CITY OF BESSEMER

THE MARVEL CITY

1700 Third Avenue North ● Bessemer ● AL 35020

Storm Water Management Program Plan (SWMPP)

Revision:
June 2023

Prepared by:
Freddie Freeman
Stormwater Specialist
City of Bessemer
And
Ronald R. Gilbert, P.E.
Bessemer City Engineer
And
EEFS Company, PC

Signatory and Certification:

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

8/21/2023

Kenneth E. Gulley
Mayor, City of Bessemer

Date

1700 Third Avenue North
Bessemer, AL 35020

(205) 424-4060

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1. INTRODUCTION

1.1 Regulatory Overview

The City of Bessemer (the City) was issued, by the Alabama Department of Environmental Management (ADEM), a Municipal Separate Storm Sewer System (MS4) Phase 1 Permit No. ALS000022 on December 12, 2022 (**Appendix A)**. The permit took effect on December 12, 2022 and will expire on December 11, 2027.

As a condition of this permit, "The permittee is required to develop, revise, implement, maintain and enforce a storm water management program (SWMP) which shall include controls necessary to reduce the discharge of pollutants from its MS4 consistent with Section 402(p)(3)(B) of the Clean Water Act and 40 CFR Part 122.26. These requirements shall be met by the development and implementation of a storm water management program plan (SWMPP) which addresses the best management practices (BMPs), control techniques and systems, design and engineering methods, public participation and education, monitoring, and other appropriate provisions designed to reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP)". (PART II, A. 1.)

Per the requirements of NPDES Permit No. ALS000022, BMPs, measurable goals, and responsibility designations are provided for each of the following program elements:

1. Storm Water Collection System Operations
2. Public Education and Public Involvement on Storm Water Impacts
3. Illicit Discharge Detection and Elimination
4. Construction Site Strom Water Runoff Control
5. Post-Construction Storm Water Management in New Development and Re-Development
6. Spill Prevention and Response
7. Pollution Prevention/Good Housekeeping for Municipal Operations
8. Application of Pesticide, Herbicide, and Fertilizers
9. Oils, Toxics, and Household Hazardous Waste Control
10. Industrial Storm Water Runoff

1.2 MS4 Jurisdictional Boundary

See **Appendix B** for the City MS4 jurisdictional boundary map.

2. STORM WATER COLLECTION SYSTEM OPERATIONS

2.1 Structural Controls Mapping

The City currently has no owned/maintained structural controls within the MS4 boundary limits.

The City will continue to monitor and integrate any addition of City owned/maintained structural controls.

Responsible Department: Building Inspections

2.2 Structural Controls Inspection

As stated in the permit, all existing and new structural controls owned/maintained by the permittee shall be inspected using a standard inspection form found in **Appendix C** on a semi-annual basis, at a minimum. While the City does not own/maintain structure controls currently, any future inspections will be done by a city inspector. Any deficiencies or maintenance recommendations listed on the inspection form in regards to the structural control will be addressed by Building Inspections.

The City is not responsible for any routine inspection or maintenance for private structures.

Responsible Department: Building Inspections

2.3 Standard Operating Procedure (SOP) For Structural Control Inspection and Maintenance Procedures

The standard inspection form found in **Appendix C** is used to document structural control inspections. Once any maintenance is completed, a city inspector will re-inspect the Structural Control to make sure the structure can effectively function as designed.

Responsible Department: Building Inspections

2.4 Stabilization and Re-vegetation of Eroded Areas

During the inspection of the structural controls, areas of erosion will be documented. The Building Inspection Department will receive a copy of the inspection documentation noting the eroded areas and will stabilize and re-vegetate these areas.

Responsible Department: Building Inspections

2.5 Floatables, Litter, Sediment and Debris in Structural Controls

All notable floatables, litter, sediment, and/or debris found during the structural inspection will be documented. The Building Inspection Department will receive a copy of the inspection documentation and will remove the noted items. Public Works Department will maintain documentation of the estimated amounts of floatables, litter, sediment and debris removed during maintenance activities.

Responsible Department: Building Inspections

3. PUBLIC EDUCATION AND PUBLIC INVOLEMENT ON STORM WATER IMPACTS

3.1 Development, Revision and Implementation of the SWMPP

After the SWMPP being revised per the NPDES MS4 permit, the City is in the process to implement and comply with the permit requirements.

Responsible Department: Administration

3.2 Targeted Pollutant Sources for Public Education

The City discusses targeted pollutant sources through the workshops sponsored by the City.

Responsible Department: Administration

3.3 Reduction of Litter, Floatables and Debris

The City currently maintains a street sweeping program year-round by the Public Works Department.

Responsible Department: Administration

3.4 Educating Individuals and Households on Reducing Storm Water Pollution

Currently the City has posted on its website a page describing the Bessemer's Stormwater program. The page includes general information about what is stormwater, pollution prevention, and different ways to reduce stormwater pollution in relation to the different community segments.

Responsible Department: Administration

3.5 Community Involvement with the Storm Water Program

3.5.1 General Public

The City will continuously improve the storm water page on its website with information that informs the general public of:

- General impacts litter has on waterbodies and ways to reduce the litter
- General impacts of storm water into surface water from impervious surfaces
- Source control BMPs in areas of pet waste, home vehicle maintenance, landscaping and rain water reuse
- Impacts of illicit discharges and how to report them

Responsible Department: Administration

3.5.2 Business

The City will continuously improve the storm water page on its website with business-related topics:

- Information on BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials
- Impacts of illicit discharges and how to report them

Responsible Department: Administration

3.5.3 Homeowners, Landscapers, and Property Managers

The City will continuously improve the storm water page on its website to inform homeowners, landscapers, and property managers on the following topics:

- BMPs and storage of pesticides, herbicides, and fertilizers
- Detention/retention pond maintenance
- General impacts of storm water from impervious surfaces into surface water

Responsible Department: Administration

3.5.4 Engineers, Contractors, and Developers

The City will continuously improve the storm water page on its website to inform engineers, contractors, and developers on the following topics:

- Impacts of increased storm water flows into receiving waterbodies
- Runoff reduction techniques and low impact development (LID)/green infrastructure practices. Specifically addressing innovated site design, pervious pavement, alternative parking lot design, retention of forests and mature trees

Responsible Department: Administration

3.6 Evaluating the Effectiveness of the Public Education Program

The City will evaluate the effectiveness of the public education program by monitoring and reporting the number of visitors to the storm water website page annually and the number of attendances to the City quarterly lunch and learn programs.

Responsible Department: Administration

3.7 Public Awareness Activities

- The City has a quarterly lunch and learn program to educate public with various topics
- The City will sponsor elementary school student attendance at related storm water events
- The City will work with students at Bessemer City High School to educate them in storm water related topics

Responsible Department: Administration

4. ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

4.1 MS4 Map

Maps of the major outfalls, structural controls owned/maintained by the City, and waters of the State within the MS4 boundary that receive discharge from the major outfalls can be found in **Appendix D**. Also, a list of the major outfalls latitude and longitude coordinates can be found in **Appendix D** and a list of the structural controls latitude and longitude can be found in **Appendix D**.

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Responsible Department: Building Inspection

4.2 Ordinance/Regulatory Mechanism

City of Bessemer Stormwater Management Ordinance
City of Bessemer Zoning Ordinance
City of Bessemer Subdivision Ordinance

The City will review and update these ordinances to confirm to the requirements of NPDES permit ALS000022.

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Responsible Department: Building Inspection

4.3 Dry Weather Screening Program

At a minimum, dry weather screening of 15%-20% of the major outfalls will be performed annually with 100 percent of the major outfalls screened at least once per the five-year permit period. Currently there are no priority outfalls identified within the MS4 boundary, but if during the dry weather inspections, they are identified, they will be screened on an annual basis. City shall use the EPA's guidance manual, *Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments*, Center for Watershed Protection, October, 2004, for the main source of investigative techniques and guidance for the dry weather screening process. Outfalls will be field inspected after a minimum of 72 hours of dry weather. Data sheets found in **Appendix D** will be filled out for each outfall inspected.

In addition to the required dry weather screening program, Public Works staffs and inspectors will be trained to recognize and report potential illicit discharges while conducting their day to day operations. Also, all citizen complaints regarding potential illicit discharges will be investigated.

Responsible Department: Building Inspection and Public Works

4.4 Source Identification

If during the dry weather screenings, Public Works Department identification, or citizen complaint, an outfall is found to be discharging a liquid, the city inspector will traverse upstream of the discharge in an attempt to identify the source of the discharge. If the discharge source is unidentifiable, then a sample of the discharge shall be collected by the city inspector and analyzed by a qualified lab. Based on the lab results, the outfall will be prioritized and scheduled for further investigation if needed.

Responsible Department: Building Inspection and Public Works

4.5 Illicit Discharge Elimination

Bessemer Fire Department conducts pre-incident plans practices throughout the permit year. These pre-incident plans are conducted at facilities that are NPDES facilities. The Fire Department walks through each site to identify where hazardous materials are stored and they develop a plan to prevent the release of hazardous materials during an emergency and identify where is illicit discharge at the facility. As a part of these comprehensive inspections, the spill prevention, countermeasures and control plans of those facilities are reviewed as well as any NPDES storm water permit issued by ADEM.

Once the source and responsible party of an illicit discharge has been identified, the City will take action through its pertinent ordinances.

The City will review and update this ordinance to conform to NPDES permit ALS000022.

More BMPs will be found in **APPENDIX E**, City of Bessemer Integrated Storm Water Pollution Prevention Program.

Reported spill and illicit discharge investigation form is in **APPENDIX F**.

Responsible Department: Building Inspection and Fire Department

4.6 ADEM Notification by the City

If a suspected illicit discharge enters the City's MS4 boundary from an adjacent MS4, the City will notify the adjacent MS4 and the ADEM Water Division within 48 hours of observing the suspected illicit discharge. The Standard Operating Procedure for this action is found in **Appendix G**.

Responsible Department: Building Inspection and Public Works

4.7 Illicit Discharge Reporting by the Public

The City does not currently have a dedicated way for the individuals to contact the City. The City will specify the Fire Department and City Stormwater Specialist on the storm water webpage to easily allow the public to report illicit discharges to the City.

Responsible Department: Administration

4.8 Personnel Training

Non-First Responder of City Personnel will be trained by the City of Bessemer Stormwater Specialist on IDDE identification and response annually.

Responsible Department: Administration

4.9 Ordinance/Regulatory Mechanism Availability

All ordinances and regulatory mechanisms can be found on the City's website or through the link to Municode on Bessemer's website.

Responsible Department: Administration

5. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

5.1 Site Plan Review

City Zoning Ordinance Section 2.13 states that submission of a preliminary development plan and a final development plan is required prior to the issuance of a building permit for all developments in all but single-family residence districts.

Upon receipt of an applicant's final development plan, the City Engineer shall appropriate for his review, report, and recommendation to the City Planning and Zoning Commission.

No land disturbing activity may be commenced prior to issuance of a permit.

Responsible Department: Building Inspection

5.2 Site Inspection Plan

The City will perform site inspections on sites that have been issued land disturbance permits in accordance with the frequency requirements of the NPDES permit. Erosion controls and best management practices will be inspected during the site inspections. If there are deficiencies noted, the permit holder will be notified that they did not pass inspection, and will need to correct deficiencies and request a re-inspection.

Responsible Department: City Engineer and Building Inspection

5.3 Training of MS4 Site Inspection Staff

City staff responsible for construction site inspections receive QCI training annually.

Responsible Department: Building Inspection

5.4 Construction Site Inspection Checklist

See **APPENDIX H** for the City's Construction Storm Water Inspection and Enforcement Standard Operating Procedures (SOP) Manual.

See **Appendix I** for the City's construction site inspection checklist.

Responsible Department: City Engineer and Building Inspection

5.5 Enforcement Response Plan (ERP)

An Enforcement Response Plan will be reviewed, updated, and included in the City Ordinance.

Responsible Department: Administration

5.6 Construction Site Operator Training

The City provides construction site operator's informational materials regarding appropriate application and maintenance of erosion and sediment controls when they receive their permits from the Building Inspection Department. The City will develop a storm water page on its website and have brochures at City facilities that inform the engineers, contractors and developers on:

- Impacts of increased storm water flows into receiving waterbodies.
- Run-off reduction techniques and low impact development (LID)/Green infrastructure practices. Specifically addressing site design, pervious pavement, alternative parking lot design, retention of forests and mature trees.

Responsible Department: City Engineer and Building Inspection

6. POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND RE-DEVELOPMENT

6.1 Ordinance/Regulatory Mechanism

The City's Subdivision & Development Regulations addresses storm water design requirements for post-construction storm water management.
The City will review its ordinances, codes, regulations, and procedures regarding post construction storm water management and make revisions as necessary per the permit. Reviews will specifically consider the following:

- Procedures to develop, implement and enforce systems of appropriate structural and/or non-structural BMPs.
- Procedures to develop, implement and enforce performance standards.
- Procedures for encouragement of the utilization of LID/green infrastructure practices.
- Procedures to ensure compliance with the ordinance or regulatory mechanism including the sanctions and enforcement mechanisms the permittee will use to ensure compliance. If an ordinance mechanism needs to be developed, then the permittee must provide a timeline for the development of the ordinance and/or regulatory mechanism.
- Procedures for post-construction inspections to include tracking and enforcement.
- Procedures to ensure adequate long-term operation and maintenance of BMPs.

The City Engineer and Building Inspection Department will have input into the ordinance's creation. Reviews will be competed in Fiscal Year 2023.

Responsible Department: City Engineer and Building Inspection

6.2 Inventory of Post Construction Structural Controls

The City currently has no publicly-owned structural controls. The City will develop a list of privately-owned structural controls for those built after the codification of the new requirements. The City will update annually the list of publicly-owned post construction structural controls and the privately-owned structurally controls under the new requirements.

Responsible Department: Building Inspection

6.3 Post-Construction Hydraulic Design Requirements

The permit requires that a 1.1-inch rainfall over a 24-hour period preceded by a 72-hour antecedent dry period shall be the basis for the design and implementation of post-construction BMPs.

All property owners shall comply with City MS4 permit requirements if construction permits are issued after December 12, 2022.

Responsible Department: City Engineer and Building Inspection

6.4 Post-Construction BMP Plan Review

All property owners/developers shall include the post-construction BMP plan as part of the development plan review process if construction permits are issued after December 12, 2022.

Responsible Department: City Engineer and Building Inspection

6.5 Post-Construction BMP Plan "As Built" Submission

All property owners/developers are required to submit an "as built" certification of the post-construction BMPs within 120 days of the completion of the construction or after receiving the certificate occupancy for construction permits issued after December 12, 2022.

All "as built" certifications shall be signed and sealed by Alabama licensed professionals.

Responsible Department: City Engineer and Building Inspection

6.6 Post-Construction BMP Annual Inspection

For construction permits issued after December 12, 2022, all property owners are required to perform, at a minimum, an annual post-construction inspection, **APPENDIX J**, to ensure that design standards are being met and require corrective actions to poorly functioning or inadequately maintained post-construction BMPs. The property owner shall document the post-construction inspection. Such document shall include, at a minimum:

- Facility type
- Inspection date
- Name and signature of the inspector
- Site location
- Owner information (name, address, phone number, fax, and email)
- Description of the storm water BMP condition that may include the quality of: vegetation and soils, inlet and outlet channels and structures, embankments, slopes, and safety benches; spillways, weirs, and other control structures; sediment and debris accumulation in storage and forebay areas as well as in and around inlets and outfall structures
- Photographic documentation of all critical storm water BMP components
- Specific maintenance items or violations that need to be corrected by the owner/operator of the storm water control or BMP
- Maintenance agreements for long-term BMP operations and maintenance
- A copy of the “as built” certification of the post-construction BMPs which was accepted by City under Section 6.5

All property owners/operators are required to keep records of post-construction inspections and maintenance activities and make them available to the City upon request.

Responsible Department: City Engineer and Building Inspection

7. SPILL PREVENTION AND RESPONSE

7.1 Spill Prevention / Spill Response Plan

The City's SOP for spill response is found in **Appendix E**.

Responsible Department: Fire Department

7.2 Personnel Spill Prevention/Response Training

Bessemer Fire Department is responsible for the training and certification of their personnel. An annual training will be provided to municipal personnel on spill prevention/response.

Responsible Department: Fire Department

8. POLLUTION PREVENTION / GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

8.1 Municipal Facilities Inventory

See **Appendix K** for a map of municipal properties as well as the locations for vehicle and equipment maintenance facilities and a copy of the inspection form to be completed annually and submitted with the Annual Report to ADEM. The map shows which department maintains which properties. Generally Public Works Department mows and applies pesticides, herbicides, and fertilizers. The map will be reviewed annually and updated if needed. Public Works Department will compile the data provided by each Department.

Responsible Department: All Departments

8.2 Good Housekeeping Practices SOP

See **Appendix L** for the good housekeeping Practices SOP .

Responsible Department: Public Works Department

8.3 Inspection Plan

Annual inspections will be conducted for municipal facilities, to include municipal maintenance shops and equipment yards, for good housekeeping practices, including BMPs. See **Appendix L** for the inspection checklist.

Responsible Department: Building Inspection and Public Works Department

8.4 Good housekeeping Training Program

City staff will be trained annually on good housekeeping practices as outlined in the SOP manual, see **APPENDIX L**.

Responsible Department: Building Inspection and Public Works Department

9. APPLICATION OF PESTICIDES, HERBICIDES, AND FERTILIZERS (PHFs)

9.1 Good housekeeping Training Program

The **Public Works Department** keeps annual records of pesticide, herbicides, and fertilizers (PHFs) used at municipal facilities. Each chemical used is applied per the labeling instructions. **Material safety data sheets (MSDS)** on each product are found in the chemical storage areas. City staff responsible for application of PHFs receives annual training in safe use, storage, and disposal of PHFs. All contractors contracted to apply pesticides or herbicides to City property shall provide proper certification and licensing before performing work. Also, contractors contracted to apply fertilizer must provide qualification in utilizing proper nutrient management practices.
City facilities that store PHF will be inspected annually to determine proper storage, product labeling, and MSDS accessibility.

