional follow up inspections and/or dye-tracer tests may be conducted and samples collected upstream of the outfall to track the source of the dry-weather discharge. These follow up inspections and tests will be conducted in a timely manner, but because they typically involve iterative inspections and tests to successfully track outfall source(s), a definitive schedule cannot be established. Enforcement action resulting from illicit discharges is discussed in next sub-section.

Stormwater MS4 outfalls will be inspected and monitored by the AED at a minimum annual rate ensuring 100% of total such facilities inspected in a 5-year period. Augusta will provide number and percentage of the total MS4 outfall inspected and documentation of inspection during the reporting period in each Annual report.

Enforcement

Whenever Augusta finds that a person has violated a prohibition or failed to meet a requirement of this program, Augusta may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

- The elimination of illicit connections or discharges;
- That violating discharges, practices, or operations shall cease and desist;
- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property; and
- The implementation of source control or treatment BMPs.

A written warning or notice of violation will be issued with details regarding the nature of illicit connection and a schedule for response submittal including corrective action plan submittal. Such notice will be issued within 72 hours of determination of illicit source requiring Responsible Party to submit response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then written response will not be required. A definitive schedule to correct violation and follow-up inspections cannot be established due to variation in illicit source and required corrective measures. The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in proposed corrective action plan is reached.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline commensurate with the scope and nature of the violation, within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, Augusta or a contractor will do the work and the expense thereof shall be charged to the violator.

3.2.4 Accidental Discharges and Spills

Spill response and containment is currently managed by the Augusta Fire Department Haz-Mat Unit with exception of sanitary sewer overflows (SSO). The fire department maintains a separate hazardous material response unit and also has access to outside services to assist in spill response and cleanup efforts. Working through the Local Emergency Planning Committee Fire Department maintain contact with local industry to ensure that all spill containment measures are maintained at levels that protect receiving waters from unnecessary and adverse impacts.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the Augusta MS4, state waters, or waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous material said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.

SSO Spill response and containment is currently managed by the Augusta Utilities Department (AUD). AUD has 24/7 emergency response crew on board for addressing SSO spills and other water & sewer related emergencies. AUD maintains SSO spill date and amount spilled log. This information is included in MS4 respective year annual report.

3.2.5 Notification of Accidental Discharges and Spills

In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person, by phone, or facsimile no later than the next business day of the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Augusta Emergency Management Agency or Augusta Engineering Department within five business days of the phone or in person notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years. In either case, such person shall also take immediate steps to ensure no recurrence of the discharge or spill.

Augusta receives accidental discharge/spill reports for all spill types from several different sources; Augusta's 311 system, through routine Augusta inspections, and direct citizen calls to different departments. Particular response procedures and departmental responsibility varies depending on the type of spill however, AED will provide documentation on each discharge/spill occurrence and response during the reporting period in each annual report.

Augusta's 311 system:

When calls originate through the 311 system they are routed to the appropriate department relative to the nature of the spill. A work order is created in our city-wide CityWorks system that alerts the Engineering department of an incident which is then to be investigated if needed and reported on for MS4 reporting requirements.

Routine Augusta inspections:

Augusta employees often are the first line of defense for detecting discharges and spills through routine inspection programs. These incidents are often reported directly to the responsible departments to handle the situation. Each department that could receive a spill/discharge related call is aware that those incidences are required to be reported on the annual MS4 report so AED is alerted to the incident to follow up on and report. Augusta Utilities Department has an email list to alert appropriate Augusta employees of sewer overflows, AED stormwater staff receives those emails for reporting purposes.

Direct citizen calls to individual departments:

As stated above, each department is aware of the MS4 reporting requirements so they directly alert the stormwater staff about spills/discharges for reporting purposes.

3.2.6 Proper Management and Disposal of Used Oil and Toxic Materials

Augusta Utilities Fat, Oil and Grease (FOG) program periodically holds recycling day and also has containers at the Max Hicks WTP to provide convenient drop off location. In addition, Environmental Services Department has ongoing programs such as Neighborhood Clean-up, offering scrap tire and electronic recycling at no charge. Residents are able to dispose of 4 tires and any electronic devices they may have. Information is also provided to residents describing the proper methods of disposal for household hazardous items, including used oil and toxic materials at Earth Day and similar events. In addition, AED periodically posts informational flyers on the Augusta website regarding stormwater protection, septic system maintenance, pet waste management, and stormwater detention and retention pond maintenance. Augusta is proposing to continue these activities. Augusta will provide details of relevant activities performed during the reporting period in each Annual report.