Responsible Department: Building Inspection

9.2 PHF Training Program

City staff will be trained annually on PHFs as outlined in the SOP manual.

Responsible Department: Building Inspection

10. OILS, TOXICS, AND HOUSEHOLD HAZARDOUS WASTE

10.1 Public Education on Proper Disposal

The City currently has on their website an SOP on how citizens should report spills, illicit discharges and improper disposals.
The City also provides a list of facilities in the area that accept used oil on the storm water website. Brochures on oils, toxics, and household hazardous waste are on the City storm water website as well as placed in City facilities for public pick-up.

Responsible Department: Building Inspection

10.2 Annual Employee Training

Annual training on spill prevention is provided to City personnel by Bessemer Fire Department.

Responsible Department: Bessemer Fire Department

11. INDUSTRIAL STORM WATER RUNOFF

11.1 Inventory of High Risk Facilities

The City maintains a list of industrial and high-risk facilities within the city limits, see **Appendix E**. This list is updated annually.

The list of industrial facilities be reviewed annually for completeness and accuracy and will be updated when necessary. A map of the industrial and high-risk facilities can be found in **Appendix E.**

Responsible Department: Building Inspection and Fire Department

11.2 Inspection of High-Risk Facilities

Fire Department conducts comprehensive inspections annually.

Responsible Department: Building Inspection and Fire Department

12. WET-WEATHER MONITORING AND REPORTING

12.1 Monitoring Locations

The monitoring locations are as follows:

Watershed	**Valley Creek**	**Valley Creek**	**Shades Creek**	**Shades Creek**
Site ID	VCDW01	VCDW02	SCDW01	SCDW02
Address Nearest To	2433 19th Street, Bessemer	6591 Johns Rd, Bessemer	2098 John Hawkins Pkwy, Bessemer	7112 – 7310 Dickey Springs Rd, Bessemer
Type	In-Stream	In-Stream	In-Stream	In-Stream
Location	Lat: 33.420177 Long: -86.98039	Lat: 33.388216 Long:-87.059692	Lat: 33.354759 Long:-86.876954	Lat: 33.325883 Long:-86.948626

VCDW01 at bridge going to Hueytown

VCDW02 at WWTP

SCDW01 on 150 at bridge after Lake Cyrus Entrance

SCDW02 at bridge before Pleasant Hill Rd

Responsible Department: Building Inspection

12.2 Impaired Waterways

The City will review the waterbodies listed in the latest final §303(d) list, annually. If a waterbody becomes listed that falls within the MS4 boundary, the SWMPP will be updated as needed.

Responsible Department: Building Inspection

12.3 Monitoring Parameters and Frequency

Grab samples will be analyzed for the following parameters by quarterly:

a. E. Coli
b. Total Nitrogen (TN) (mg/l)
c. Total Phosphorus (mg/l)
d. Total Suspended Solids (TSS) (mg/l)
e. Temperature
f. pH/ORP
g. Turbidity (NTU)
h. Conductivity
i. Dissolved Oxygen (mg/l)
j. Ammonia Nitrogen (NH_3-N) (mg/l)
k. Biochemical Oxygen Demand (BOD) (mg/l)
l. Chemical Oxygen Demand (COD) (mg/l)
m. Hardness as $CaCO_3$ (mg/l)
n. Nitrate plus Nitrite Nitrogen (NO_3+NO_2-N) (mg/l)
o. Oil and Grease (mg/l)
p. Total Dissolved Solids (TDS) (mg/l)
q. Total Kjeldahl Nitrogen (TKN) (mg/l)

Responsible Department: Building Inspection

12.4 Sample Types, Collection and Analysis

The City will collect grab samples and run the sample analysis based on the permit requirements.

Responsible Department: Building Inspection

13. OTHER REQUIREMENTS

13.1 SWMPP Plan Review and Modification

This plan will be reviewed annually and updated as necessary.

Responsible Department: Building Inspection

13.2 Annual Report

The annual report will be complied by the City and compliance with the permit requirements (Part IV).

All annual reports shall be submitted to the Department electronically in a prescribed manner acceptable to the Department on or before January 31 of the following year.

Responsible Department: Building Inspection

APPENDICES

APPENDIX A: City of Bessemer MS4 NPDES Permit ALS000022

APPENDIX B: City of Bessemer MS4 Jurisdictional Boundary Map

APPENDIX C: City of Bessemer Structural Control Inspection Form

APPENDIX D: Map of Major Outfalls, Structural Controls and Waters of State

APPENDIX E: City of Bessemer Integrated Storm Water Pollution Prevention Program

APPENDIX F: City of Bessemer Report Spill and Illicit Discharge Investigation Form

APPENDIX G: ADEM Notification by City Standard Operating Procedure (SOP)

APPENDIX H: City of Bessemer Construction Storm Water Inspection and Enforcement SOP Manual

APPENDIX I: City of Bessemer Construction Site Inspection Report

APPENDIX J: City of Bessemer Post-Construction BMP Inspection Report

APPENDIX K: Map of Municipal Property Locations & Annual Inspection Checklist

APPENDIX L: City of Bessemer Public Works Municipal Good Housekeeping Program

APPENDIX A:
City of Bessemer
MS4 NPDES Permit ALS000022

LANCE R. LEFLEUR
DIRECTOR

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GOVERNOR

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December 12, 2022

Certified Mail # 9489 0090 0027 6298 9320 43

Honorable Kenneth Gulley
Mayor, City of Bessemer
1700 3rd Avenue North
Bessemer, Alabama 35020

RE: Municipal Separate Storm Sewer System (MS4) Individual Phase I Permit
NPDES Number ALS000022
City of Bessemer MS4
Jefferson County (073)

Dear Mayor Gulley:

The Alabama Department of Environmental Management has made a final determination to issue NPDES Permit No. ALS000022 to the City of Bessemer for discharges from its MS4. The NPDES Permit Number ALS000022 will be effective December 12, 2022 and expire on December 11, 2027.

The Department notified the public of its tentative determination to issue NPDES Permit No. ALS000022 on November 7, 2022. Interested persons were provided the opportunity to submit comments on the Departments tentative decision through December 8, 2022. In accordance with ADEM Admin. Code r. 335-6-6-.21(7), no comments were received during the public comment period.

The City of Bessemer is responsible for compliance with all provisions of the permit including, but not limited to, the performance of any monitoring, the submittal of any reports, and the preparation and implementation of any plans required by the permit.

If you have questions concerning this permit, please contact Cammie Ashmore either by email at cammie.ashmore@adem.alabama.gov or by phone at (334) 271-7795.

Sincerely,

Devin M. Jenkins, Chief
UIC/MS4 Section
Stormwater Management Branch
Water Division

DMJ/cga
File: FPER/49616
Enclosures: Permit

cc: Mike Mitchell, Environmental Protection Agency (via email)
Freddie Freeman, City of Bessemer (via email)

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

ADEM
Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE:	CITY OF BESSEMER
AREA OF COVERAGE:	CORPORATE BOUNDARIES OF THE CITY OF BESSEMER
PERMIT NUMBER:	ALS000022
RECEIVING WATERS:	WATERBODIES WITHIN THE CORPORATE BOUNDARIES OF CITY OF BESSEMER

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1378 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, ***Code of Alabama 1975****, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended,* ***Code of Alabama 1975****, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.*

ISSUANCE DATE:	DECEMBER 12, 2022
EFFECTIVE DATE:	DECEMBER 12, 2022
EXPIRATION DATE:	DECEMBER 11, 2027

Alabama Department of Environmental Management

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PART I Applicability

A. Permit Area

This permit applies to the corporate boundaries of the City of Bessemer that are regulated by the Permittee and discharge to the Permittee's Municipal Separate Storm Sewer System (MS4).

B. Authorized Discharges

1. This permit authorizes all existing or new storm water point source discharges to waters of the State of Alabama from those portions of the MS4s owned or operated by the Permittee. Discharge of pollutants shall be reduced to the Maximum Extent Practicable (MEP), shall not cause, nor contribute to, violations of Alabama Water Quality Standards, and shall be in compliance with Total Maximum Daily Loads (TMDLs) where applicable.

2. This permit authorizes the following non-storm water discharges provided that they do not cause or contribute to a violation of water quality standards and provided that they have been determined not to be a substantial contributor of pollutants by the Permittee or the Department:
    a. Water line flushing
    b. Landscape irrigation (not consisting of treated, or untreated wastewater unless authorized by the Department)
    c. Diverted stream flows
    d. Uncontaminated ground water infiltration
    e. Uncontaminated pumped groundwater
    f. Discharges from potable water sources
    g. Foundation and footing drains
    h. Air conditioning drains
    i. Irrigation water (not consisting of treated, or untreated, wastewater unless authorized by the Department)
    j. Rising ground water
    k. Springs
    l. Water from crawl space pumps
    m. Lawn watering runoff
    n. Individual residential car washing, to include charitable carwashes
    o. Residual street wash water
    p. Discharge or flows from firefighting activities (including fire hydrant flushing)
    q. Flows from riparian habitats and wetlands
    r. Dechlorinated swimming pool discharges
    s. Discharges authorized and in compliance with a separate NPDES permit

C. Prohibited Discharges

The following discharges are not authorized by this permit:

1. Discharges that are mixed with sources of non-storm water, unless such non-storm water discharges are in compliance with a separate NPDES permit or where those dischargers have been determined not to represent significant sources of pollution, as identified by, and in compliance with, Part I.B.2;

2. Discharges of materials resulting from a spill, except emergency discharges required to prevent imminent threat to human health or to prevent severe property damage, provided reasonable and prudent measures have been taken to minimize the impact of the discharges; and

3. The discharge of sanitary wastewater through cross connections or other illicit discharges through the MS4 is prohibited.

PART II Storm Water Pollution Prevention Management Programs

A. Storm Water Management Program (SWMP)

1. The Permittee is required to develop, revise, implement, maintain and enforce a storm water management program (SWMP) which shall include controls necessary to reduce the discharge of pollutants from its MS4 consistent with Section 402(p)(3)(B) of the Clean Water Act and 40 CFR Part 122.26. These requirements shall be met by the development and implementation of a Storm Water Management Program Plan (SWMPP) which addresses the Best Management Practices (BMPs), control techniques and systems, design and engineering methods, public participation and education, monitoring, and other appropriate provisions designed to reduce the discharge of pollutants from the MS4 to the MEP, protect water quality, and satisfy appropriate water quality provisions of the Clean Water Act.

2. The Permittee shall provide and maintain adequate finance, staff, equipment, and support capabilities necessary to implement the SWMPP and comply with the requirements of this permit.

3. The SWMPP must address the minimum program elements referenced in Part II.B. to include the following:

    a. A map of the Permittee's MS4 corporate boundaries;
    b. The BMPs that will be implemented for each control measure. Low impact development (LID)/green infrastructure (GI) shall be considered and actively encouraged where feasible. Information on LID/GI is available on the following websites: http://www.adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf and http://epa.gov/nps/urban-runoff-low-impact-development;
    c. The measureable goals for each of the program elements outlined in Part II.B.;
    d. The proposed schedule – including interim milestones, as appropriate, inspections, and the frequency of actions needed to fully implement each program element; and
    e. The person and/or persons responsible for implementing or coordinating the BMPs for each separate program element.

4. Unless otherwise specified in this permit, the Permittee shall be in compliance with the conditions of this permit by the effective date.

B. Storm Water Program Elements and Requirements

1. **Storm Water Collection System Operations**

    a. Structural Controls

        i. For Permittee owned/leased/maintained structural controls, the structural controls shall be operated in a manner to reduce the discharge of pollutants, to the MEP;

        ii. For Permittee owned/leased/maintained structural controls, the Permittee shall include in the SWMPP and implement the following:

            1. A map of the structural controls and should be updated as needed;

2. Inspection of existing and newly constructed structural controls on a semi-annual basis, at a minimum;
3. Implementation of standard operating procedures (SOPs) or inspection checklist for structural control inspections and maintenance procedures;
4. Stabilization and re-vegetation of eroded areas as needed; and
5. Removal of floatables, litter, sediment and debris, in structural controls, as needed.

iii. The Permittee shall maintain an inventory of structural controls, and maintain a tracking system for inspections and maintenance of the control structures; and

iv. The Permittee shall report each year in the Annual Report the following structural control information:

1. The number of inspections performed on structural controls, to include follow-up inspections. The inspection documentation (i.e., checklist) shall be made available upon request;
2. A summarization of the maintenance activities performed on structural controls;
3. The estimated amount of floatable, litter, sediment and debris that was removed, if applicable;
4. Copies of any contractual agreements for maintenance activities if not performed by the Permittee, if requested by the Department. The contractual agreement should specify maintenance activities performed and schedule; and
5. Updated structural controls map of Permittee-owned/leased/maintained structural controls added during the preceding year with geographic coordinates.

2. **Public Education and Public Involvement on Storm Water Impacts**

a. The Permittee must further develop, revise, and implement a public education and outreach program to inform the community about the impacts from storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff to the MEP. The Permittee shall continuously implement this program in the areas served by the MS4. Each year, the Permittee shall implement a minimum of four (4) BMPs, which includes two (2) BMPs emphasizing public education and two (2) BMPs emphasizing public involvement.

b. The Permittee shall include within the SWMPP a list of potential BMPs that the Permittee may implement regarding public education and public involvement. The SWMPP must address the following, at a minimum:

1. Annually, seek and consider public input in the development, revision and implementation of the SWMPP;
2. Identify targeted pollutant sources the Permittee's public education program is intended to address;
3. Specifically address the reduction and removal of litter, floatables and debris from entering the MS4, that may include, but is not limited to the following:
    a. Labeling storm drain inlets and catch basins with "no dumping" message; and
    b. Posting signs referencing local codes that prohibit littering and illegal dumping at designated public access points to open channels, creeks, and other relevant waterbodies
4. Inform and involve individuals and households about the steps they can take to reduce storm water pollution; and

5. Inform individuals and groups on how to become involved in the storm water program (with activities such as local stream and lake restoration activities). The target audiences and subject areas for the education program that are likely to have significant storm water impacts should include, but is not limited to, the following:

    i. General Public
        a. General impacts litter has on water bodies, how trash is delivered to streams via the MS4 and ways to reduce and remove the litter;
        b. General impacts of storm water flows into surface water from impervious surface;
        c. Source control BMPs in areas of pet waste, vehicle maintenance, landscaping and rain water reuse; and
        d. Impacts of illicit discharges and how to report them.
    ii. General Public and Businesses to include Home-Based and Mobile Businesses
        a. BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials;
        b. Impacts of illicit discharges and how to report them.
    iii. Homeowners, Landscapers, Property Managers and City Personnel
        a. Landscape or yard care techniques that protect water quality;
        b. BMPs for use and storage of pesticides, herbicides and fertilizers;
        c. BMPs for carpet cleaning and auto repair and maintenance;
        d. Storm water pond maintenance; and
        e. General impacts of stormwater flows into surface waters from impervious surfaces.
    iv. Engineers, City Personnel, Review Staff, Land Use Planners, Contractors and Developers
        a. Impacts of increased storm water flows into receiving water bodies;
        b. Technical standards for construction site sediment and erosion control;
        c. Storm water treatment and flow control BMPs; and
        d. Run-off reduction techniques and LID/GI practices that may include, but not limited to: site design, pervious pavement, alternative parking lot design, retention of forests and mature trees to assist in storm water treatment and flow control BMPs, and maintenance required for LID/GI.

6. Evaluate the effectiveness of the public education and public involvement program. If the Permittee determines any portion of the program (including BMPs) to be ineffective, then the Permittee shall update the SWMPP to address the ineffectiveness; and
7. Organize and participate in activities that target the removal of litter, floatables, and debris from area waterways. The minimum number and the waterways these activities will target will be addressed in the SWMPP.

c. The Permittee shall report each year in the Annual Report the following information:

    1) A description of the activities used to involve groups and/or individuals in the development, revision, and implementation of the SWMPP;
    2) A description of the individuals and groups targeted and how many groups and/or individuals participated. If exact participation is not readily quantifiable, an estimation will be sufficient;
    3) A description of the BMPs implemented along with the quantity utilized (i.e., number of printed brochures, and the number distributed of newspaper copies,

number of workshops hosted/attended, and the number of public service announcements, etc.);
4) Results of the evaluation as required in Part II.B.2.b.6.; and
5) A list of the activities required in Part II.B.2.b.7 and the estimated amount of litter, floatables and debris removed during each activity.

d. The current SWMPP and latest Annual Report should be posted on the Permittee's website, if available, and within 30 days of submittal of the SWMPP to the Department.

3. **Illicit Discharge Detection and Elimination (IDDE)**

a. The Permittee shall implement an ongoing program to detect and eliminate illicit discharges and improper disposal into the MS4, to the MEP. The program shall include, at a minimum, the following:

1) The development and annual update of an MS4 map. An initial map shall be provided in the SWMPP with updates provided each year in the Annual Report. The map shall include, at a minimum, the following:

a. The latitude/longitude of all known major outfalls;
b. The names of all waters of the State within the MS4 area that receive discharges from these major outfalls; and
c. Structural BMPs owned/leased/maintained by the Permittee, if applicable.

2) To the extent allowable under State law, an ordinance or other regulatory mechanism that prohibits non-storm water discharges to the MS4. The ordinance or other regulatory mechanism shall:

a. Include escalating enforcement procedures and actions;
b. Require the removal of illicit discharges as expeditiously as practicable and the immediate cessation of improper disposal practices upon identification of responsible parties. Where the removal of illicit discharge within ten (10) working days is not possible, the ordinance shall require a schedule for removal of the discharge. In the interim, the ordinance shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4; and
c. Provide for the annual review of the IDDE ordinance and update as necessary.