3.2.7 Sanitary Sewers Infiltration Controls

Augusta Engineering Department (AED) and AUD (Augusta Utilities Department) have ongoing collaborative effort to locate inflow/infiltration, isolated remaining unknown and undocumented combined sewers and sewer overflows, straight-pipes, and sections of sanitary and storm sewer pipes experiencing cross-flow problems. The AED regularly monitors and samples (if warranted) MS4 outfalls for fecal coliform, as well as responds to citizen complaints of sewage odors or spills emanating from the storm sewer system. Findings from these sampling events are discussed with AUD, which undertakes necessary efforts as soon as possible to track, locate, and eliminate the source of sewage flow into the storm system. These efforts, depending of site-specific circumstances, may include visual inspections of storm sewer junction boxes/manholes, TV inspections, smoke testing, dye-tracer testing, and/or systematic, iterative sampling and analysis of the storm sewer system for fecal coliform to pinpoint the source(s).

In addition, AUD has program identifying and recommending inflow and infiltration (I/I) reduction projects, establish priorities, phasing and budgeting. Augusta is proposing to continue reporting these activities in respective year MS4 annual report.

3.3. Industrial Facility Stormwater Runoff Control (122.26(d)(2)(iv)(C))

3.3.1. Industrial Facility Inventory

An inventory of these facilities is provided in Appendix C of this plan. Inventory will be updated annually based on EPD and Augusta License and Inspection Department records or similar sources. Augusta will submit updated inventory with each annual report.

3.3.2. Inspection Program

Illicit discharge monitoring is an ongoing program and applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity. The City Administrator or his/her designee shall be permitted to enter and inspect facilities subject to regulation under this program as often as may be necessary to determine compliance with this ordinance.

- If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to Augusta.
- Facility operators shall allow Augusta ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.
- The AED shall have the right to set up on any permitted facility such devices as are necessary in the opinion of Augusta to conduct monitoring and/or sampling of the facility's stormwater discharge.
- Augusta has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
- Any temporary or permanent obstruction to safe and easy access to the facility to be inspected *and/or* sampled shall be promptly removed by the owner at the written or oral request of the

City Administrator or his/her designee and shall not be replaced. The costs of clearing such access shall be borne by the owner.

- Unreasonable delays in allowing Augusta access to a permitted facility is a violation of a stormwater discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.
- If Augusta has been refused access to any part of the premises from which stormwater is discharged, and *he/she* is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, Augusta may seek issuance of a search warrant from any court of competent jurisdiction.

To comply with the Augusta area-wide MS4 NPDES permit, AED personnel will conduct inspections to ensure runoff and effluent discharges from permitted industrial facilities to its storm sewer system and local streams meet applicable water quality standards and other regulatory requirements. Standards for BMPs and other stormwater runoff, soil erosion, and sediment control will be in accordance with those provided in the latest Manual for Erosion and Sediment Control in Georgia, (Georgia Soil and Water Conservation Commission (GSWCC)) and the Georgia Stormwater Management Manual. The contents of each inspection will include, at a minimum, a review of:

- Facility map and general layout
- Environmental permits issued for the facility, permit numbers, and dates
- Water usage and disposition, including approximate number of gallons used per day for employees, boilers, cooling, washing, irrigation, industrial processes, and other activities
- Facility maintenance practices for storm drains, parking areas, and repair and maintenance areas, indoor drains, and oil/water separators
- Information about wastewater and wastewater pretreatment at the facility
- Any tests or inspections for illicit connections to the storm sewer system
- Wash water practices where vehicles and/or heavy equipment are washed, any cleaning additives used, drains in the wash area, and the use of a mobile washer
- Rooftop and air discharge equipment and their exposure to stormwater runoff (i.e. pipe condensation, exposed motors, fugitive dust, etc.)
- Areas where materials are handled, including types of materials, and any best management practices employed
- Any outdoor manufacturing and storage areas including what activities take place there, what is stored there, and any best management practices employed in those areas
- Waste storage and disposal practices, including such things as dumpsters, trash compactors, waste oil, scrap metal, and any secondary containment present
- The facility's Stormwater Pollution Prevention Plan (SWPPP) will be reviewed, and topics within the document such as preventative maintenance activities, employee training, recordkeeping, and effluent/runoff sampling (if required by the facility permit) will be reviewed to ensure they are complete, accurate, and current
- AED inspectors will visually examine portions of each facility that may contain material that poses a potential threat to local water quality, including but not limited to loading docks, equipment maintenance areas, wash facilities, fuel, oil, and lubricant (new and used) storage

and dispensing areas, oil/water separators, chemical storage areas, waste storage and pretreatment facilities, above ground and underground storage tanks, trash and refuse storage areas, holding and settling ponds and/or pits, battery storage areas, scrap metal areas, and outdoor manufacturing areas. In addition, AED personnel will inspect all on-site stormwater detention and retention ponds, as well as all stormwater outfalls

- In addition to visual examination of the facility, AED Inspector will request and review facility stormwater outfalls discharge monitoring data performed by the industry, if the facility IGP requires discharge monitoring.
- At the conclusion of each inspection, AED personnel will discuss results of the inspection with appropriate facility staff, make recommendations for improvements, discuss any significant violations, and provide a copy of the inspection report for the plant files
- If significant violations are noted, AED will issue a formal notice of violation letter to the facility within three days of the inspection providing details regarding the violations, including remedial measures that must be taken to correct problems, and a schedule for completing the corrective actions

During inspection of facilities, good housing practices will be discussed with operator and fliers provided to be posted on site. Augusta will submitted such information with each annual report and include in Appendix F “Educational Material”. A copy of the inspection form used by AED to document industrial inspections is provided in Appendix E of this plan.

These facilities will be inspected each year at a rate ensuring 100% of total facilities inspected in a 5-year period, as required by the Augusta MS4 program. Augusta will provide number and percentage of facilities inspected and documentation of inspections during the reporting period in each Annual report.

3.3.3. Industrial Site Enforcement Procedures

Enforcement action at deficient industrial sites will follow a prescribed, progressive course of action, unless conditions are observed that pose an immediate and significant threat to human health or the environment. In this later case, the AED will immediately issue a Notice of Violation including halting relevant industrial activities at the site until the problems are corrected. Progressive course of actions include i) Verbal Warning, ii) Notice Violation, iii) Civil and/or Criminal Procurement. These actions are further described below.

- 1) A verbal warning will be issued providing the facility with details regarding the nature and extent of the deficiency, corrective measures that must be taken, and a schedule to submit remedial plan. Such notice will be issued within 72 hours of determination of deficiency requiring facility to submit remedial response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then written response will not be required.
- 2) The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in the remedial plan is reached. If the same deficiencies are still observed, a written notice of violation (NOV) will be issued to the facility providing 5 days to initiate the corrective actions and submit completion schedule.
- 3) The site will be re-inspected by AED staff when the deadline for initiation of correction actions specified in the NOV is reached. If the same deficiencies are still observed, the AED will immediately issue Notice halting in question relevant industrial activities at the site until the problems are corrected.

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code. This code states:

"Sec. 1-6-1. General penalty for violation of Code, etc.; continuing violations.

Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."

Augusta will include summary of enforcement actions, if any, in respective annual report.

3.3.4. Educational Activities

During site inspection good housing practices are discussed with operators and fliers provided to place on bulletin board. Augusta will track such activities as part of facility inspection report and include disseminated information with each annual report. Such education material will be included in Appendix F "Educational Material".

3.4. Construction Site Management Control (122.26(d)(2)(iv)(D))

3.4.1. Legal Authority

All new developments, both commercial and residential, are required to manage runoff quality and maintain runoff release rates at levels which existed prior to the development. This requirement is strictly enforced, which maintains discharge velocities and provides mitigation for water quality degradation by retaining storm water flows and allowing solids to settle rather than being released to receiving waters. The Director of the Augusta Planning and Development Department (APDD) regulates the development of land to protect the community and natural resources from the potential negative impacts of converting land from its natural state to urban land uses. Augusta Engineering Department enforces compliance with applicable land development requirements. Augusta has several ordinances that regulate land development and construction activities. Key regulations are: Comprehensive Zoning Ordinance, Soil Erosion, Sedimentation and Pollution Control Ordinance, Stormwater Management Ordinance, Flood Mitigation Ordinance, Grading Ordinance, Site Plan Regulations, Tree Ordinance, and Green Space Program.

Augusta has recently revised its Erosion, Sedimentation, and Pollution Control (ES&PC) Ordinance and going through legal approval process. Augusta is expecting to complete the process by end of April 2018. A copy of revised ordinance will be included in MS4 2017-2018 Annual Report.

Augusta will provide a copy of revised ordinance in respective year annual report if revision to ES&PC Ordinance is completed during a reporting period.

3.4.2. Site Plan Review

The AED and APDD regulate the preparation of site development plans, establish minimum design standards for site development, set forth procedures to be followed in applying these regulations, provides penalties for violations of these regulations, and sets forth other matters pertaining to the development of land. Currently Augusta Engineering Department has over ten certified professionals (P.E., PLS, Level II Plan Designers, Level II Plan Reviewers and Certified Inspectors) that are involved in development plan review and development inspection program.

Augusta, GA has adopted “one-stop shop” process for Land Development Plan approval process. Development plans are submitted at Augusta Planning and Development Department (APDD). Received plans are distributed to Augusta’s various departments for review, comments and approval of respective elements of site development. Once plans are internally approved, APDD forwards final set to Augusta Engineering Department for conducting Pre-Construction Meeting and releasing Land Disturbing Activity (LDA) Permit.