3) A dry weather screening program designed to detect and address non-storm water discharges to the MS4. This program must address, at a minimum, dry weather screening of fifteen (15) percent of the major outfalls at least once per year with all (100 percent) major outfalls screened at least once per five (5) years. Priority areas, as described by the Permittee in the SWMPP, will be dry weather screened on a more frequent schedule as outlined in the SWMPP. When determining priority areas consider criteria such as, but not limited to, areas with older infrastructure, mixed-use areas, areas with a history of past illicit discharges, areas with on-site sewage disposal system, or areas upstream of sensitive waterbodies. If any flow, from an unidentified source, is observed during the dry weather screening of a major outfall, then the Permittee shall follow the sampling protocol as outlined in the SWMPP and developed in accordance with EPA's guidance manual, *Illicit Discharge Detection and Elimination, A Guidance Manual for*

Program Development and Technical Assessments, Center for Watershed Protection, October, 2004.

4) Procedures for tracing the source of a suspect illicit discharge as outlined in the SWMPP. At a minimum, these procedures will be followed to investigate portions of the MS4 that, based on the results of the field screening or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.

5) Procedures for eliminating an illicit discharge as outlined in the SWMPP;

6) Procedures to notify ADEM of a suspect illicit discharge entering the Permittee's MS4 from an adjacent MS4 as outlined in the SWMPP;

7) A mechanism for the public to report illicit discharges discovered within the Permittee's MS4 and procedures for appropriate investigation of such reports;

8) A training program for appropriate personnel on identification, reporting, and corrective action of illicit discharges. The SWMPP must address, at a minimum, the frequency of the training and identify the appropriate personnel by title to be trained during the permit cycle; and

9) The Permittee shall post on its website a copy of the ordinance or other regulatory mechanism or provide a hyperlink to the location of the ordinance or regulatory mechanism as required by Part II.B.3.a.2 of this Permit. The SWMPP shall also include a copy of the ordinance or other regulatory mechanism or provide a website location of the ordinance or regulatory mechanism.

b. The Permittee shall report each year in the Annual Report the following information:

1) Total number of major outfalls within the MS4, the number and location of major outfalls observed during the dry weather screening of the current year to include any follow-up screenings and the number of major outfalls observed in the priority area(s) identified by the Permittee. A list of the outfalls to be dry weather screened during the upcoming year shall also be included;
2) Updated MS4 map(s) unless there are no changes to the map that was previously submitted. When there are no changes to the map, the Annual Report must state this;
3) Copies of the IDDE ordinance or other regulatory mechanism or provide a hyperlink for the ordinance or regulatory mechanism location on the Permittee's website. When there are no changes to the ordinance or regulatory mechanism the Annual Report must state this;
4) Date(s) of the training conducted for appropriate personnel; and
5) The number of illicit discharges investigated, any associated sampling results, and the summary of corrective actions taken to include dates and timeframe of response.

4. **Construction Site Storm Water Runoff Control**

a. The Permittee shall further develop/revise, implement and enforce an ongoing program to reduce, to the maximum extent practicable, the pollutants in any storm water runoff to the MS4 from qualifying construction sites. The program shall include the following, at a minimum:

1) Procedures to require all applicable construction sites to obtain coverage under ADEM NPDES General Permit ALR10000 or other applicable NPDES permits;

2) To the extent allowed under State law, an ordinance or other regulatory mechanism to require effective erosion and sediment controls on qualifying construction sites, as well as sanctions to ensure compliance, and to provide all other authorities needed to implement the requirements of Part II.B.5. of this permit. The ordinance or regulatory mechanism shall be posted on the Permittee's website, if applicable;
3) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
4) Procedures for construction site plan review and approval to ensure the selection of effective erosion and sediment controls are consistent with the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas published by the Alabama Soil and Water Conservation Committee (hereinafter the "Alabama Handbook") and are appropriate for site conditions. Site plan review may be prioritized based on criteria outlined in the Permittee's SWMPP and may include, but is not limited to, size and location within priority watersheds. The plan review process will also consider potential water quality impacts;
5) A mechanism for the public to report complaints regarding pollution discharges from construction sites;
6) Inspection of sites to verify use and proper maintenance of appropriate BMPs. Inspections of construction sites shall be performed in accordance with the frequency specified in the table below:

Site	Inspection Frequency
Priority Constructions Sites (Defined in Part V.AA.)	At a minimum, inspections must occur monthly
Other sites determined by the Permittee or Permitting Authority to be a significant threat to water quality*	
All qualifying construction sites not meeting the criteria specified above.	At a minimum, inspections must occur every two (2) months
*In evaluating the threat to water quality, the following factors must be considered, if applicable: soil erosion potential; site slope; project size and type; sensitivity of receiving waterbodies including 303(d) or TMDL status; proximity to receiving waterbodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and other factors deemed relevant to the MS4.	

7) Procedure to notify ADEM of construction sites that do not have an NPDES permit discovered during construction site inspections. The notification must provide, at a minimum, the specific location of the construction site, the name and contact information for the owner or operator, and a summary of the construction site deficiencies.
8) Inventory (or list) of the current, active qualified construction sites and updated as new, qualified construction sites are commenced and completed. The inventory must contain relevant contact information of the owner for each site (i.e., tracking number, name, address, phone number, etc.), the size of the construction site including the amount of disturbed area, whether the site has submitted for permit coverage under the Alabama Construction General Permit, whether the qualified construction site is in a priority watershed, and the date the permittee approved the construction site plan. The Permittee must make this inventory (or list) available to the Department upon request.

9) Training for the Permittee's construction site inspection staff in the identification of appropriate construction best management practices (Example: QCI training in accordance with ADEM Admin Code. r. 335-6-12 or the Alabama Construction Site General Permit). Applicable MS4 site inspection staff shall be trained once per year;
10) Utilization of a construction site inspection checklist (paper and/or electronic);
11) Implementation of an Enforcement Response Plan (ERP), which sets out the Permittee's potential responses to violations through progressively stricter actions as needed to achieve compliance. The ERP must include a system for tracking formal actions and ADEM referrals. Types of enforcement actions may include, but not limited to the following:

    a. Verbal Warnings—Verbal warnings are primarily consultative in nature and must specify the nature of the violation and required corrective action;
    b. Written Notices—Written Notices must stipulate the nature of the violation and the required corrective action, with deadlines for taking such action; and
    c. Escalated Enforcement Measures—Citations, stop work orders, withholding plan approvals/authorizations, monetary penalties, or additional measures to address persistent non-compliance, repeat or escalating violations or incidents of major environmental harm.

12) A program to make available a list of education and training materials and resources to construction site operators in the appropriate application and maintenance of erosion and sediment controls; and
13) The Permittee shall post on its website the ordinance or other regulatory mechanism required by Part II.B.4.a.2.

b. The Permittee shall include within the SWMPP the following information:

    1) A copy of the ordinance or regulatory mechanism or a hyperlink to the location of the ordinance or regulatory mechanism on the Permittee's website as required by Part II.B.4.a.2.;
    2) Procedures for site plan reviews required by Part II.B.4.a.4;
    3) A construction site inspection schedule meeting the requirements of Part II.B.4.a.6;
    4) Training program, to include frequency, of MS4 site inspection staff as required by Part II.B.4.a.9;
    5) A copy of the construction site inspection checklist and/or screenshot of electronic checklist as required by Part II.B.4.a.10;
    6) The ERP as required by Part II.B.4.a.11;
    7) Procedures and schedule for making available a list of education and training materials and resources to construction site operators in the appropriate application and maintenance of erosion and sediment controls required by Part II.B.4.a.12.

c. The Permittee shall report each year in the Annual Report the following information:

    1) A description of any completed or planned revision to the ordinance or regulatory mechanism required by Part II.B.4.a.2. and include the most recent copy or a hyperlink to the most recent copy of the ordinance or regulatory mechanism;
    2) List of all active qualifying construction sites within the MS4 to include the inspections as required by Part II.B.4.a.6; and
    3) A summary of the following:

a. Number of construction site inspections;
b. Number of formal enforcement actions and description of violations;
c. Number of construction site runoff complaints received; and
d. Number of new staff trained and follow-up training provided to existing staff.

d. The Permittee shall maintain the following information and make it available upon request:

1) Documentation of all inspections conducted of qualifying construction sites. The inspection documentation shall include, at a minimum, the following:

a. Facility type;
b. Inspection date;
c. Name and signature of inspector;
d. Location of construction project;
e. Owner/operator information (name, address, phone number, fax, and email);
f. Description of the condition of the storm water BMPs that may include, but not limited to, the quality of: vegetation and soils, inlet and outlet channels and structures, embankments, slopes, and safety benches; spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures; and
g. Photographic documentation of any issues and/or concerns.

2) Documentation of enforcement actions taken at construction sites to include, at a minimum, the following:

a. Name of owner/operator;
b. Location of qualifying construction project;
c. Description of violation;
d. Required schedule for returning to compliance;
e. Description of enforcement response used, including escalated responses if repeat violations occur;
f. Accompanying documentation of enforcement responses (e.g., notices of non-compliance, notices of violations, etc.); and
g. Any referrals to different Departments or Agencies.

3) Inventory of all qualified construction sites to include, at a minimum, the following:
a. Name of owner/operator;
b. Owner/operator contact information (address, phone number, fax, and/or email); and
c. Location of the qualifying construction site.

4) Records of public complaints including:

a. Date, time and description of the complaint;
b. Location of subject construction sites; and
c. Identification of any actions taken (i.e., inspections, enforcement, corrections). Identifying information must be sufficient to cross-reference inspection and enforcement records.

5) Educational and Training Documentation for Construction Site Operators

a. List of education and training materials and resources

5. **Post-Construction Stormwater Management in Qualifying New Development and Re-Development**

The Permittee must further develop/revise and implement a program to address the discharge of pollutants in post-construction storm water runoff to the MS4 from new development and re-development. Post-Construction Stormwater Management refers to the activities that take place after construction occurs, and includes structural and non-structural controls including LID and GI practices to obtain permanent stormwater management over the life of the property's use. These post construction controls should be considered during the initial site development planning phase.

a. The Permittee shall develop/revise and implement project review and enforcement procedures for qualifying new development and redevelopment projects, to the MEP. These programs shall ensure that controls are in place to prevent or minimize water quality impacts. Specifically, the Permittee shall:

1) Require landowners and developers to, the MEP, implement systems of appropriate structural and/or non-structural BMPs designed to reduce the discharge of pollutants, which may include, but is not limited to, the following:

a. Minimize the amount of impervious surfaces;
b. Preserve and protect ecologically sensitive areas that provide water quality benefits;
c. Provide vegetated buffers along waterways, and reduce discharges to surface waters from impervious surfaces such as parking lots;
d. Implement policies to protect trees, native soils and other vegetation; and
e. Minimize topsoil stripping and compacted soils where feasible.

2) Require landowners and developers to develop and maintain Best Management Practices to ensure, to the MEP, that post-construction runoff mimics pre-construction hydrology of the site. A 1.1 inch rainfall over a 24-hour period preceded by a 72-hour antecedent dry period shall be the basis for the design and implementation of post construction BMPs;
3) Encourage landowners and developers to incorporate the use of LID/GI where feasible. Information on LID/GI is available on the following websites: http://www.adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf and http://epa.gov/nps/urban-runoff-low-impact-development.
The Permittee shall include a narrative description in the SWMPP as to the means taken to implement the requirement to encourage landowners and developers to incorporate the use of LID/GI;
4) To the extent allowed under State law, adopt or amend an ordinance or other regulatory mechanism to ensure the applicability and enforceability of post-construction BMPs at all new qualifying development and redevelopment projects. The ordinance or regulatory mechanism shall be posted on the Permittee's website, if applicable;
5) Require the submittal of a post-construction BMP plan, for review, as outlined in the SWMPP. The post-construction BMP plan review process may be integrated with the construction plan review process under Section II.B.4.a.4;
6) Require the submittal of an 'as built' certification of the post-construction BMPs within 120 days of completion of project;

7) Perform and/or require the performance of, at a minimum, an annual post-construction inspection to ensure that design standards are being met and require corrective actions to poorly functioning or inadequately maintained post-construction BMPs. The Permittee shall document its post-construction inspection. Such documentation shall include, at a minimum:

    a. Facility type
    b. Inspection date
    c. Name and signature of inspector
    d. Site location
    e. Owner information (name, address, phone number, fax, and email)
    f. Description of the storm water BMP condition that may include the quality of: vegetation and soils, inlet and outlet channels and structures, embankments, slopes, and safety benches; spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures;
    g. Photographic documentation of all critical storm water BMP components;
    h. Specific maintenance items or violations that need to be corrected by the owner/operator of the storm water control or BMP; and
    i. Maintenance agreements for long-term BMP operations and maintenance.

8) The Permittee shall maintain or require the developer/owner/operator to keep records of post-construction inspections, maintenance activities and make them available to the Department upon request;
9) Require and/or perform adequate long-term operation and maintenance of post-construction BMPs, including one or more of the following, as applicable:

    a. The developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; and/or
    b. Written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; and/or
    c. Written conditions in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control management practices; and/or
    d. Any other legally enforceable agreement that assigns permanent responsibility for maintenance of structural or treatment control management practices.

b. The Permittee shall include within the SWMPP the following information:

    1) A copy or link of the ordinance or other regulatory mechanism or hyperlink to the ordinance or other regulatory mechanism to the location on the Permittee's website as Part II.B.5.a.4.;
    2) Procedures to develop, implement and enforce systems of appropriate structural and/or non-structural BMPs;
    3) Procedures to develop, implement and enforce performance standards;
    4) Narrative description as to the means taken to implement the requirement to encourage LID/GI practices;
    5) Procedures to ensure compliance with the ordinance or regulatory mechanism, including the sanctions and enforcement mechanisms the Permittee will use to ensure compliance. If an ordinance or regulatory

mechanism needs to be developed, then the Permittee must provide a timeline for the development of the ordinance and/or regulatory mechanism;
6) Procedures for post-construction inspections, to include tracking and enforcement;
7) Procedures to ensure adequate long-term operation and maintenance of BMPs; and,
8) Development of an inventory of post-construction structural controls. This inventory shall be updated annually, as needed.

c. The Permittee shall report each year in the Annual Report the following information:

1) Provide a hyperlink for the ordinance or regulatory mechanism location on the Permittee's website;
2) A list of the post-construction structural controls installed and inspected during the permit year. The list shall include which post-construction structural controls installed are considered LID/GI, if applicable;
3) Updated inventory of post-construction structural controls including those owned by the Permittee;
4) Number of inspections performed on post-construction structural controls; and,
5) Summary of enforcement actions, if applicable.

6. **Spill Prevention and Response**

a. The Permittee shall further develop/revise and implement a program to prevent, contain, and respond to spills that may discharge into the MS4. The Permittee must, at a minimum:

1) Investigate, respond, and conduct response actions or coordinate with other agencies that may provide response actions as outlined in the SWMPP;
2) Track spills, response, and cleanup activities for all reportable spills that may discharge to the MS4;
3) Use GIS or acceptable mapping scheme to identify spill locations, locations for inspections, and chronic problem areas;
4) Implement a spill prevention/spill response plan;
5) Provide training, annually at a minimum, of appropriate personnel in spill prevention and response procedures and techniques to mitigate pollutant discharges from spills to the MS4;
6) Establish procedures to ensure that spills are able to be promptly reported to appropriate authority; and
7) During the permit cycle, review any existing City Hazardous Material Contingency Plan, if applicable, and supplement wherever needed to address discharges to the MS4.

b. The Permittee shall include within the SWMPP the following information:

1) List of agencies that the Permittee may coordinate response actions with regarding spills as required by Part II.B.6.a.1.;
2) The spill prevention/spill response plan as required by Part II.B.6.a.4.; and
3) Procedures to provide annual training, at a minimum, of personnel in spill prevention and response.

c. The Permittee shall report each year in the Annual Report the following information:

1) Summary of spills occurring during the reporting year, to include the following, at a minimum:
    a. Location;
    b. Spill Substance (i.e., fuel, oil, etc.);
    c. Photographs (spill and after clean-up) to be made available upon request; and
    d. Incident dates and time to resolution, including any enforcement actions taken and their result.
2) Documentation of employee training as required by Part II.B.6.a.5
    a. Description of the training curriculum or materials used; and
    b. Dated records of attendance.

7. **Pollution Prevention/Good Housekeeping for Municipal Operations**

a. The Permittee shall further develop/revise, implement, and maintain a program that will prevent or reduce the discharge of pollutants in storm water run-off from municipal operations to the MEP. The program elements shall include, at a minimum, the following:

1) An inventory (to include name and location) of all municipal facilities. Evaluate and determine which municipal facilities have the potential to discharge pollutants via storm water runoff;
2) Develop and implement a short and long term strategy and program for the removal of trash from the waterways and tributaries in the permitted area in such a manner to quantify the removal of trash per year, which shall be included in the Annual Report. These strategies shall be included in the Permittee's SWMPP and shall be updated as necessary. This program shall address the following, at a minimum:

    a. Direct removal of trash from waterbodies;
    b. Direct removal of trash from the MS4;
    c. Direct removal of trash prior to entry to the MS4;
    d. Prevention through disposal alternatives; and
    e. Prevention through waste reduction practices, additional enforcement, and/or initiatives.

3) Require the following measures to be implemented in the public right of way for any event or wherever it is anticipated that substantial quantities of trash or litter may generated:

    a. Arrangement for temporary protection of preventative measures to the catch basins, where feasible, and
    b. Provide proper disposal of trash receptacles, cleanup of catch basins, as needed, and grounds of the event area within one business day subsequent to the event.

4) Ensure that trash receptacles, or similar trash capturing devices are provided and maintained in areas identified as high trash generated areas;
5) A Standard Operating Procedures (SOP) detailing good housekeeping practices to be employed at appropriate municipal facilities (those that have the potential to discharge pollutants via storm water runoff) and during municipal operations that may include, but not limited to, the following:

    a. Equipment washing;
    b. Street sweeping;

c. Maintenance of municipal roads owned, operated, or under the responsibility of the Permittee;
d. Storage and disposal of chemicals and waste materials;
e. Vegetation control, cutting, removal, and disposal of the cuttings;
f. Vehicle fleets/equipment maintenance and repair;
g. External Building maintenance; and
h. Materials storage facilities and storage yards.

6) A program for inspecting municipal facilities, at a minimum of annually, to include municipal maintenance shops and equipment yards, for good housekeeping practices, including BMPs. The program shall include checklists and procedures for correcting noted deficiencies;
7) A training program for municipal facility staff in good housekeeping practices as outlined in the SOP developed pursuant to Part II.B.7.a.5.. The training shall be provided to municipal facility staff at a minimum of annually; and
8) The Permittee shall assess the water quality impacts for those flood management projects owned, operated, or the responsibility of the Permittee. The feasibility of retro-fitting existing structural control devised to provide additional pollutant removal from the storm water shall be evaluated.

b. The Permittee shall include within the SWMPP the following information:

1) The inventory of municipal facilities required by Part II.B.7.a.1;
2) Evaluate and include discussion on effectiveness of strategy (or strategies) as required by Part II.B.7.a.2.
3) A list of SOPs of good housekeeping practices required by Part II.B.7.a.5;
4) An inspection plan and schedule (frequency), including checklists and any other materials needed to comply with Part II.B.7.a.6; and
5) A description of the training program and training schedule including frequency as required by Part II.B.7.a.7.

c. The Permittee shall report each year in the Annual Report the following information:

1) Any updates to the municipal facility inventory;
2) An estimated amount of trash/floatable material collected from the MS4 as required by Part II.B.7.a.2-4;
3) Any updates to the inspection plan or schedule;
4) Any updates to the SOP of good housekeeping practices;
5) Summary of inspection reports of municipal facilities; and
6) Results of the evaluation of the effectiveness of the Pollution Prevention/Good Housekeeping program.

d. The Permittee shall maintain the following information and make it available upon request:

1) Records of inspections and corrective actions, if any; and
2) Training records including the dates of each training activities and names of personnel in attendance.

8. **Application of Pesticide, Herbicide, and Fertilizers (PHFs)**

a. For the *Application of Pesticide, Herbicide, and Fertilizers* (PHFs), the Permittee shall implement controls to reduce, to the MEP, the discharge of pollutants related to the storage and application of PHFs applied by employees or contractors, to public rights of way,

parks, and other public property. The Permittee shall implement programs to encourage the reduction of the discharge of pollutants related to application and distribution of PHFs. For those controls implemented, the Permittee will obtain coverage and maintain compliance with ADEM NPDES Pesticide General Permit ALG870000, if applicable, or other applicable NPDES permits. In addition, the Permittee shall address priorities to include the following, at a minimum:

1) Identify all areas known to receive high applications of PHFs, develop a program to detect improper usage, and prioritize problem areas;
2) Require evidence of proper certification and licensing for all applicators contracted to apply pesticides or herbicides on municipal property; require that applicators contracted to apply fertilizer are qualified in utilizing proper nutrient management practices;
3) Maintain an inventory of on-hand PHFs with information about the formulations of various products, including how to recognize the chemical constituents from the label, their respective uses, directions and precautions for applicators that explain if products should be diluted, mixed or only used alone, and, proper storage of products;
4) Equipment use and maintenance;
5) Training in safe use, storage and disposal of PHFs;
6) Annual inspection and monitoring of facilities where PHFs are stored; and
7) Record keeping.

b. The Permittee shall report each year in the Annual Report the following information:
   1) The areas within the MS4 jurisdiction that received high application of PHFs;
   2) A list of personnel certified and trained on proper PHF application;
   3) An inventory list of on-hand PHFs; and
   4) Inspections of the facilities where PHFs are stored.

9. **Oils, Toxics, and Household Hazardous Waste Control**

a. The Permittee shall prohibit to the MEP the discharge or disposal of used motor vehicle fluids and household hazardous wastes into the MS4. Specific activities to be completed under this item are:

   1) Make available material educating the public about used oil facility locations, hotline numbers, and alternatives to toxic materials;
   2) Annual, at a minimum, inspections of municipal maintenance shops and equipment yards;
   3) Advertise the location of used oil collection facilities; and
   4) Provide employee training, at a minimum of annually, on spill prevention at all municipal facilities where oils or toxic materials are used.

b. The Permittee shall include within the SWMPP the following information:

   1) Procedures to further develop, revise, implement, and enforce a program for oils, toxics, and household hazardous waste control to include educational information and employee training.

c. The Permittee shall report each year in the Annual Report the following information:

1) Quantities of Household Hazardous Waste and used oil collected; and
2) Inspection reports of municipal maintenance shops and equipment yards; and
3) Oils, Toxics, and Household Hazardous Waste Control training materials
    a. Dated attendance sheet; and
    b. Titles of presentations.

10. **Industrial Storm Water Runoff**

a. The Permittee shall implement a program to inspect, monitor and control pollutants in storm water runoff to the MS4 from municipal waste landfills, hazardous waste treatment, storage, disposal and recovery facilities, and industrial facilities and high risk commercial facilities. Facilities to be addressed under this program include: facilities that have reported under the requirements of the Emergency Planning and Community Right to Know Act (EPCRA) Title III, Section 313; and any other industrial or commercial discharge that the Permittee determines is contributing substantial pollutants loading to the MS4 ("high risk facilities"). The program must provide for, at a minimum:

    1) Annual inspections, at a minimum, of municipal waste landfills, hazardous waste treatment, storage, disposal (TSD) and recovery facilities;
    2) Annual inspections, at a minimum, of industrial facilities and high-risk commercial facilities that do not have an NPDES permit issued by the Department as outlined in the SWMPP, and
    3) Data collected by a NPDES permitted facility to satisfy the monitoring requirements of an NPDES, State, land application or local pretreatment discharge permit may be used to satisfy Part II.B.10.a of the Permit. The Permittee may require the facility to conduct self-monitoring to satisfy this requirement, if necessary.

b. The Permittee shall include in the SWMPP a list of all municipal waste landfills, hazardous waste treatment, storage, disposal and recovery facilities, high risk commercial facilities, and industrial facilities, both NPDES permitted and non-NPDES permitted, within the MS4.

c. The Permittee shall include in the Annual Report a list of facilities inspected for the year and any corrective actions taken including enforcement, if applicable.

C. Legal Authority

To the extent allowed under State law, the Permittee must annually review and revise, as necessary, its relevant ordinances or other regulatory mechanisms, or adopt any new ordinances that provide it with adequate legal authority to control pollutant discharges into and from its MS4, and to implement and enforce its SWMPP. To be considered adequate, this legal authority must, at a minimum, authorize the Permittee to:

1. Prohibit non-storm water discharges unless such storm water discharges are in compliance with a separate NPDES permit, or determined by the Department not to be a significant contributor of pollutants to waters of the State;
2. Prohibit and eliminate illicit connections to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4;
3. Control the discharge of spills, and prohibit dumping or disposal of materials other than storm water into the MS4;

4. Require operators of construction sites and industrial and commercial facilities to minimize the discharge of pollutants to the MS4 to the MEP through the installation, implementation, and maintenance of appropriate controls, including installation, implementation and long-term maintenance of post construction controls;
5. Request information to determine compliance with ordinances or other regulatory mechanism;
6. Enter private property for the purpose of inspecting and monitoring at reasonable times any facilities, equipment, practices, or operations for active or potential polluted storm water discharges to the MS4;
7. Promptly require that dischargers cease and desist discharging and/or clean-up and abate a discharge;
8. Levy citations or administrative fines against responsible parties to include but not limited to non-compliant construction sites;
9. Require recovery and remediation costs from responsible parties; and
10. Provide the authority to enter into interagency agreements with other entities for the purpose of controlling the contribution of pollutants to the MEP from one MS4 to another MS4.

D. SWMPP Plan Review and Modification

1. The Permittee shall submit to the Department within nine (9) months of the effective date of this permit a SWMPP. The Permittee shall implement plans to seek and consider public input in the development, revision and implementation of this SWMPP, as required by Part II.B.2.b.1. Thereafter, the Permittee shall perform an annual review, at a minimum, of the current SWMPP and must modify the SWMPP, as necessary, to maintain compliance with the permit. The annual review of the SWMPP shall be documented and noted in the Annual Report. Any modifications to the SWMPP shall be submitted to the Department via the Alabama Environmental Permitting and Compliance System (AEPACS) at the time a modification is made and the Permittee's website shall be updated with the revised version of the SWMPP. Modifications made to the SWMPP may include, but are not limited to, the replacement of ineffective or infeasible BMPs or the addition of components, controls and requirements.

2. The Permittee shall implement the SWMPP on all new areas added to their MS4 (or for which they become responsible for implementation of storm water quality controls) as soon as practicable but no later than one (1) year from the addition of the new area. Implementation of the program in any new area shall consider the plans of the SWMPP of the previous MS4 ownership, if any.

E. Impaired Waters and Total Maximum Daily Loads (TMDLs)

1. The Permittee must determine whether the discharge from any part of the MS4 contributes directly or indirectly to a waterbody that is included on the latest §303(d) list or designated by the Department as impaired or is included in an EPA-approved or EPA-established TMDL;

2. If the Permittee's MS4 discharges to a waterbody included on the latest §303(d) or designated by the Department as impaired, it must demonstrate the discharges, as controlled by the Permittee, do not cause or contribute to the impairment. The SWMPP must detail the BMPs that are being utilized to control discharges of pollutants associated with the impairment. If existing BMPs are not sufficient to achieve this demonstration, the Permittee must, within six (6) months following the publication of the latest final §303(d) list, Department designation, or the effective date of this permit, submit a revised SWMPP detailing new or modified BMPs. The SWMPP must be revised as directed by the Department and the new or modified BMPs

must be implemented within one year from the publication of the latest final §303(d) list or Department designation.

3. Permittees discharging from MS4s into waters with EPA-Approved TMDLs and/or EPA-Established TMDLs

    a. The Permittee must determine whether its MS4 discharges to a waterbody for which a TMDL has been established or approved by EPA. If an MS4 discharges into a water body with an EPA approved or established TMDL, then the SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If additional BMPs will be necessary to meet the requirements of the TMDL, the SWMPP must include a schedule for installation and/or implementation of such BMPs. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

    b. If, during this permit cycle, a TMDL is approved by EPA or a TMDL is established by EPA for any waterbody into which an MS4 discharges, the Permittee must review the applicable TMDL to see if it includes requirements for control of storm water discharges from the MS4.

        i. If it is found that the Permittee must implement specific allocations of the TMDL, it must assess whether the assumptions and requirements of the TMDL are being met through implementation of existing BMPs or if additional BMPs are necessary. The SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL.

        ii. If existing BMPs are not sufficient, the Permittee must, within six (6) months following the approval or establishment of the TMDL by EPA, submit a revised SWMPP detailing new or modified BMPs to be utilized along with a schedule of installation and/or implementation of such BMPs. Any new or modified BMPs must be implemented within one (1) year, unless an alternate date is approved by the Department, from the establishment or approval of the TMDL by EPA. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

F. Responsibilities of Permittee

If the Permittee is relying on another entity to satisfy one or more requirements of this permit, then the Permittee must note that fact in the SWMPP. The Permittee remains responsible for compliance with the permit and reliance on another entity will not be a defense or justification for non-compliance if the entity fails to implement the permit requirements.

PART III Monitoring and Reporting

The Permittee shall implement a monitoring program to provide data necessary to assess the effectiveness and adequacy of BMPs implemented under the SWMPP. The quality of the streams receiving MS4 discharges shall continue to be monitored to assess the water quality of the streams and to identify potential water quality impairments. This shall be accomplished by the following:

A. Monitoring Locations

1. Proposed monitoring locations and descriptions of their respective characteristics shall be described in the SWMPP with actual locations described in the Annual Report;

Waterbody	Frequency
Valley Creek	Quarterly
Shades Creek	Quarterly

2. In addition to the requirements in Part III.A.1., if a waterbody (not listed in Part III.A.1) within the MS4 jurisdiction is listed on the latest final §303(d) list, or otherwise designated impaired by the Department, or for which a TMDL is approved or established by EPA, during this permit cycle, then the Permittee must revise its monitoring program to include monitoring that addresses the impairment or TMDL. Any revisions to the monitoring program shall be documented in the SWMPP and Annual Report. In addition, the permit may be modified by the Department to establish the additional or revised monitoring locations.

B. Monitoring Parameters and Frequency

1. Grab samples shall be collected quarterly on Valley Creek and Shades Creek at each instream monitoring station and analyzed for the following parameters:

a. E.Coli;
b. Total Nitrogen (TN) (mg/l);
c. Total Phosphorus (mg/l);
d. Total Suspended Solids (TSS) (mg/l);
e. Temperature;
f. pH/ORP;
g. Turbidity (NTU);
h. Conductivity;
i. Dissolved Oxygen (mg/l);
j. Ammonia Nitrogen (NH_3-N) (mg/l);
k. Biochemical Oxygen Demand (BOD) (mg/l);
l. Chemical Oxygen Demand (COD) (mg/l);
m. Hardness as $CaCO_3$ (mg/l);
n. Nitrate plus Nitrite Nitrogen (NO_3+NO_2-N) (mg/l);
o. Oil and Grease (mg/l);
p. Total Dissolved Solids (TDS) (mg/l); and
q. Total Kjeldahl Nitrogen (TKN) (mg/l);

2. The Permittee must include in the instream monitoring program any additional parameters attributed with the latest final §303(d) list or otherwise designated by the Department as impaired or are included in an EPA-approved or EPA-established TMDL.

C. Sample Type, Collection and Analysis

1. Grab samples shall be collected quarterly. Rainfall data and associated weather conditions shall be recorded for each grab sampling event;
2. Analysis and collection of grab samples shall be done in accordance with the methods specified at 40 CFR Part 136. Where an approved 40 CFR Part 136 method does not exist, then a Department approved alternative method may be used;
3. If the Permittee is unable to collect grab samples due to adverse conditions, the Permittee must submit a description of why samples could not be collected, including available documentation of the event. An adverse climatic condition which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

PART IV Annual Reporting Requirements

1. The Permittee shall submit to the Department an Annual Report and all other information and documents via AEPACS no later than January 31st of each year. The Annual Report shall cover the previous fiscal year beginning October 1 through September 30.

2. The Permittee shall sign and certify the Annual Report in accordance with Part V.M. If the Responsible Official has designated a duly authorized representative in accordance with Part V.M. to sign the Annual Report, then include a copy of the written designation with the Annual Report.

3. The Annual Report shall include the following information, at a minimum, and in addition to those requirements referenced in Part II.B and Part III:

    a. A list of contacts and responsible parties (e.g., agency, name, phone number, address, & email address) who had input to and are responsible for the preparation of the Annual Report.

    b. An overall evaluation of the storm water management program developments and progress for the following:
        1) Major findings such as water quality improvements or degradation;
        2) Major accomplishments;
        3) Overall program strengths/weaknesses;
        4) Future direction of the program;
        5) The Permittee(s) will make an overall determination of the effectiveness of the SWMPP taking into account water quality/watershed improvements;
        6) Required actions that were not performed, and reasons why the actions were not accomplished; and
        7) If monitoring is required, evaluation of the monitoring data.

    c. The Annual Report will include a narrative report of all program elements referenced in Part II.B of this permit. The activities concerning a program element shall be discussed as follows:

        1) Program element activities completed and in progress;
        2) General discussion of element. Explanation for all element activities that have not been fully implemented or competed. Results of activities shall be summarized and discussed (e.g., maintenance caused by inspection, pollutants detected by monitoring, investigations as a result of dry and wet

weather screening, number and nature of enforcement item, education activities/participation);
3) Status of program element with compliance, implementation, and augmentation schedules in Part II of the permit;
4) Assessment of controls; and
5) Discussion of proposed element revisions.

d. Notice of reliance on another entity to satisfy some of your permit obligations.

e. Results of the evaluation to determine whether discharges from any part of the MS4 contributes directly or indirectly to a waterbody that is included on the §303(d) list (or designated by the Department as impaired) or for which a TMDL has been established or approved by EPA.

f. The Annual Report shall contain a monitoring section which discusses the progress and results of the monitoring programs required under Part III of the permit and shall include, at a minimum, the following information.

1) Status of implementation of the monitoring program;
2) Map(s) showing the monitoring station locations, latitude/longitude, and narrative site descriptions, including watershed size;
3) Raw data, results, methods of evaluating the data, graphical summaries of the data, and an explanation/discussion of the data for each component of the monitoring program;
4) An analysis of the results of each monitoring program component;
5) A comparison of the reporting year's data to the previous five years of data to establish a trend analysis to determine the relative health of the receiving water;
6) All monitoring reports and supporting data shall be submitted electronically via AEPACS concurrently with the submission of the Annual Report; and
7) The interpretation of the analytical data, required by Part III.B.1-2 of the Permit, for determinacy of meeting water quality standards.

g. Provide the status of the implementation and proposed changes to the SWMPP to include assessment of controls and specific improvements or degradation to water quality;

h. Provide a summary of inspections and enforcement actions for regulatory program. Enforcement actions should include a corrective actions summary;

i. Implementation status of the public education programs; and

j. Status of expenditures and budget for the past fiscal year and the next fiscal year for the Permittee's program. The analysis shall indicate budgets and funding sources.

PART V Standard and General Permit Conditions

A. Certification and Signature of Reports

All reports required by the permit and other information requested by the Director shall be signed and certified in accordance with Part V.M. of this permit.

B. Submittals

All documents required to be submitted to the Department by this permit, shall be submitted to the Department via AEPACS unless the Permittee submits in writing valid justifications as to why the electronic submittal cannot be utilized and the Department approves in writing the utilization of hard copy submittals. The AEPACS can be accessed at the following link; https://adem.alabama.gov/AEPACS. Permit modifications of the existing permit shall be submitted through AEPACS.