Augusta site plan regulations have been adopted to:

- Encourage development of an economically sound stable community, so as to help conserve and protect the natural, economic, and scenic resources of Augusta, Georgia
- Protect Augusta, Georgia from the potential negative impacts of converting land from its natural state to urban land uses
- Assure safe and convenient traffic access and circulation, and to minimize the impact of land development on traffic safety and congestion
- Ensure that all buildings and other construction within the scope of these regulations are provided with adequate fire protection and are accessible by all types of emergency vehicles
- Assure that the aesthetic qualities of the community are not degraded by the development of land
- Encourage the wise development of the community in harmony with the Comprehensive Development Plan

The Augusta Engineering Department (AED) has adopted several measures to ensure that construction is consistent with the approved development plan. These measures include a mandatory preconstruction conference held by the AED Engineering Section and periodic inspections during the construction phase. The objective of the preconstruction conference is to make sure that the parties involved (developer, contractors & engineers) clearly understand all the requirements. Periodic inspections made by the Engineering Department, and other departments and agencies of Augusta ensure that development is constructed per the approved plan.

In summary development plan is reviewed to check:

- Plan is prepared by a qualified professional
- satisfies stormwater management requirements
- satisfies Infrastructure design and construction requirements
- satisfies public health and safety
- satisfies erosion, sedimentation, and pollution control requirements

Augusta will provide number of development plan reviewed, approved, dis-approved, and LDA permit issued during the reporting period in each Annual report.

3.4.3. Construction Site Inspection

Augusta Engineering Department staff periodically inspects the sites of land disturbing activities for which permits have been issued to determine if the activities are being conducted in accordance with the Erosion, Sedimentation and Pollution Control plan and whether the measures are effective in controlling soil erosion and sedimentation, and managing stormwater quality as designed. AED has five engineering inspectors and three professional staff on board whose primary responsibility is to conduct site inspections and enforce applicable development codes. In addition, building inspectors are also trained to identify erosion and sedimentation issues and notify AED to follow up. Priorities for inspecting sites are developed based on the potential risk to receiving streams. Although the above criteria describes the high risk areas, all things being equal, it has been determined through experience that the willingness of developers and contractors to provide and properly install structural control measures to prevent offsite migration of sediment is the criteria which provides the greatest benefit to receiving waters. Active construction sites are inspected on a periodic schedule. Sensitive sites and larger developments are inspected at higher frequency. Sites with high potential to impact the environment are inspected more frequently, some on a daily schedule.

Any action or inaction which violates the provisions of the Augusta development regulations may be subject to enforcement actions. If the AED staff determines that a responsible party has failed to comply with the terms and conditions of the approved plans, it issues Notice of Violation (NOV) to such responsible party. Enforcement details are described under “Enforcement Response Plan” Section 3.6.

Active Development Sites inspection information will be transmitted to GA EPD on annual basis as part of MS4 annual report submittal. Augusta will provide number of active land development sites and number of inspections conducted during the reporting period in each Annual report.

3.4.4. Construction Site Enforcement Action

Any action or inaction which violates the provisions of the City development regulations may be subject to the enforcement actions. These enforcement actions may include:

- Verbal warning
- Notice of violation
- Stop work order
- Civil and/or criminal prosecution

Enforcement details are described under “Enforcement Response Plan” Section 3.6.

Enforcement actions information will be transmitted to GA EPD on annual basis as part of MS4 annual report submittal.

A summary table presenting number of inspections conducted, number of warning and notice of deficiency issued, and number of stopped work ordered issued.

3.4.5. Education/Training

The Augusta Engineering Inspection group hold a current and valid Level IB Certified Inspector card issued by the GSWCC. AED personnel responsible for reviewing and approving site plans possess a

current and valid GSWCC Level II Design Professional or Planner Reviewer card. All certified staff attends refresher courses at a frequency required under GSWCC certification.

AED construction inspectors get cross training to perform all functions currently provided by the Augusta Engineering Department. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions. AED inspectors have received required ES&PC training. A copy of training and certification of engineering inspectors will be provided in each annual report.

3.5. Highly Visible Pollutant Source (HVPS) Stormwater Runoff Control (122.26(d)(2)(iv)(C))

3.5.1. HVPS Facility Inventory

An inventory of these facilities is provided in Appendix D of this plan. The AED has compiled a list of 278 highly visible pollutant sources. Inventory will be updated annually based on EPD and Augusta License and Inspection Department records. HVPS information will be transmitted to GA EPD on annual basis as part of MS4 annual report submittal.

3.5.2. Inspection Program

These facilities will be inspected each year at a rate ensuring 100% of total facilities inspected in a 5-year period, as required by the Augusta MS4 program. Field inspections will include visual observation of each site, with particular attention paid to such items as:

- Leaking trash bins, drums, or other waste storage containers
- Leaking pipes, hoses, tanks, or other chemical conveyances
- Stained pavement, gravel, or soil
- Distressed vegetation
- Sheens, stains, or other evidence of improper discharges to storm drains

A copy of the inspection form used by AED to document HVPS source inspections is provided in Appendix E of this plan. Augusta will provide number and percentage of facilities inspected and documentation of inspections during the reporting period in each Annual report.

3.5.3. Enforcement Procedures

Enforcement actions for deficiencies at highly visible pollutant source sites are similar to those for violations observed at development of new industrial sites and construction sites (with the exception of stop work orders). These actions include:

- Verbal warning
- Notice of violation
- Civil and/or criminal prosecution

Enforcement details are described under “Enforcement Response Plan” Section 3.6.

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code. This code states:

"Sec. 1-6-1. General penalty for violation of Code, etc.; continuing violations. Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."

Augusta will submit documentation on HVPS enforcement actions with each annual report.

3.5.4. Educational Activities

During site inspection, good housekeeping practices are discussed with operators and fliers provided to place on bulletin board. To increase awareness among facility operators, AED has developed a number of educational flyers for distribution (Appendix F). AED staff also is available to answer citizens' and facility operators' questions regarding municipal ordinances and stormwater regulations.

Augusta will submit documentation of educational activities performed during the reporting period in each annual report.

3.6. Enforcement Response Plan (ERP)

ERP is included as Appendix to this document. See Appendix L for details.

3.7. Impaired Waterbodies

Section 303(d) of the Federal Clean Water Act (CWA) requires developing 305(b)/303(d) list of waters. The Georgia Environmental Protection Division (GA EPD) develops this list for the State of Georgia rivers and streams in accordance with 40 CFR Part 130.7(b)(4) and guidance provided by the United States Environmental Protection Agency (U.S. EPA). Draft 2016 Section 303(d) list identified the following Creeks in Richmond County as not supporting their designated use due to violation of Surface Water Quality Criteria.

Rae's Creek: Listed criterion violated is Bio F (fish) in 4 miles headwaters to Cranes Creek segment of Rae's Creek. The pollutant of concern identified is "sediment".

Rocky Creek: Listed criterion violated is Bio M, Bio F in 8 miles headwaters to below New Savannah Rd (Doug Bernard Pkwy) segment of Rocky Creek. The pollutant of concern identified is "sediment". The lower two mile segment of Rocky Creek from SR56 to New Savannah Road (Doug Bernard Parkway) is also listed for Fecal Coliform (FC) bacteria impairment due to urban runoff.

Spirit Creek: Listed criterion violated is Bio F (fish) in 14 miles Marcum Branch to McDade Pond segment of Spirit Creek. The pollutant of concern identified is "sediment".

Augusta updated the Impaired Water Plan (IWP) for above listed creeks in early 2017. These plans were approved by EPD in March 2017. A copy of the approved IWPs is presented in Appendix G.

Collected data and its assessment summary will be reported with MS4 annual report. Presented summary will include water quality trends and suggested changes in assessment monitoring for possible source targeting.

3.8. Municipal Employee Training

Training and education for Augusta employees is provided on a case by case basis which is determined by the area of work and the manner in which work is being performed. Where workers require education about potential impacts of pollutants, the necessary information is conveyed to ensure the operator clearly understands the implications of storm water pollution which may result from a project such as the one being performed.

AED-Engineering has various levels of trained staff capable of detecting unauthorized discharges in the Augusta MS4 system. Engineering Inspectors and professional staff all are trained in erosion, sedimentation and pollution control management. Also stormwater quality subject matter is discussed at monthly staff meeting. Engineering inspectors get cross training to perform all functions currently provided by the Augusta Engineering Department. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions. All of the Engineering Department inspectors have received Erosion, Sedimentation and Pollution Control training and attend annual in-house training sessions covering topics of pollution prevention and identification of Illicit discharges.

Augusta will conduct at a minimum one training session for the Augusta Engineering Inspection group and provide copy of training sign-in and topics of material covered with annual report.

3.9. Public Education

3.9.1 In-house training Training videos regarding stormwater pollution prevention will be shown to Augusta personnel involved in stormwater management, maintenance, and land development. A copy of attendance sheets will be included with each annual MS4 report. This education of in-house staff will enhance communication with and education of land development firms and contractors when AED inspectors oversee activities at construction sites.

3.9.2. Private and commercial owners

Efforts to bring privately owned stormwater management facilities into compliance with local ordinances are ongoing. Annually letters are mailed to owners of all private and commercial ponds on record informing them that they own a pond, and what their responsibilities are to ensure compliance with the Augusta stormwater ordinance.

Augusta will submit documentations of educational activities performed during the reporting period in each annual report.

3.9.3. Public postings

Educational material developed by AED will be posted on the web site and periodically mailed as utility bill inserts. At a minimum, one public education activity such as a flyer, web posting or utility insert will be performed by the AED during each reporting year and reported with respective annual MS4 report. Such activity will be tracked, keeping record of web posted material, webpage print outs and material distributed. Educational material developed by AED will be submitted as Appendix to respective annual report.