Requests as to why AEPACS cannot be utilized shall be addressed to:

Alabama Department of Environmental Management
Water Division
Stormwater Management Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

C. Retention of Records

The Permittee shall retain the storm water quality management program developed in accordance with Part II of this permit until at least five (5) years after coverage under this permit terminates. The Permittee shall retain all records of all monitoring information, copies of all reports required by this permit, and records required by this permit, and records of all other data required by or used to demonstrate compliance with this permit, until at least three (3) years after coverage under this permit terminates. This period may be explicitly modified by alternative provisions of this permit or extended by request of the Director at any time.

D. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

E. Civil and Criminal Liability

1. Tampering

   Any person, who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under this permit shall, upon conviction, be subject to penalties as provided by AWPCA.

2. False Statements

   Any person knowingly makes any false statement, representation, or certification in any record or other documentation submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance, shall, upon conviction, be punished as provided by AWPCA

3. Relief from Liability

   Nothing in this permit shall be construed to relieve the Permittee(s) of civil and criminal liability under AWPCA or FWPCA for non-compliance with any term or condition of this permit.

F. Duty to Reapply

1. If the Permittee intends to continue an activity regulated by this permit beyond the expiration of this permit, the Permittee must apply for and obtain a new permit. The application shall be submitted via AEPACS at least 180 days prior to expiration of this permit.

2. Failure of the Permittee to apply for re-issuance at least 180 days prior to permit expiration will void the automatic continuation of the expiring permit provided by ADEM Administrative Code, Rule 335-6-6.-06, and should the permit not be re-issued for any reason any discharge after expiration of this permit will be an unpermitted discharge.

G. Need to Halt or Reduce an Activity Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

H. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

I. Bypass

a. Any bypass as defined in 40 CFR 122.41(m) is prohibited except as provided in Part V.I.b. and c.

b. A bypass is not prohibited if:

    1. It does not cause any applicable discharge limitation, if specified in this Permit, to be exceeded;

    2. The discharge resulting from such bypass enters the same receiving water as the discharge from the permitted outfall, if applicable;

    3. It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system, if applicable; and

    4. The Permittee monitors the discharge resulting from such bypass at a frequency, at least daily, sufficient to prove compliance with the discharge limitations, if specified in this Permit.

c. A bypass is not prohibited and need not meet the discharge limitations, if specified in this Permit, if:

    1. It is unavoidable to prevent loss of life, personal injury, or severe property damage;

    2. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the Permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

    3. The Permittee submits a written request for authorization to bypass to the Director at least ten (10) days, if possible, prior to the anticipated bypass or within 24 hours of an unanticipated bypass, the Permittee is granted such authorization, and

Permittee complies with any conditions imposed by the Director to minimize any adverse impacts to waters resulting from the bypass.

d. The Permittee has the burden of establishing that each of the conditions of Parts V.I.b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in Part V.I.a. and an exemption, where applicable, from the discharge limitations, if specified in this Permit.

J. Upset

a. Except as provided in Part V.I.b. and c., a discharge which results from an upset as defined in 40 CFR 122.41(n) need not met the applicable discharge limitations, if specified in this Permit if:

1. No later than 24-hours after becoming aware of the occurrence of the upset, the Permittee orally reports the occurrence and circumstances of the upset to the Director; and

2. No later than five (5) days after becoming aware of the occurrence of the upset, the Permittee furnished the Director with evidence, including properly signed, contemporaneous operating logs, design drawings, construction, certification, maintenance records, weir flow measurements, data photographs, rain gauge measurements, or other relevant evidence, demonstration that:

i. An upset occurred;
ii. The Permittee can identify the specific cause(s) of the upset;
iii. The Permittee's treatment facility was being properly operated at the time of the upset; and
iv. The Permittee promptly took all reasonable steps to minimize any adverse impact to waters resulting from the upset.

b. The Permittee has the burden of establishing that each of the conditions of Part J.a. has been met to qualify for an exemption from the discharge limitations, if specified in this Permit.

K. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, suspending, terminating, or revoking and reissuing this permit in whole or in part, or to determine compliance with this permit. The Permittee shall also furnish to the Director upon request copies of records required to be kept by this permit.

L. Other Information

If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

M. Signatory Requirements

All reports and forms to be submitted by this permit, AWPCA and the Department's rules and regulations, shall be signed by a "responsible official" of the Permittee, as defined in ADEM Administrative Code, Rule 335-6-6-.09, or a "duly authorized representative" of such official, as defined by ADEM Administrative Code, Rule 335-6-6-.09, and shall bear the following certification:

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

N. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of FWPCA.

O. Property and Other Rights

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of Federal, State, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the State of Alabama.

P. Severability

The provision of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit shall not be affected thereby.

Q. Compliance with Statutes and Rules

This permit is issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter that are applicable to this permit are hereby made a part of this permit.
This permit does not authorize the non-compliance with or violation of any laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws.

R. Proper Operations and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a Permittee only when necessary to achieve compliance with conditions of the permit.

S. Monitoring Records

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. The Permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of reports required by this permit, and records of all data used to complete the application of this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended at the request of the Director at any time.

T. Monitoring Methods

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

U. Right of Entry and Inspection

The Permittee shall allow the Director or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon any of the permittee's premises where a regulated facility or activity or point source is located or in which any records must be maintained under conditions of this permit;

2. Have access to and copy, at reasonable times, any records required to be maintained by the terms and conditions of this permit;

3. Inspect, at reasonable times, any point source, any monitoring equipment or practices being maintained to comply with this permit, or any treatment or control or systems being maintained to comply with this permit; and

4. Sample or monitor, at reasonable times, for the purposes of determining permit compliance or as otherwise authorized by AWPCA, any substances or parameters at any location.

V. Additional Monitoring by the Permittee

If the Permittee monitors more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monitoring report. Such increased monitoring frequency shall also be indicated on the monitoring report.

W. Permit Modification, Revocation and Reissuance, Suspension, and Termination

1. This permit may be modified or revoked and reissued, in whole or in part, during its term for cause including but not limited to, the following:

    a. If cause for termination under Part V.D., of this permit exists, the Director may choose to revoke and re-issue this permit instead of terminating the permit;

    b. If a request to transfer this permit has been received, the Director may decide to revoke and re-issue or to modify the permit; or

    c. If modification or revocation and re-issuance is requested by the Permittee and cause exists, the Director may grant the request.

2. This permit may be modified during its term for cause, including but not limited to:

    a. If cause for termination under Part V.D., of this permit exists, the Director may choose to modify this permit instead of terminating this permit;

    b. The Director has received new information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

    c. Errors in calculation of discharge limitation or typographical or clerical errors were made;

d. To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, when the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or judicial decision after the permit was issued;

e. To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, permit may be modified to change compliance schedules;

f. To incorporate an applicable Section 307(a) of FWPCA toxic effluent standard or prohibition;

g. When required by the re-opener conditions in this permit;

h. Upon failure of the State to notify, as required by Section 402(b)(3) of FWPCA, another State whose water may be affected by a discharge permitted by this permit;

i. When required to correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions;

j. When requested by the Permittee and the Director determines that the modification has cause and will not result in a violation of federal or State law, rules, or regulations;

k. To add a new Permittee who is the owner or operator of a portion of the Municipal Separate Storm Sewer System; or

l. To change portions of the Storm Water Quality Management Program that is considered permit conditions.

3. This permit may be terminated during its term for cause, including but not limited to, the following:

   a. Violation of any term or condition of this permit;

   b. The permittee's misrepresentation or failure to disclose fully all relevant facts in the permit application or during the permit issuance or the permittee's misrepresentation of any relevant facts at any time;

   c. Materially false or inaccurate statements or information in the permit application or the permit;

   d. The permittee's discharge threatens human life or welfare or the maintenance or water quality standards; or

   e. Any other cause allowed by ADEM Administrative Code, Rule 335-6-6.

4. This permit may be suspended during its term for cause, including but not limited to, the reasons for termination listed above.

5. The filing of a request by the Permittee for modification, suspension or revocation of this permit, in whole or in part, does not stay any permit term condition.

X. Termination of Coverage for a Single Permittee

Permit Coverage may be terminated, in accordance with the provision of 30 CFR 122.64 and 124.5, for a single Permittee without terminating coverage for other permittees.

Y. Modification of Storm Water Management Program

Only those portions of the Storm Water Management Program specifically required as permit conditions shall be subject to modification requirements of 40 CFR 124.5. Replacement of an ineffective or infeasible BMP implementing a required component of the Storm Water Management Program with an alternate BMP expected to achieve the goals of the ineffective or infeasible BMP shall be considered a minor modification to the SWMPP and not modification to the Permit.

Z. Changes in Monitoring Outfalls

This permit is issued on a system-wide basis in accordance with CWA §402(p)(3)(i) and authorizes discharges from all portions of the MS4. Since all outfalls are authorized, changes in monitoring outfalls, other than those with specific numeric effluent limitations, shall be considered minor modifications to the permit and will be made in accordance with the procedures at 40 CFR 122.63.

AA. Definitions

1. "Alabama Handbook" means the latest edition of the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, Alabama Soil and Water Conservation Committee (ASWCC) published at the time the permit is effective.

2. "Arithmetic Mean" means the summation of the individual values of any set values divided by the number of individual values.

3. "AWPCA" means Code of Alabama 1975, Title 22, the Alabama Water Pollution Control Act, as amended.

4. "Best Management Practices" (BMPs) means activities, prohibitions of practices, maintenance procedures, and other management practices implemented to prevent or reduce the discharge of pollutants to waters of the State. BMPs also include treatment systems, operating procedures, and practices to control facility runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage.

5. "Control Measure" as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the State.

6. "CWA" or "The Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.

7. "Department" means the Alabama Department of Environmental Management or an authorized representative.

8. "Discharge", when used without a qualifier, refers to "discharge of a pollutant" as defined as ADEM Administrative Code 335-6-6-.02(m).

9. "Flood Management Project" means a project that will alter, modify or change the base flood elevation of a 1% annual chance flood event.

10. "Flow-weighted composite sample" means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge at the time of sampling.

11. "Green Infrastructure" refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspirate (the return of water to the atmosphere either through evaporation or by plants), or reuse stormwater or runoff on the site where it is generated.

12. "Hydrology" refers to the physical characteristics of storm water discharge, including the magnitude, duration, frequency, and timing of discharge.

13. "Illicit connection" means any man-made conveyance connecting a non-storm water discharge directly to a municipal separate storm sewer system.

14. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit.

15. "Industrial Land Use" means land utilized in connection with manufacturing, processing, or raw materials storage at facilities identified under Alabama State Law.

16. "Infiltration" means water other than wastewater that enters a sewer system, including foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

17. "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

18. "Large" municipal separate storm sewer system means all municipal separate storm sewers that are either:

    a. Located in an incorporated place (city) with a population of 250,000 or more as determined by the latest decennial census; or

    b. Located in counties (these counties are listed in Appendix H of 40 CFR 122), except municipal storm sewers that are located in the incorporated places, townships, or towns within such counties; or

    c. Owned or operated by a municipality other than those described in Part V.AA.18.a. or b. and that are designated by the Director as part of the large or medium municipal separate storm sewer system; or

    d. The Director may designate as a large municipal separate storm sewer system, municipal storm sewer located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional watershed, or other appropriate basis that includes one or more of the systems described in Part V.AA.18.a., b., or c.

19. "Low Impact Development" (LID) is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product.

20. "Major outfall" is the point(s) where the MS4 discharges to a water of the State from (1) a pipe (or closed conveyance) system with a cross-sectional area equal to or greater than 7.07 square feet (e.g., if a single circular pipe system, an inside diameter of 36 inches or greater),(2) a single conveyance other than a pipe, such as an open channel ditch, which is associated with a drainage area of more than 50 acres,(3) a pipe (or closed conveyance) system draining "industrial land use" with a cross-sectional area equal to or greater than 0.79 square feet (e.g., if a single circular

pipe system, an inside diameter of 12 inches or greater),(4) or a single conveyance other than a pipe, such as an open channel ditch, which is associated with an "industrial land use" drainage area of more than 2 acres; For the purpose of this permit, outfalls of the "double barrel" type, whose combined cross-sectional area is greater than 7.07 square feet, equivalent to a single circular pipe outfall with an inside diameter of 36 inches or greater, are also considered major outfalls.

21. "MEP" is an acronym for "Maximum Extent Practicable," the technology-based discharge standards and controls necessary for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA Section 402(p). These standards and controls may consist of a combination of best management practices, control techniques, system design and engineering methods, and such other provisions for the reduction of pollutants discharged from a MS4 as described in the storm water management system.

22. "Medium" municipal separate storm sewer system means all municipal separate storm sewers that are either:

    a. Located in an incorporated place (city) with a population of 100,000 or more but less than 250,000 as determined by the latest decennial census; or

    b. Located in counties (these counties are listed in Appendix I of 40 CFR 122), except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties; or

    c. Owned or operated by a municipality other than those described in Parts V.AA.22.a. and b. and that are designated by the Director as part of the large or medium municipal separate storm sewer systems; or

d. The Director may designate as a medium municipal separate storm sewer system, municipal storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional watershed, or other appropriate basis that includes one or more of the systems as described in Parts V.AA.22.a., b., or c.

23. "MS4" is an acronym for "Municipal Separate Storm Sewer System" and is used to refer to either a large, medium, or small municipal separate storm sewer system. The term is used to refer to either the system operated by a single entity or a group of systems within an area that are operated by multiple entities.

24. "Municipal Separate Storm System" is defined at 40 CFR Part 122.26(b)(8) and means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined in ADEM Administrative Code335-6-6-.02(nn).

25. "Permittee" means a person or applicant for which an NPDES permit has been issued.

26. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other

floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

27. "Priority Construction Site" means any qualifying construction site in an area where the MS4 discharges to a waterbody which is listed on the most recently approved 303(d) list of impaired waters for turbidity, siltation, or sedimentation, any waterbody for which a TMDL has been finalized or approved by EPA for turbidity, siltation or sedimentation, any waterbody assigned the Outstanding Alabama Water use classification in accordance with ADEM Admin. Code r. 335-6-10-.09, and any waterbody assigned a special designation in accordance with 335-6-10-.10.

28. "Qualifying Construction Site" means any construction activity that results in a total land disturbance of one or more acres and activities that disturb less than one acre but are part of a larger common plan of development or sale that would disturb one or more acres. Qualifying construction sites do not include land disturbance conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission.

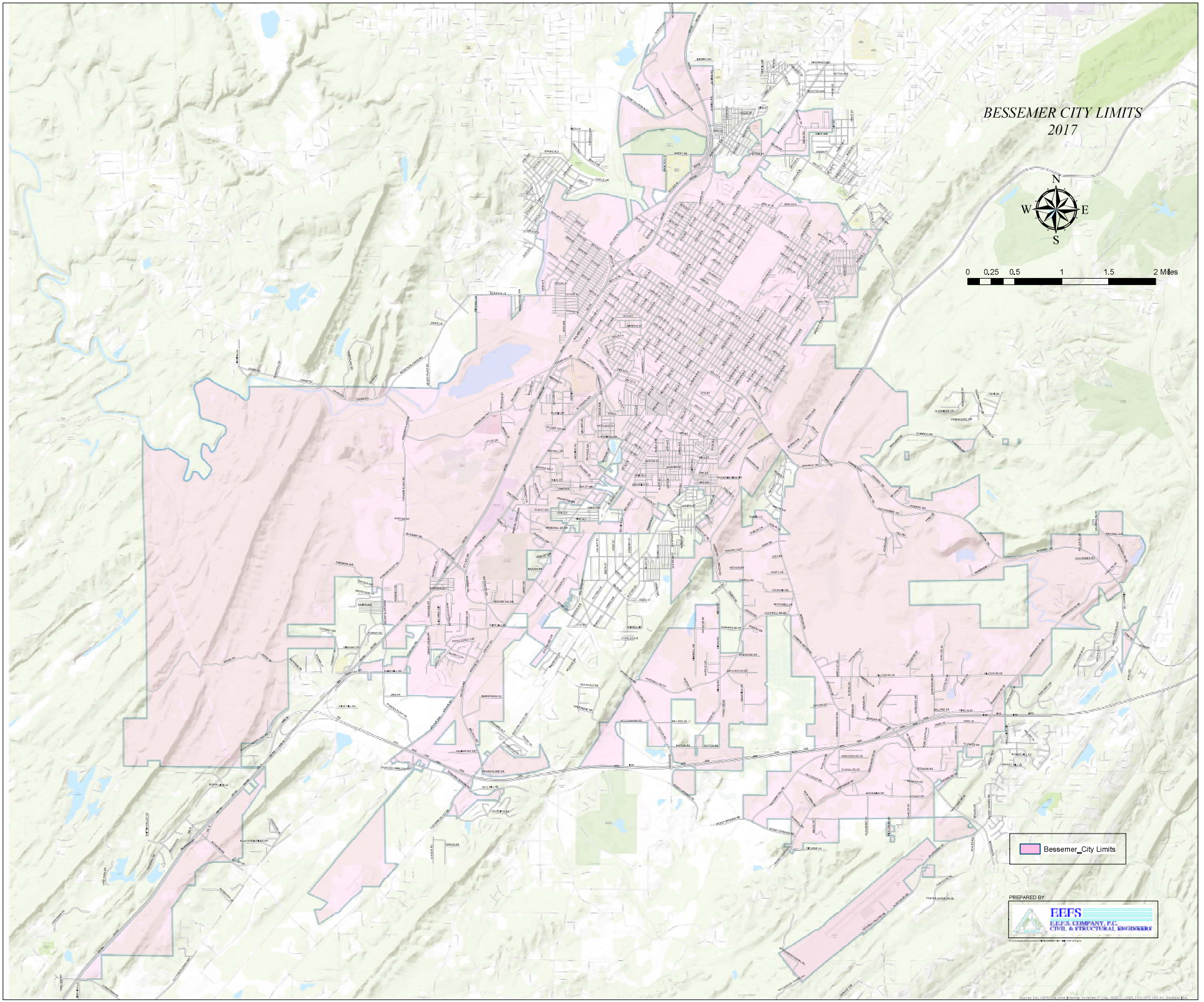
29. "Qualifying New Development and Redevelopment" means any site where construction commenced on or after December 1, 2018 that results from the disturbance of one acre or more of land or the disturbance of less than one acre of land if part of a larger common plan of development or sale that is greater than one acre. Qualifying new development and redevelopment does not include land disturbances conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission or an existing development that has been constructed or approved prior to December 1, 2018.

30. "Storm water" is defined at 40 CFR Part 122.26(b)(13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.

31. "Structural Controls" means an engineered BMP constructed with rigid walls and/or weirs and piped drainage that utilize active or passive treatment and/or mechanical systems for the purpose of treating storm water runoff.

32. "Structural Flood Control" means structural measures that control the 1% annual chance floodwaters by construction of barriers, storage areas or by modifying / redirecting channels.

APPENDIX B:
City of Bessemer
MS4 Jurisdictional Boundary Map


BESSEMER CITY LIMITS
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Bessemer_City Limits
PREPARED BY
EEFS
E.E.F.S. COMPANY, P.C.
CIVIL & STRUCTURAL ENGINEERS

APPENDIX C:
City of Bessemer
Structural Control
Inspection Form

City of Bessemer – Structural Control Inspection Report

Structural Control ID:_____ Date/Time of Inspection:_____

Location:_____ Receiving Stream:_____

	Yes	No	N/A	Comments	Photographs
Structural Control Observations					
Erosion					
Sedimentation					
Maintenance					
Structural Integrity					
Effectiveness					
Deficiency					

Additional notes to file:_____

_____

_____

_____

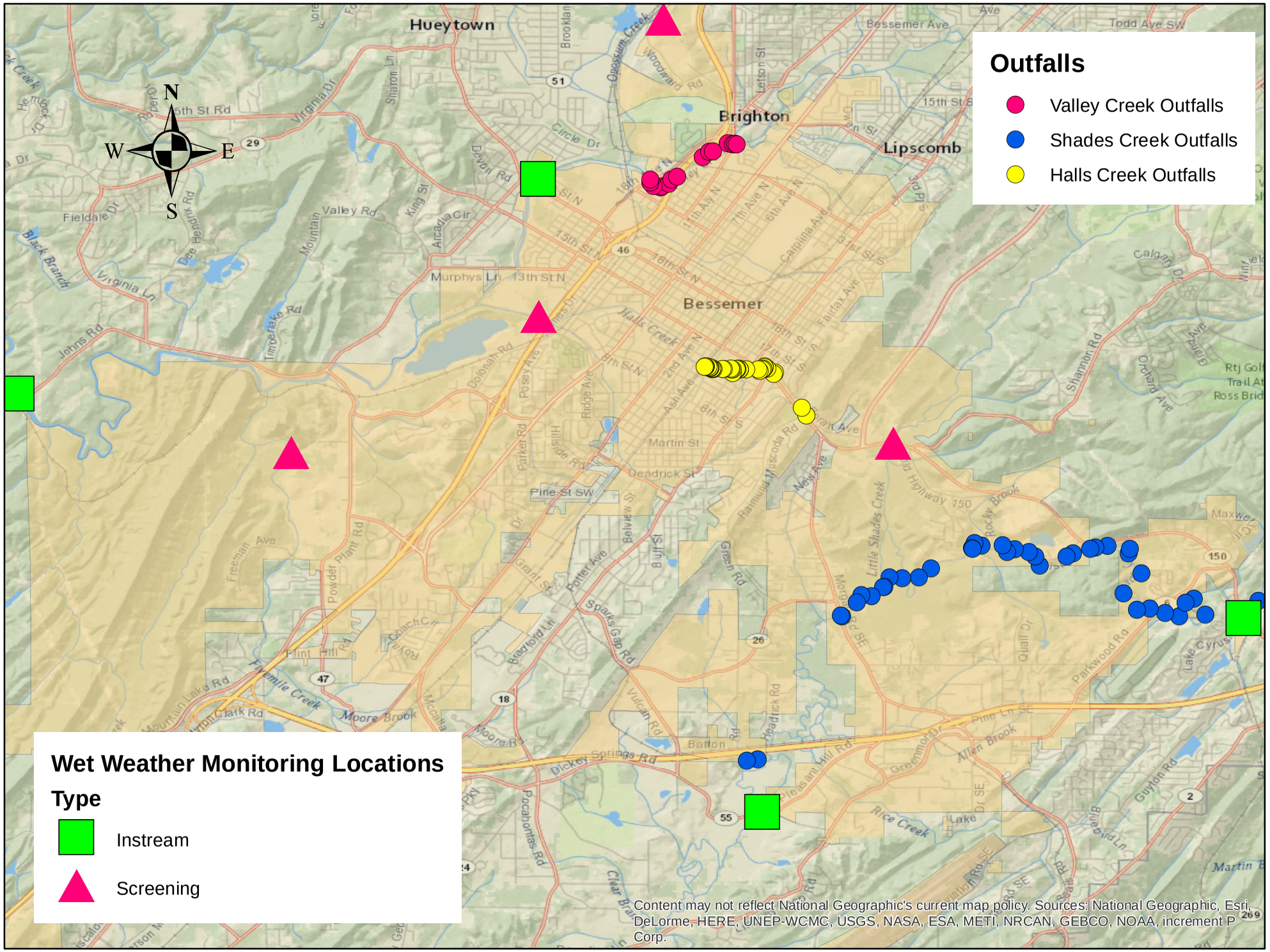
City Inspector Name:_____ Reviewing Supervisor Name:_____

Signature:_____ Signature:_____

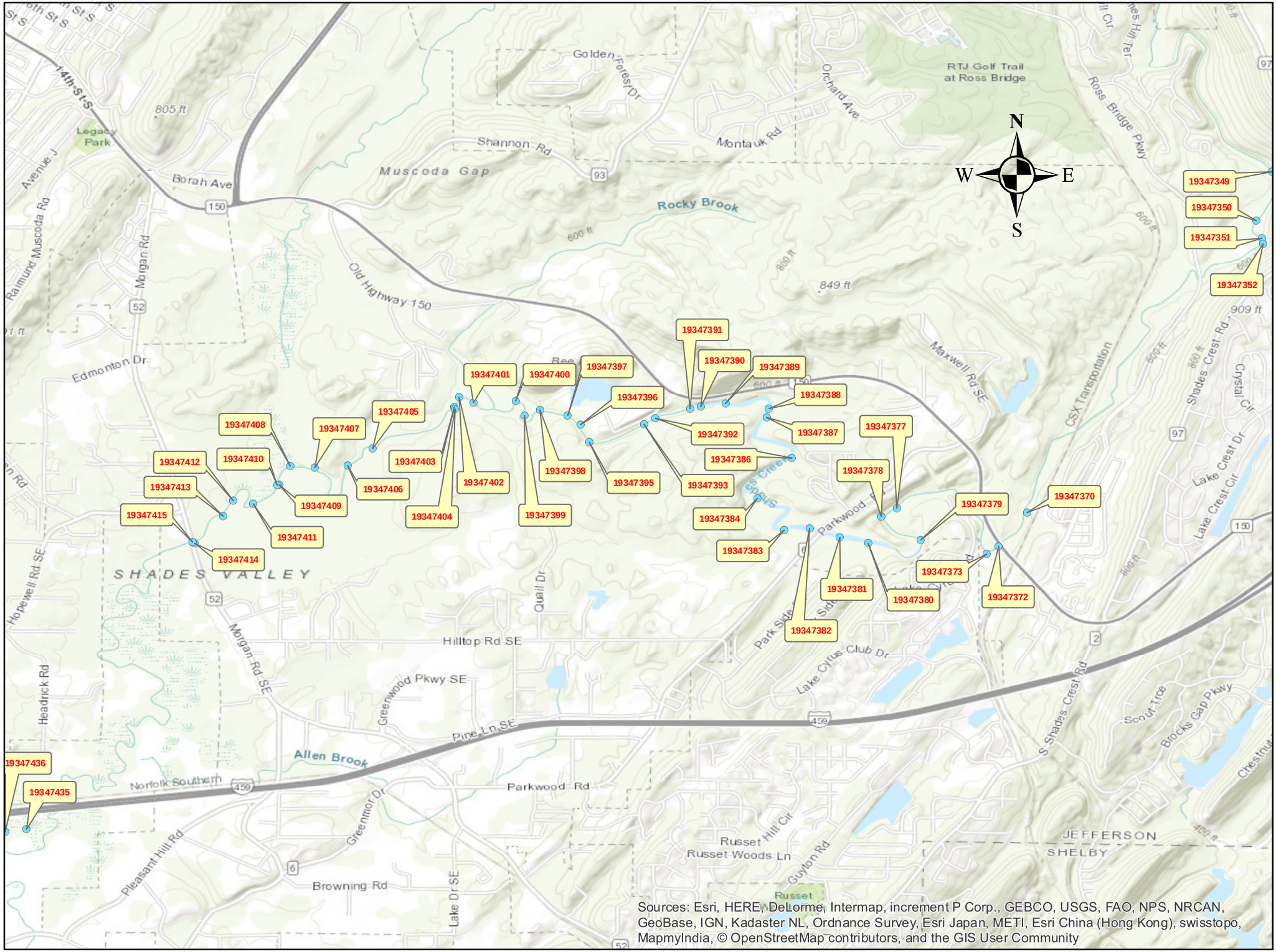
Date:_____ Date:_____

APPENDIX D:
Map of Major Outfalls, Structural Controls and Waters of State

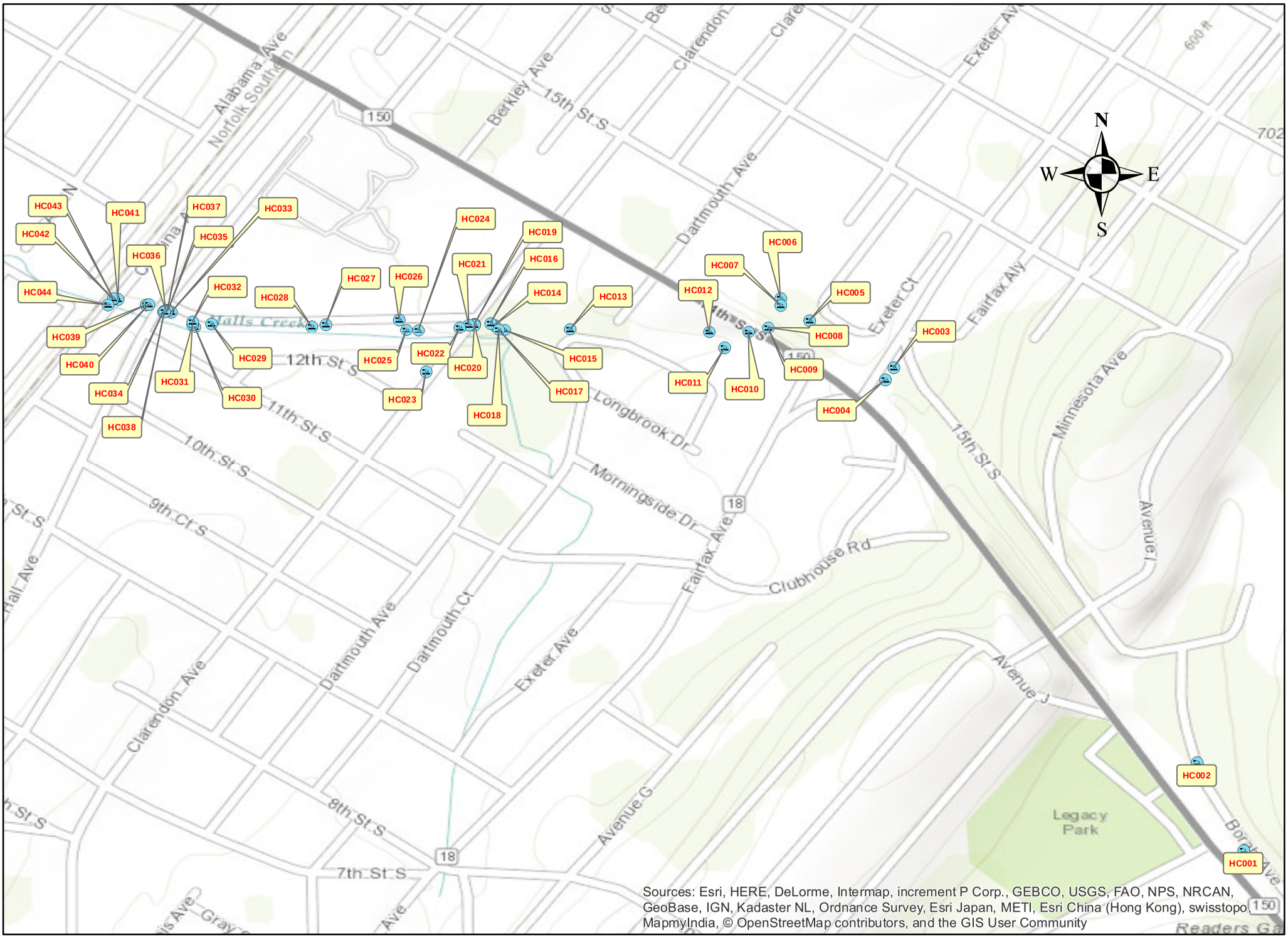
Bessemer Outfalls, Structural Controls and Waters of State



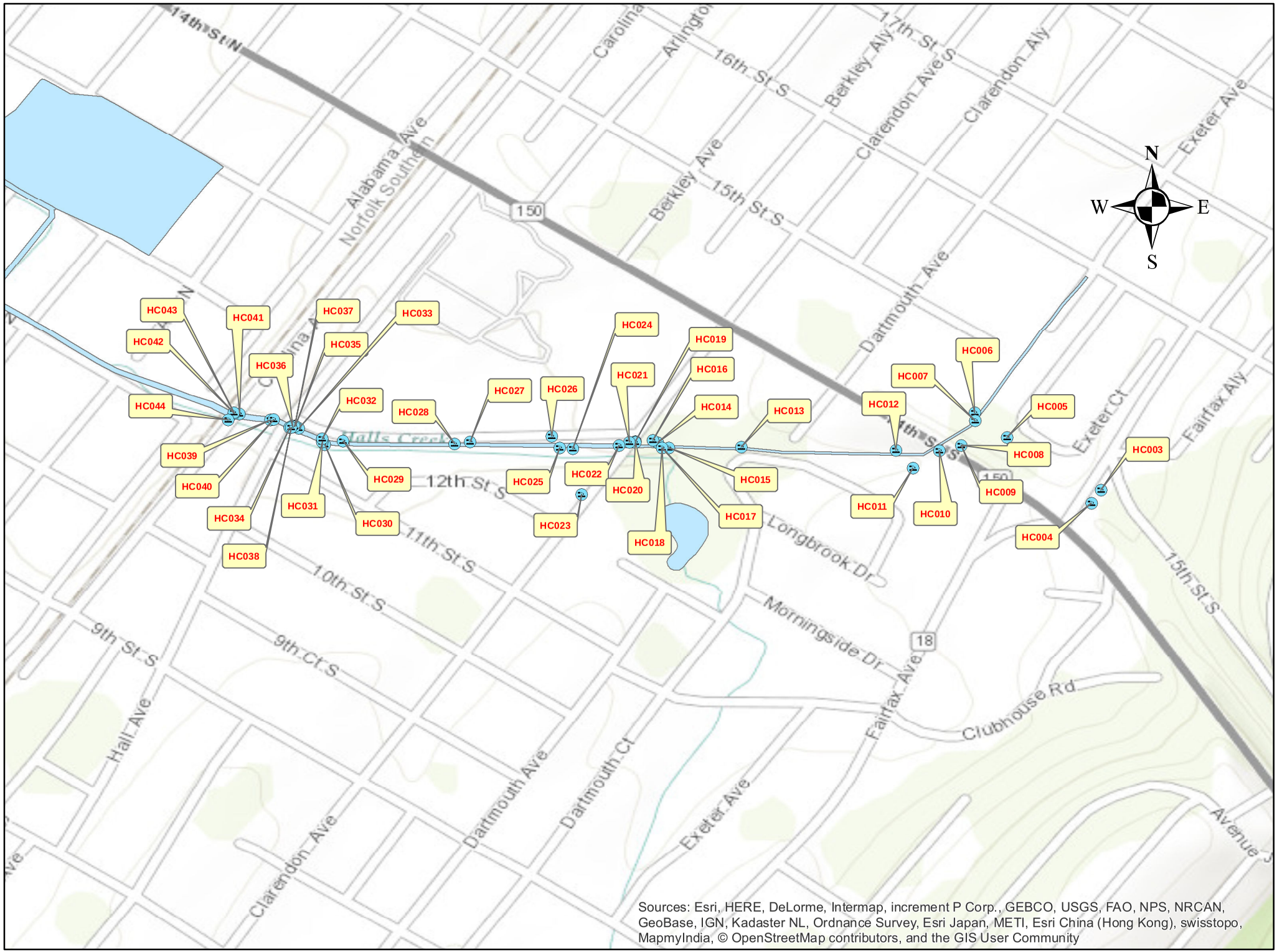
Shades Creek Outfalls



Valley Creek Outfalls



Halls Creek Outfalls



APPENDIX E:
City of Bessemer
Integrated Storm Water
Pollution Prevention Program

CITY OF BESSEMER

THE MARVEL CITY

1700 Third Avenue North ● Bessemer ● AL 35020

Integrated Storm Water Pollution Prevention Program

Revision:
June 2023

Prepared by:
Freddie Freeman
Stormwater Specialist
City of Bessemer
And
Ronald R. Gilbert, P.E.
Bessemer City Engineer
And
EEFS Company, PC

Signatory and Certification:

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

8/21/2023

Kenneth E. Gulley
Mayor, City of Bessemer

Date

1700 Third Avenue North
Bessemer, AL 35020

(205) 424-4060

Table of Contents

1. INTRODUCTION

The City of Bessemer (the City) was issued by the Alabama Department of Environmental Management (ADEM) a Municipal Separate Storm Sewer System (MS4) Phase 1 Permit No. ALS000022 on December 12, 2022. The permit took effect on December 12, 2022 and replaced the previous jointed-municipals Permit No. ALS000001.