3.9.4. Education through Phinizy Center for Water Sciences

Educational activities will be performed in association with the Phinizy Center for Water Sciences (PCWS). Augusta Engineering Department is using PCWS as an extension for public education activities. Augusta funded and supported development of the PCWS (Phinizy Swamp Nature Park). PCWS facility is located at an Augusta owned parcel and Augusta provides continuous support to the facility. Augusta Utilities Department and Augusta Engineering Department are financially contributing to carry out some of the activities by the PCWS. The 1,100 acre Nature Park is part of 7,000 acre Phinizy Swamp and is free to the public. Phinizy Swamp provides a unique environment to educate the public concerning water quality degradation, the impact of nonpoint sources of pollution and the treatment achieved by the natural systems. Classes, tours and workshops are held at the Phinizy Swamp Nature Park. There are around 40,000 visitors annually. This facility provides a unique environment to educate the public concerning water quality degradation, the impact of nonpoint sources of pollution, and the treatment achieved by preserving and maintaining natural ecosystems.

The Phinizy Center provides K-college educational field trips throughout the school year, they have educated over 60,000 students since its inception in 1996. Since 2015, Phinzy Center has specifically incorporated stormwater topics into their field trip offerings. Each year, Phinizy Center provides AED with the field trip title, number of field trips, and number of students in attendance for each stormwater related field trip. Those data will be provided in each annual MS4 report.

Details of activities (including Public Education) carried out by the Phinizy Center for Water Sciences will be submitted as Appendix to respective annual report.

Augusta is proposing to continue aforementioned activities and will submit documentations of educational activities performed during the reporting period in each annual report.

3.10. Public Involvement

Augusta has established partnership with several local area groups in order to involve the public with stormwater related activities and efforts to improve stormwater.

3.10.1. Augusta-Richmond County program

In 2017, Augusta-Richmond County developed a local chapter of "Keep America Beautiful" (KAB), known as the "Keep Augusta Beautiful" program. This program is intended to focus on anti-litter and recycling programs. As part of this initiative, AED will work with the KAB team to track activities conducted under this program and will report stormwater-related initiatives and data for the annual MS4 report.

3.10.2. Augusta Gateway Improvement Program

Under the Augusta “Gateway Improvement” program (advanced version of ‘Adopt-A-Road’ program), local groups adopted several roads and keep up with landscaping, cleaning and median enhancement. Roads included are Wheeler Road, St. Sebastian Way, Gordon Hwy, Section of Greene Street, Section of Walton Way, and Alexander Drive.

Augusta will submit list of road section under “Gateway Improvements” program and associated maintenance activities conducted during the reporting period in each annual report.

3.10.3. Annual clean-up events

Augusta Engineering Department (AED) developed a joint working relationship with local nonprofit groups (e.g. Phinizy Center and Savannah Riverkeeper) to support waterways and adjacent areas volunteer cleanups; the largest of these events is usually associated with GAEPD’s Rivers Alive event. All these groups are working as extensions of the Augusta Engineering Department and have conducted multiple public involvement events. As part of our co-sponsorship with these organizations, Augusta Engineering receives results from each of these events. Augusta Engineering will provide submitted data from these events for each annual MS4 report. See Appendix F for recent events.

Augusta is proposing to continue aforementioned activities. A minimum one public activity such as Augusta Living Green Day, Earth Day, Arbor Day or Augusta Gateway Landscaping Initiative will be performed during each reporting year and reported with respective annual MS4 report. Such activity will be tracked photographically or keeping a record of material / flyer distributed or sign-up sheets.

3.11. Post-Construction

3.11.a Post Construction Stormwater Control

3.11.a.1 Ordinance Overview:

Control over significant new development is largely a function of legal controls and review of site and development plans. All new developments are required by the Augusta Land Subdivision regulations, Augusta Site Plan regulations, Augusta Stormwater Management ordinance, and Augusta Soil Erosion, Sedimentation and Pollution Control ordinance (See Section 3.1.3 for description of referred regulations & ordinances) to maintain runoff release rates at pre-development levels and manage runoff quality. This requirement is strictly enforced, which maintains discharge velocities and provides mitigation for water quality degradation by retaining stormwater flows and allowing solids to settle rather than being released to receiving waters. More stringent requirements are in-place for development in Special Consideration Basins such as Rae's Creek Basin, Rock Creek, and Rocky Creek Basin. The Tree Ordinance requires preservation or planting of trees, establishing greenspace, and establishment of a street yard in conjunction with all new development.

Augusta has a Comprehensive Plan in place to manage land use and zoning. The original plan was adopted in 1992. The Plan is updated periodically. Latest update was in 2008. This Comprehensive Plan is a long-range plan for managing and guiding Augusta's development over the next 20 years. The Plan examines the existing conditions affecting development, enumerates the needs and goals for the future development of the City, and spells out the strategy for addressing needs and achieving goals. The elements of the Plan include Population, Housing, Economic Development, Transportation, Community Facilities and Services, Historic Resources, Natural Resources/Greenspace Program, and Land Use. The

Natural Resources/Greenspace Program includes an inventory of natural and environmentally sensitive resources in the City Addressing such topics as topography, soils, agricultural land and forestland, air quality and water resources. The City's Greenspace Program is also integrated into this element of the plan.

Augusta, Georgia codes provide unique opportunity to the development community by offering a "Conservation Subdivision" approach to protect natural resources including surface water quality. Also Augusta Engineering Department applies case by case approach to approve LID development. This approach is applied due to lack of site specific data that can be used across the board.

3.11.a.2 Performance Standards:

New development & redevelopment plans are submitted to the Augusta-Planning and Development Department for project approval. The development plans are reviewed by the City staff to ensure that the proposed development conforms to all provisions of the Comprehensive Zoning Ordinance including land use, buffers, and other features regulated by the Zoning Ordinance. Design guidelines and construction standards for new development and redevelopment are provided by the Augusta Development Document. This includes Comprehensive Zoning Ordinance, Land Subdivision Regulations, Site Plan Regulations, Stormwater Ordinance, Stormwater Management Plan Technical Manual, Street & Road Design Technical Manual, Tree Ordinance, Flood Damage Prevention Ordinance, Soil Erosion, Sediment Control and Pollution Control Ordinance, Grading Ordinance, Groundwater Recharge Area Protection Ordinance, Water Supply and Watershed Ordinance, Augusta Utilities Department Design Standards and Right-of-Way Encroachment for Utilities Guidelines.

In addition to addressing the issues that deal with flood plain and soil erosion and sediment control, the development regulations require that the developer submit Stormwater Management Plan, a hydrology study and a descriptive note providing BMP information for review by the City Engineer. Stormwater management design for submitted projects is assessed using Augusta Stormwater Management Manual and associated guidance documents.

All stormwater runoff shall be adequately treated to maximum extent practicable prior to discharge. The storm water management system shall be designed to capture and retain or treat the water quality treatment of volume, which is defined as the runoff volume resulting from the first 1.2 of rainfall from a New Development that creates or adds 5,000 square feet or greater of new impervious surface area, or that involve land disturbing activity of one acre of land or greater, Or Redevelopment that creates, adds or replaces 5,000 square feet or greater impervious surface area, or that involves land disturbing activity of one acre of land or greater. If the first 1.0 inch of rainfall can be retained onsite then additional water quality treatment is not required. If the first 1.0 inch of rainfall cannot be retained onsite, the remaining runoff from a 1.2-inch rainfall event be treated using control measures that provide 80 percent reduction in total suspended solids load from the remaining runoff.

Some of the stormwater conveyance system design alternatives are as follows:

- Pipe networks shall be designed to carry not less than the storm water from a rainfall expected to occur once in 25 years (25-year storm). Creek crossing should be designed for 100year storm conveyance.
- Detention ponds or containment areas shall be designed based on a 50-year storm with stage releases at 2, 10, 25, and 50 years. Facility should include an emergency spillway to accommodate the 100-year storm.

The AED has adopted several measures to ensure that construction is consistent with the approved development plan. These measures include a mandatory preconstruction conference held by AED Engineering Manager or his designated representative and periodic inspections during the construction phase. The objective of the preconstruction conference is to make sure that the parties involved (developer, contractors & engineers) clearly understand all the requirements. Periodic inspections made by the Augusta Engineering Department and other departments and agencies of the City, ensure that development is constructed per the approved plan.

Variations

The AED may grant a variance from requirements of this program if exceptional circumstances applicable to a site exists such that strict adherence to these provisions will result in unnecessary hardship and will not fulfill the intent of this program. A written request for a variance shall be required and shall state the specific variance sought and the reasons, with supporting data, a variance should be granted. The request shall include all information necessary to evaluate the proposed variance.

Augusta Stormwater Design Performance Standards

Performance Standard	Description
Stormwater Quality Protection	<p>Runoff Reduction (RRV) Retain or reduce the runoff for the first 1.0 inch of rainfall</p> <p>TSS Removal (WQV) Treat the stormwater resulting from a rainfall depth of 1.2 inches to a presumed average annual TSS removal of 80%</p>
Stream Channel Protection	Provide extended detention of the 2-year 24-hour storm event released over a period of 24 hours.
Overbank Flood Protection	Provide peak discharge control of the 50-year, 24-hour storm event such that the post development peak discharge does not exceed the predevelopment peak discharge.
Extreme Flood Protection	Safely pass the peak discharge of the 100-year, 24-hour storm event, such that adverse effects are not expected for the on-site stormwater drainage system
Downstream Channel Analysis	Evaluate the effects of the 100-year storm event to a prescribed point downstream.