This Integrated Storm Water Management Program Plan has been developed to address more specifically on the following two elements which required by NPDES Permit No. ALS000022.

- **Illicit Discharge Detection and Elimination**
- **Spill Prevention and Response**

Per the requirements of NPDES Permit No. ALS000022, BMPs, measurable goals, and responsibility designations are provided for each of the following program elements:

1. Storm Water Collection System Operations
2. Public Education and Public Involvement on Storm Water Impacts
3. Illicit Discharge Detection and Elimination
4. Construction Site Strom Water Runoff Control
5. Post-Construction Storm Water Management in New Development and Re-Development
6. Spill Prevention and Response
7. Pollution Prevention/Good Housekeeping for Municipal Operations
8. Application of Pesticide, Herbicide, and Fertilizers
9. Oils, Toxics, and Household Hazardous Waste Control
10. Industrial Storm Water Runoff

2. ILLICIT DISCHARGE DETECTION

2.1 Definition of an Illicit Discharge

The term “illicit discharge” is described as any discharge to a municipal separate storm sewer system (MS4) that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the City MS4) and discharges resulting from firefighting activities.

Illicit discharges can be categorized as either direct or indirect.

Examples of direct illicit discharges include:

- Sanitary wastewater piping that is directly connected from a home to the storm sewer
- Materials (i.e., used motor oil) that have been dumped illegally into a storm drain catch basin
- A shop floor drain that is connected to a storm drain
- A cross-connection between a sanitary sewer and a storm sewer

Examples of indirect illicit discharges include:

- Old and damaged sanitary sewer lines that are leaking fluids into a cracked storm sewer line
- A failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into a storm sewer

2.2 Allowable and Occasional Incidental Discharges

The following non-storm water sources are allowed and which the City of Bessemer (City) has determined to not being substantial contributors of pollutants to the City’s MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream flow
- Rising ground water
- Residential building wash water without detergents
- Uncontaminated pumped ground water
- Uncontaminated ground water infiltration
- Discharges from potable water source
- Foundation drains
- Air conditioning condensate

- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- De-chlorinated swimming pool discharges
- Street wash water
- Fire hydrant flushing
- Non-commercial or charity car washes
- Discharges from riparian areas and wetlands
- Discharges in compliance with a separate National Pollutant Discharge Elimination System (NPDES) permit
- Discharges or flows from emergency firefighting activities†

† *Discharges or flows from emergency firefighting activities provided procedures are in place for Incident Commander, Fire Chief or other on-scene firefighting official in charge to make an evaluation regarding potential release of pollutants from the scene. Measures must be taken to reduce any such pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. Discharges or flows from firefighting training activities are not authorized by this permit.*

The list of all allowable non-stormwater discharges will be maintained by City administrative staff. Any local controls required by the City on these incidental discharges will be placed in the SWMPP by written amendment.

2.3 Inventory Process

The inventory process will include detailed steps that are implemented to detect and eliminate potential discharges. Following steps for inventory process include:

1) Development of GIS map with City boundary limits with current outfall locations
2) Identify areas of priority that have recurrence of illicit discharges
3) Streamline industrial zones with and without discharging permits
4) Provide public education materials to employees, business, and the general public of hazards associated with illegal discharges

2.4 Response to Suspected or Reported Illicit Discharge

The City has incorporated a Storm Water Management Program that is staffed to fulfill an IDDE program which includes outreach and education, water quality monitoring and stormwater system operation and maintenance.

Citizens can report a suspect illicit discharge to the City Stormwater Specialist.

Freddie Freeman, Stormwater Specialist
City of Bessemer
1700 Third Avenue North
Bessemer, AL 35020
Phone: (205) 424-4060
Fax: (205) 481-4359
Email: ffreeman@bessemeral.org

2.5 Monitoring Strategy

2.5.1 Monitoring Activities

The term “monitoring” is described as observe and check the progress or quality of something over a period of time; to keep under a systematic review.

The monitoring will include watersheds and located within the City limits. There is more than 20 total combined miles of streams (Valley and Shades Creeks) in the City areas.

2.5.2 Outfall Inspections & Reconnaissance

Outfall reconnaissance inventory will perform by the City staff physically monitoring and surveying the outfalls. It will include photographs, documentation of the outfall’s type, dimensions, shape, and component materials, and make observations using basic sensory methods.

Table 2-1 gives criteria that should be followed for outfalls that should and shouldn’t be inspected in the future. This information shall be properly documented and tracked in a spreadsheet and will be used for updating the City outfalls inventory for inspection in the future. Each outfall shall be assigned a unique ID in consistence with the inventory database.

Table 2-1: Outfall Criteria

Outfalls to Record	Outfalls to Skip
Pipes (greater than 12” in diameter) that appear to be part of storm drain infrastructure	
Outfalls that appear to be part of headwater streams/channels	Drop inlets from roads in culverts (unless evidence of illegal dumping, dumpster leaks, etc.)
Field connection to culverts	Cross-drainage culverts in transportation right-of-way (i.e., can see daylight at the other end)
Submerged or partially submerged outfalls	Weep holes
Outfalls that are blocked with debris or sediment deposits	Flexible HDPE pipes that are known to serve as slope drains
Pipes that appear to be outfalls from storm water management facilities	Pipes that are clearly connected to roof downspouts via above ground connections

If it is necessary, grab samples will be taken to test by using field kits and meters and/or in a certified lab.

The land use of a drainage area can contribute to the size and characterize of an outfall structure. Table 2-2 displays the land use in drainage area for outfall reconnaissance inventory.

Table 2-2: Land use in drainage area for outfall reconnaissance inventory

Land Use Sector	Generating Sites	Discharge-Producing Activities
Residential	• Apartments • Multi-Family • Single Family	• Car washing • Driveway cleaning • Dumping/spills • Equipment • Wash-downs • Lawn/landscape watering • Septic system maintenance • Swimming pool discharges
Commercial	• Campgrounds/RV parks • Car dealers/car rentals • Car washes • Commercial laundry/dry cleaning • Gas station/auto repair • Marinas • Nurseries and garden centers • Oil change shops • Restaurants • Swimming pools	• Building/parking lot maintenance (pressure wash) • Dumping/spills • Landscaping/ground care • Outdoor material storage • Vehicle fueling/washing • Vehicle maintenance/repair • Grease trap/equipment cleaning
Industrial	• Auto recyclers/scrape yards • Beverage makers and breweries • Construction vehicle washouts • Distribution centers • Food processing • Garbage truck washouts • Boat shops and repair • Metal plating operations • Paper and wood products • Petroleum storage • Printing	• All commercial activities • Industrial process water or rinse water • Loading and unloading area wash-downs • Outdoor material storage
Institutional	• Cemeteries • Churches • Corporate campuses • Hospitals • Schools and universities	• Building/parking lot maintenance (pressure wash) • Dumping/spills • Landscaping/ground care • Vehicle washing
Municipal	• Airports • Animal shelters • Landfills • Maintenance shops • Municipal fleet storage areas • Public works yards • Streets and highways	• Building/parking lot maintenance (pressure wash) • Dumping/spills • Landscaping/ground care • Outdoor material storage • Road maintenance • Vehicle maintenance/repair • Spill prevention/response

2.5.3 Field Data Collection

The objective of the field data collection is to have staff observe physical indicators in and around streams and MS4 areas and to note if something questionable is observed. The physical attributes that are common to illicit discharges are as follows:

- Unusual flows
- Pungent odors
- Discoloration or oil substances in the water
- Stains or waste residues in channels
- Dewatering of construction sites
- Overflows of the sanitary sewerage system
- Improper washing of ready-mix cement trucks
- Latex/oil-based paints and solvents disposed of in street gutters or storm inlets

When City staff encounters these types of observations, they should take photos and fill out the “Reported Spill and Illicit Discharge Investigation Form”. The necessary field survey will generate information to trace the responsible parties of the illegal discharging.

2.5.4 Field Conditions

Field conditions that must be met to conduct IDDE outfall reconnaissance are less than 0.1 inches of rainfall 72 hours prior to the reconnaissance activities. Note if heavy rainfall has occurred for several days prior to field observation, groundwater flow may be present due to heavy saturation.

2.5.5 Physical Indicators

The dry weather visual inspection at the outfall includes inspection for flow, odor, color, turbidity and floatables at the location. These characteristics will help as indicators for an illicit discharge presence at an outfall. Sometimes flow may be present at an outfall but may not be characterized as an illicit discharge. The inspection for physical indicators at outfalls is a good alternative technique for monitoring illicit discharges.

The most common floatables consist of sewerage, suds, and oil sheens. The observation of sewerage at an outfall location indicates problems with the MS4.

Presence of suds (some are naturally formed by the movement of the water) in the flow at an outfall can indicate a variety of things. Suds can identify things such as

water turbulence (suds located at the bottom of waterfalls which dissipate quickly) and the presence of laundry or wash water in a waterbody (can be indicate by the scent of the suds).

Oil sheens are also another physical indicator. Some oil sheens are common and occur naturally by instream processes. This occurs when iron bacteria form a sheet-like film which can be determined by looking at the sheen and seeing if it cracks when disturbed. Synthetic oil sheens, on other hand, will swirl when disturbed which means the sheen is from an oil source.

The presence of flow at an outfall is another important physical indicator. This will include observing the area at outfall's location for any type of observable pollution problem that may be the result of a transitory or intermittent illicit discharge. City staff will inspect the outfall to make sure the illicit discharge is controlled as part of the illicit discharge elimination process. Below are tables for odor (Table 2-3) and color (Table 2-4) attributes that can be sensed during routine inspections.

Table 2-3: Odor and General Causes

	Odor	**General Cause**
1	Rotten eggs/hydrogen sulfide (septic)	Raw sewage, decomposing organic matter, lack of oxygen
2	Chlorine	Wastewater treatment plant discharges, swimming pool overflow, industrial discharges
3	Sharp, pungent odor	Chemicals, pesticides
4	Musty odor	Presence of raw or partially treated sewage, livestock waste
5	Gasoline, petroleum	Industrial discharge, illegal dumping of wastes, waste water
6	Sweet, fruity	Commercial wash water, wastewater

When flow is present at an outfall, by collecting a grab sample. Fill the sample bottle at least halfway with sample water and hold it about six inches away from your nose. Use your free hand to fan the scent to your nose, if any. Never inhale the air directly off the top of a sample as many potential contaminants are harmful to nasal membranes and lung tissue. Make sure that the origin of the odor is at the outfall. Sometimes shrubs, trash, or even spray paint used to mark the outfall can confuse the nose.

Table 2-4: Colors for Possible Sources of Illicit Discharge

	Color	Possible Sources
1	Tan to light brown	• Suspended sediments common after rainfall • Runoff from construction sites, roads, agriculture/range land • Soil erosion caused by vegetation
2	Pea green, bright green, yellow, brown, brown-green, brown-yellow, blue-green	• Algae or plankton bloom-color • Depends on type of algae or plankton • Sewage, fertilizer runoff, vehicle wash water
3	Tea/coffee	• Dissolved or decaying organic matter from soil or leaves. Commonly associated with tree overhangs, woodlands, or swampy areas
4	Milky white	• Paint, lime, milk, grease, concrete, swimming pool after filter backwash
5	Milky or dirty dishwater gray	• Gray water or wastewater, musty odors present
6	Milky gray-black	• Raw sewage discharge or other oxygen-demanding waste (rotten egg or hydrogen sulfide odor may be present)
7	Clear black	• Caused from turnover of oxygen-depleted waters or sulfuric acid spill
8	Dark red, purple, blue, black	• Fabric dyes, inks from paper and cardboard manufacturers
9	Orange-red	• Leachate from iron deposits • Deposits on stream beds often associates with oil well operations (check for petroleum)
10	White crusty deposits	• Common in dry/arid areas or during periods of low rainfall where evaporation of water leaves behind salt deposits • Also found in association with brine water discharge from oil production areas (a petroleum odor or an oily sheen may be present along banks)

2.6 Visual Inspection

As much as possible, visual inspections should be conducted before any written documentation. Indicators, such as oil sheens and cloudiness, can be altered by disturbances like wading in the water and residue from staff gear, and consequently could be overlooked.

2.6.1 Grab sampling Procedures

When there are signs of flow from an outfall or illicit discharges, City staff will collect samples using grab sampling techniques. The following procedure will be used for field sampling.

1) Remove the bottle cap.
2) Openings of sampling bottles should not be touched. To prevent contamination, keep the bottom of the bottles clean.
3) Do not allow bottle lids to touch ground. This will also prevent contamination.
4) Holding the bottle near its base, plunge the bottle, opening first, below the surface.
5) Turn the bottle toward the possible illicit discharge. Allow discharge to run slowly into the container.
   - If water is > 6” deep, collect sample 8”~12” below water surface
   - If water is < 6” deep, collect sample midway between bottom and surface of water
6) Remove the bottle when it is approximately 85% full so that some air space remains.
7) Replace the cap on the bottle, taking care not to touch the inside of cap.
8) Apply proper labels, and place the bottle upright in the cooler. Record the sample on the “Reported Spill and Illicit Discharge Investigation Form”. If samples need to be transferred to other testing bottle, do so appropriately.

3. ILLICIT DISCHARGE SOURCE TRACING

3.1 Source Tracing

When discharges at an outfall prove to have an illicit discharge, the next step is to locate the source of that discharge and eliminate the identified discharge. Figure 3-1 illustrates the possible violations process that the City staff will execute as part of IDDE program. Following are the source tracing techniques of which one or more may be employed to trace the source of an illicit discharge. Among all the techniques, the visual inspection at manhole and storm drain network technique will be applied most of the time when tracing the source.

Figure 3-1: Possible Illicit Discharge Violation Process

When conditions warrant during the possible illicit discharge violation process the Tier I parameter testing, Table 3-1, should be a regular part of a field inspection. Parameter measures at or above the recommended levels should be investigated further. Unless otherwise indicated, the levels of concern are for identifying illicit discharges and are meant to serve as a guideline.

Table 3-1: Tier I Parameters Potential Sources with Level of Concerns

Tier I Parameters	Potential Sources	Level of Concern
Ammonia-Nitrogen	Microbial decomposition of animal and plant proteins, sanitary wastewater, raw or partially-treated sewage, petroleum refining and chemical industries, synthetic fibers and dyes, drugs, pesticides, and fertilizer	1.0 mg/L
Chlorine	Used to indicate inflow from potable water sources; used as disinfectant in water and wastewater treatment processes	0.2 mg/L
Conductivity	Used to measure total dissolved solids (TDS); TDS can increase as a result of wastewater discharges, irrigation, and overuse of fertilizers	1500 µS/cm
Copper	Can indicate waste from manufacture of electrical components, coins, bronze, brass products	0.2 mg/L
Detergent	Can indicate a discharge from wash water or laundry	0.2 mg/L
pH	Extreme pH values (low or high) may indicate commercial or industrial flows	Below 6.0 or Above 9.0

Tier II parameters do not typically need to be tested unless there is an obvious reason to do so. A field test may not be available for Tier II parameters, so samples may need to be taken to a lab for analysis. Table 3-2 displays the Tier II parameters with potential sources and level of concerns.

Table 3-2: Tier II Parameters Potential Sources with Level of Concerns

Tier II Parameters	Potential Sources	Level of Concern
Bacteria (Fecal Coliform; E. coil)	Can be found in the feces of human and other warm-blooded animals from direct discharge	400col/100mL-fecal coliform 394 col/100 mL-E. coil
Dissolved Oxygen (DO)	Low DO can indicate sewage problem or excessive nutrient load; as water temperature increases, DO generally decrease	Exceptional – 4.0 mg/L High/Intermediate – 3.0 mg/L Limited – 2.0 mg/L Minimal – 1.5 mg/L
Fluoride	Potable water	0.5 mg/L
Leads	Used in construction material for tank linings, piping, and other equipment for corrosive gasses and liquids	0.1 mg/L
Nickel	Used in making stainless steel and other alloys, coinage, armor plates	0.2 mg/L
Nitrogen Nitrate Nitrite	High levels of nitrate may indicate biological waste or runoff from heavily fertilized areas; nitrites are often used as corrosion inhibitors in industrial process and cooling water and are used in food as preservatives	1.0 mg/L
Phosphates	Found in fertilizer and industrial waste	0.5 mg/L

There also are 4 different occurrences where illicit discharge sources originate. These four occurrences are an internal plumbing connection, a service lateral cross-connection, an infrastructure failure, and an indirect transitory discharge.
The Table 3-3 below summarizes the different ways an illicit discharge can originate.

Table 3-3: Outfall Inspection and Source Tracing

Illicit discharges generally originate from one of the following sources:

1. An **internal plumbing connection** – i.e., the discharge from a washing machine is directed to the building's storm drain lateral; the floor drain in a garage is connected to the building's storm lateral
2. A **service lateral cross-connection** – i.e., the sanitary lateral from a building is connected to the MS4
3. An **infrastructure failure** within the sanitary sewer or MS4 – i.e., a collapsed sanitary line is discharging into the MS4
4. An **indirect transitory discharge** resulting from leaks, spills, dumping, or overflows

3.1.1 Preliminary Watershed Evaluation

Once the field investigation has indicated possible illicit discharge at an outfall is expected to originate from a particular category (industrial, residential, commercial, institutional, or municipal), an investigation of tracing illicit discharge needs to proceed along a systematic path of action, which investigates areas from high to low potential for causing problems, and focuses in from general storm drain screening to pin-pointing pollutant sources. The preliminary watershed evaluation has to happen in parallel with the sending samples to the lab for analysis and confirmation of suspected illicit discharge.