3.11.a.3 Linear Transportation Projects:

Site Constraints on Linear Transportation Projects present unique challenges to meet permit required performance standards. The needs, viability of the project, and public safety must be balanced with the protection of local natural resources. Some of the siting challenges are right-of-way limitations, land acquisition limitations, urban and highly developed sites, limited footprint, maintenance access and safety, land availability and cost, and topography.

Primary objective managing Linear Transportation Project runoff is minimizing post-construction additional impact to water quality and hydrologic performance of receiving stream(s). As such, we have adopted the approach that is driven primarily by site-specific engineering constraints. Augusta has developed a program that satisfies regulatory requirements and same time provides flexibility to accommodate site specific constrains and accordingly incorporate techniques/control that will provide desired performance measures to maximum extent practicable.

Exclusions

Roads not owned by Augusta, GA; maintenance and safety improvements projects; projects with runoff exiting as sheet flow at discharges point(s) and not causing instability, erosion or flooding; roadway improvements projects not requiring additional right-of-way; improvements not requiring new MS4 outfall(s); and projects that are under design prior to April 12, 2017 are excluded from meeting required current performance standards. However, all efforts should be made minimizing additional impact to receiving waterbodies water quality to maximum extent practicable.

Management Practices

Goal is to Capture, Infiltrate, Treat, and Reduce runoff while maintaining public safety (such as automobile, bicycle and pedestrian protection) as top priority. Augusta is proposing utilizing vegetative control measures to achieve this goal. Such control measures includes vegetated biofilter (consists of vegetated graded shoulders, vegetated strip, vegetated slope, vegetated swale), Grass Channel, and landscaped strip. Other control measures such as streetscape, landscaped median, decentralized stormwater conveyance, and roadside vegetation management (to minimize the amount of pollution carried off in stormwater). Stormwater management design for submitted management practices will be assessed using Augusta Stormwater Management Manual and associated guidance documents.

Factors to be considered for Feasibility

Travel way safety (such as ponding potential, freezing potential), Clear Zone safety, Public Health safety (such as mosquito habitat), Maintenance Access limitation, Cost Escalation (such as BMP cost >10% of total construction cost; schedule delay >90 days; utility relocations), Impact to surroundings, Drainage Area, Downstream Impact beyond specified point, Subsurface Material and Conditions.

Augusta proposes to evaluate aforementioned factors utilizing following current industry standards.

- I) Clear Zone Safety: Georgia Department of Transportation Roadway Clear Zone safety Criteria.
- II) Ponding and Freezing Potential: Hydrology & Hydraulic assessment.
- III) Public Health Safety (mosquito habitat): Department of Health public Health criteria.
- IV) BMPs Cost: over 10% of roadway improvements cost or over \$100,000 whichever amount is less

- V) Impact to Surroundings /Drainage Area / Downstream Impact: Hydrology & Hydraulic assessment.
- VI) Subsurface Material and Conditions: NRCS soil survey data for determining substratum physico-chemical characteristics relevant to infiltrate and treat surface runoff.

3.11.b Green Infrastructure and Low Impact Development (GI/LID)

3.11.b.1 Ordinance Review / Legal Authority:

The Augusta Engineering Department and the Augusta Planning and Development Department have begun efforts to actively encourage local developers to utilize green infrastructure practices. Personnel from these departments have visited other communities with active Low Impact Development (LID) and Leadership in Energy and Environmental Design (LEED) programs to observe firsthand how these programs are administered and operated. In addition, these same personnel have attended several workshops and seminars regarding green infrastructure, Low Impact Development (LID), No Adverse Impact (NAI), and sustainability.

In 2003, The Augusta Planning Commission (formerly known as Augusta-Richmond County Planning Commission) instituted a "Conservation Subdivision" amendment to their Comprehensive Zoning Ordinance to promote conservation of sensitive areas such as wetlands and floodplains. Additionally, the Augusta Flood Damage and Prevention Ordinance exceeds the minimum standards of the National Flood Insurance Program (NFIP) and again, encourages preservation of or minimal impact to floodplain areas.

Augusta ordinances have been reviewed to ensure contents of these regulations do not prohibit or discourage the use of LID or LEED practices, and the results of that review indicate they do not. Ordinances reviews are completed in 2012 using Center for Watershed Protection "Code and Ordinance Worksheet (COW)". The COW allows an in-depth review of the standards, ordinances, and codes that shape how development occurs in local communities. Augusta assessment score is 81 and is within acceptable standards per COW. A copy of completed COW is provided in Appendix J of this plan.

Augusta reviews its land development ordinances as needed and makes warranted changes. A copy of revised ordinance will be provided in respective year annual report if revision to any of these ordinances is completed.

3.11.b.2 GI/LID Program (Techniques and Control Measures):

Green Infrastructure/Low Impact Development (GI/LID) Program is included as Appendix to this document. See Appendix M for details.