As part of this preliminary evaluation, the drainage area for outfall must be determined and marked on the map and identify the major land use area (residential, commercial or industrial) on the map from which the illicit discharges at an outfall are suspecting to be originating. The activities in the commercial areas of most concern include vehicle related activities (sales, parts, service, or repair), laundry or dry cleaning (including hospitals and hotels), and restaurants. The municipal activities of most concern include but not limited to: landfills, bus barns, airports, and sanitary wastewater treatment facilities. The activities that are concern in the industrial land use area includes activities in the Standard Industrial Classification Manual Codes (SIC Codes) industries, which includes food and other basic products production industries, material (such as paper, lumber, etc.) producing industries, chemical manufacturing products, transportation and construction industry, retail services, and other not included in the listed categories bur resembles the listed categories. Additionally, all NPDES permitted facilities are to be mapped and considered for prioritization of investigation process. Additionally, the investigating team can make field trip to the watershed area of the outfall and look for other possible information, such as land use conditions, signs of illicit dumping, etc. and interviewing the people/business in the watershed to aid in prioritizing areas for further investigation.

The above activities should be in a map with complete description of the drainage areas, including outfall locations, NPDES permittees, critical land uses, and drainage boundaries for the outfall. The investigators need to classify drainage areas by their potential for causing non-stormwater entries. This mapping information, together with the information to be obtained as part of outfall investigation and from initial field trips will form the basis to rank the drainage areas in order of priority for further detailed drainage area investigations.

3.1.2 Visual Inspection at Manhole and Storm Drain Network

Visual inspection along the conveyance system will be a preliminary technique that will be used for tracing illicit discharge sources, and the process is simplified if the conveyance system is an open ditch. This illicit discharge source tracing process starts at the MS4 outfall where the illicit discharge has been noticed. The next step is to work "upstream" from this location – that is moving up the storm drainage system to the first manhole. Check this manhole to see if there is evidence of flow. If flow is observed at this manhole, then staff will move to the next upstream manhole. Keep moving upstream until no flow or low flow is observed. When the flow is observed at manholes, they will be inspected for the physical indicators similar to those described in the earlier section. Storm drain maps will be used as staff move upstream to understand the origin of the junction lines which join the storm drain. When there is no flow or low flow observed in the upstream location, this indicates that the illicit discharge source is between the last downstream manhole and the low or no flow manhole. Also, when the physical indicators of flow at a particular manhole show that there is no illicit discharge at a manhole then the illicit discharge source is determined to be downstream from that manhole.

3.1.3 Televising/Video Inspection

Another technique in determining the origin of an illicit discharge source is televising the storm line. Once an area has been determined to contain the discharge video cameras can be used by either pushing or using a mobile video unit. Both cameras will provide detailed information about where the infiltration or connection is located within the MS4 system. The staff can analyze the video recorded to identify where illicit connections enter the storm drain. As this technique is time-consuming and expensive, the City may choose to only use this technique if other techniques are found to be ineffective in locating illicit discharge sources.

3.1.4 Dye Testing

This technique involves flushing non-toxic dye into toilets and sinks. Then City staff can observe storm sewer and sanitary sewer manholes, and storm sewer outfalls for the presence of the dye. Utilization of dye testing will assist in determining the exact location of the illicit discharge. Permission will be required from private property /building owners prior to starting a dye test procedure.

3.1.5 Smoke Testing

The technique involves injecting non-toxic smoke into storm sewer lines and then noting the emergency of smoke from sanitary vents in illicit connected buildings or

from cracks and leaks in the storm sewer lines. This method is only used during special circumstances, when a good storm sewer map is not available for a location and there are known problems of connection issues. Prior to smoke testing, all citizens in the location and all appropriate public agencies are informed of the process. This technique is only used when no other technique is found to be effective in tracing the source; the City's effort will be to avoid the use of smoke testing.

4. ILLICIT DISCHARGE ELIMINATION

When the discharge source of an illicit discharge is located, the next step in IDDE program is to eliminate the identified source. There are different ways in which the City will handle the elimination of illicit discharges to its MS4 system. Typically, the City will response to the illicit discharge source in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

4.1 Coordination with Concerned Agencies

When an illicit discharge source is identified, the City Stormwater Specialist or his/her representative will inform other concerned agencies that are in part or total responsible for source management or enforcement for illicit discharge control. The primary agencies that are informed include ADEM, Jefferson County Health Department, Jefferson County Environmental Services Department, Jefferson County Emergency Management Agency. ADEM will be informed if the enforcement is required for illicit discharges originating from its permitted (mostly industrial NPDES permits) facilities as well as major illicit discharges that are threatened to effect receiving water quality considerably. Jefferson County Environmental Services Department is responsible for managing the City sewer system and hence the Department will be informed of any illicit discharges related to sewage into the City MS4. The Jefferson County Health Department will also be informed of any found illicit discharges related sewerage and any other that are believed to effect public health. Considerably large spills and illicit discharges will be informed to the Jefferson County Emergency Management Agency.

4.2 Emergency Suspensions

The City's legal authority, will be developed or amended as required, allows suspension of access to the storm drain system for discharges that present imminent and substantial danger to the environment or to the health or welfare of citizens, or to the City MS4. Suspension may include blocking pipes, constructing dams, or taking other measures on public ways or public property to physically block the discharge.

4.3 Notice of Violations

For violations of illicit discharges and illegal dumping, the City will issue a Notice of Violation (NOV) to the identified violator. The NOV describes identified violation, a schedule for the removal to be completed, as well as a summary of any agreements between the parties.

4.4 Voluntary Compliance

Part of voluntary compliance includes providing the responsible party with information about the possible illicit connection to the City MS4, its environmental consequences and the applicable regulations. Often, home or business owners may be not aware of the existence of illegal connections between their buildings and the storm sewer systems.

4.5 Escalating Enforcement Compliance

If the City determines that the responsible party has not taken actions in controlling the illicit discharge, the City will follow the regulatory mechanism to enforce the illicit discharge control. Field staff will inspect the outfall to make sure the illicit discharge is controlled as part of the illicit discharge elimination process.

4.6 Discharges from Exempt Parties

Several categories of facilities are regulated by the USEPA for Stormwater discharges under other permits. Because these facilities are already responsible to one enforcement authority for Stormwater discharges, the City exempt them from its municipal ordinance. If the City encounters an illicit discharge that is suspected or determined to be coming from an exempt party that is regulated under some other Stormwater regulation, the City will notify both the suspected discharger and the enforcement authority for that illicit discharge. The notification cab be verbal or in writing.

4.7 Confirmation Inspections

Following the suspected or determined illicit discharge elimination procedure, the City staff will re-visit the illicit discharge location for confirmation of illicit discharge termination. The staff will confirm if the illicit discharge at the location is terminated by monitoring the physical conditions at the location. If the physical conditions are determined not sufficient to verify termination of the illicit discharge, then the discharge

will be tested for water quality parameters. If the staff determines that the illicit discharge at the location is not terminated, then the program manager will follow up with the further actions to eliminate the illicit discharge.

4.8 Program Assessment

The City will assess its IDDE program on annual basis to determine if it has been effective and efficient. Based on the findings of the program assessment, the City will modify its program for the following permit year to have a more efficient IDDE program to control and eliminate the illicit discharges to the City's MS4.

For an effective assessment of the IDDE program, the City will ask and analyze the following questions.

1) Are there any additional priority areas in the City for IDDE monitoring?
2) Is the program effective in identifying and eliminating illicit discharges?
3) Is the program cost effective?
4) Are the parameters and their analytical techniques sufficient for an effective program?
5) Is the illicit discharge reporting and tracking system effective and sufficient?
6) Is the public education program for illicit discharge reporting and controlling effective?

5. SPILL PREVENTION

5.1 Pre-Incident Inspections

Bessemer Fire Department conducts pre-incident plans practices throughout the permit year. These pre-incident plans are conducted at facilities that are NPDES permitted facilities. Bessemer Fire Department personnel walks through each site to identify where hazardous materials are stored. Both Bessemer Fire Department and facility owner develop a plan to prevent the release of hazardous materials during an emergency condition.

5.2 Bessemer Industries

Bessemer Fire Department has inspected a number of industrial facilities in the City limits for fire prevention and hazardous materials storage purposes. As a part of these comprehensive inspections, the spill prevention, countermeasures and control plans of those facilities are reviewed as well as any NPDES storm water permits issued by ADEM.

The City is currently reviewing the Stormwater Management ordinance which will include provisions to inspect additional industrial and high-risk facilities inside City limits.

5.3 Municipal Sites

The Spill Prevention, Control and Countermeasure (SPCC) plan for the City facilities is being developed and reviewed to comply with the requirements of the MS4 permit. The facilities that are included in this review are the Public Works facilities and City's construction and demolition inert landfills listed below.

Table 5-1: Municipal Site Locations

Site	Address/Location
Public Works / Street Department	1205 15th Avenue North
Raimund-Muscoda C/D Inert Landfill	NE¼ of NW ¼ Section 28, Township 19S, Range 4W
Concord C/D Inert Landfill	NE¼ of NW ¼ Section 13, Township 18S, Range 5W
Bessemer Chert Pit	NE¼ of NW ¼ Section 31, Township 18S, Range 4W

6. SPILL RESPONSE

6.1 Spill Response and Clean Up Activities

1. The Bessemer Fire Department works in conjunction with the Jefferson County Emergency Management Agency to primary handle spills that occur in the City limits. The City is currently developing a map of inlets for the Fire Department which will be part of City's long-term plan for spill prevention and response. The City also plans to implement long-term reporting protocols for Fire Department as part of spill prevention and response program.
2. The Bessemer Fire Department retains all reported spill incidents and spill responses.

6.2 Spill Reporting

1. Calls reporting spills of hazardous or high-risk materials may originate with a 911 call to the Bessemer Fire Department or the Jefferson County Emergency Management Agency.
2. The Bessemer Fire Department completes incident reports and those reports are forwarded to the Jefferson County Emergency Management Agency and the Bessemer Stormwater Specialist.
3. Spill response and clean up reports shall also be requested from ADEM.

6.3 Spill Investigation and Follow Up

When a spill is reported, the City staff and its Stormwater Specialist will assess the situation in concern to the City's MS4 and receiving water pollution. The City follows the procedure described here to investigate receiving water pollution due to spills and to report the spill to ADEM.

1. Identify if the spill material reached City's MS4 or entered directly into the nearby receiving waters. Written and oral reports from the Bessemer Fire department, reports from representative of an industry where spill has occurred, and complaints from citizens who reported and witnessed the chemical spill.
2. Review the Material Safety Data Sheet (MSDS) for type and properties of the chemical.

3. When the chemicals from the spills are determined to be entered the City MS4, determine amount of chemical entered the MS4. This can be done by reviewing the oral and written reports obtained by the City staff, inquiring the Bessemer Fire Department and other persons at the spill site, visual observations for signs of width of chemical flow to MS4 from the spill site, material in the MS4, etc.
4. Determine if the amount of chemical entered the MS4 is significant. The City staff and City Engineer will make a professional judgement if the amount entered the system is significant or not.
5. Inform ADEM of the situation. Detail to ADEM on the estimated amount of the spills that reached the City Ms4 and on the potential for receiving water contamination.
6. If the amount of chemical entered the City MS4 is significant, identify the outfall that is receiving the flow from the MS4 into which the spill chemical is entered. Use the City outfall GIS maps to identify corresponding outfall. Estimate approximate storm sewer length from the site where the spill chemical entered the MS4 to the outfall where the MS4 emptying to the receiving waters. If possible, approximate the time that chemical will take to travel in the storm sewer from the spill site to the outfall. Viscous material may take longer time to travel same distance then the water or low viscous liquids. Similarly, when there is no pre-existing flow in the storm sewer then the chemical may take longer time then for the case of pre-existing flow.
7. Field investigates the receiving waters at the identified outfall for any physical parameters such as color, turbidity, oil sheens, etc. Also, observe for any signs of spill chemicals at the opening of the outfall to the receiving waters such as flow markings, color, etc. If the chemical is suspected to be flushed downstream of the receiving water from the outfall, investigation can be conducted by walking downstream of the receiving water. Test the receiving waters for traditional pollutants using storm water field kit and compare the observed values with the expected values for the receiving water for the same weather condition. The pollutants tested may include total suspended solids, color, pH, selected metals, chlorine, ammonia, oils and greases, or any other pollutants that are determined by investigation staff. When the spill contains a chemical concentration of which can’t be determined by the field test kit, then a grab sample of receiving water can be collected and sent for lab analysis.
8. If there are no signs of receiving water contamination with the spill chemical and if the time of receiving water investigation is within the estimated time for chemical to reach the receiving waters, and then re-visit the receiving water for further investigation at a time approximately close to the chemical travel time estimated.

9. Update ADEM with City's investigation results and determine the follow up action.

APPENDIX F:
City of Bessemer
Report Spill and Illicit Discharge
Investigation Form

City of Bessemer, Alabama
MS4 Stormwater Management Program

Reported Spill and Illicit Discharge Investigation Form

Date and Time of Report Received:	Form Completed By:
Reported by (Name/Address/Phone), indicate if it is by anonymous:	Location of Incident:
Reporter's Description of the Incident (attach additional sheets if more space is required for description):	
City Investigated the Site? ☐ Yes ☐ No	Date and Time Site Investigated:
Name(s) of Investigating Personnel:	
Material Involved in the Incident:	Estimated Quantity of Material:
Is Discharge Within Storm Sewer or Reached Storm Sewer? ☐ Yes ☐ No	
Is Discharge Has Potential To Reach Storm Sewer? ☐ Yes ☐ No If Yes, Are Appropriate Containments in Procedures Place? ☐ Yes ☐ No	
Is Discharge Reached Receiving Water or Has Potential to Reach? ☐ Yes ☐ No	
Samples Collected? ☐ Yes ☐ No ; If Yes, Collected at: ☐ Incident Site ☐ Receiving Water	
Is the Responsible Party Identified? ☐ Yes ☐ No; If Yes, Name and Contact Details of Responsible Party:	
Weather (*mark all that apply*): ☐ Runoff Occurring ☐ Dry ☐ Has Rained After Spill	
Other Agencies Informed? ☐ ADEM ☐ FD ☐ EMA ☐ County ☐ Others _____	
Are Photos Taken at the Site? ☐ Yes ☐ No; If Yes Attach Photo Log	

Reported Spill and Illicit Discharge Investigation Form

Additional Description of Incident Investigation, Recommendations, Notifications Made, etc (attach additional sheets if more space is required for description):

City of Bessemer, Alabama
MS4 Stormwater Management Program

Reported Spill and Illicit Discharge Investigation Form

Tracking City Time and Material Spent In Investigating and Abating Illicit Discharge/Spill

(This form has to be filled for every trip to illicit discharge/spill site)

Date:	Site Location:	
Names of Investigating City Personnel:		
Time Arrived On Site:	Time Left From Site:	Total Time Spent In Investigation:
Vehicle Information: (Company ,model & year)		Vehicle Mileage At Start: At End:
Field Water Quality Test Conducted? Yes No		
List Field Parameters Tested:		
List Amount of Reagents/Testing Material Consumed For Field Testing:		
Samples Collected For Lab Testing? Yes No		
List Sample Parameters To Test In The Lab:		
Are Any Spill or Illicit Discharge Containment Materials Deployed By City Staff (non-BFD): Yes No; If Yes, List The Material Deployed and Their Quantity:		
Briefly Describe Investigation or Source Abetment Activities Conducted As Part of This Trip:		
Time Spent In Documenting Investigation Findings and Reporting: (Identify personnel and their time for the activity)		

Revised on 1/5/2018

APPENDIX G:
ADEM Notification by City
Standard Operating Procedure (SOP)

SOP G.1 – ADEM NOTIFICATION BY CITY

Standard Operating Procedure for ADEM Notification by City

Purpose: To notify ADEM to prevent suspect illicit discharges from adjacent MS4 to the City's MS4

Always:

- Monitor waterbodies (Waters of States) around City's jurisdictional boundary for suspect illicit discharges from the upstream side of the adjacent MS4
- Remind citizens to notify City (*see below for contact information*) for any suspect illicit discharges
- Document suspect illicit discharges from adjacent MS4
- Notify ADEM (*see below for contact information*) as soon as a suspect illicit discharge from adjacent MS4 was verified and documented

Whenever possible:

- Verify a suspect illicit discharge from adjacent MS4
- Properly document a suspect illicit discharge from adjacent MS4
- Notify the City – Stormwater Specialist
- Notify ADEM

Contact - CITY:

Freddie Freeman
Stormwater Specialist
1700 Third Avenue North
Bessemer, AL 35020
Phone: (205) 424-4060
Fax: (205) 481-4359
Email: ffreeman@bessemeral.org

Contact - ADEM:

Birmingham Branch
Phone: (205) 942-6168
Fax: (205) 941-1603
Email: bhamail2@adem.alabama.gov
Emergency Response (24-hours)
Phone: 1-800-843-0699

CHECKLIST G.2 – ADEM NOTIFICATION BY CITY – A SUSPECT ILLICIT DISCHARGE FROM ADJACENT UPSTREAM MS4 INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Additional Notes	Action
Waterbody / Waters of States	Petroleum Related		
Waterbody / Waters of States	Siltation Related		
Waterbody / Waters of States	Industrial Waste Related		
Waterbody / Waters of States	Others		

APPENDIX H:
City of Bessemer
Construction Storm Water
Inspection and Enforcement
SOP Manual

CITY OF BESSEMER

THE MARVEL CITY

1700 Third Avenue North ● Bessemer ● AL 35020

Construction Stormwater Inspection And Enforcement Standard Operating Procedures (SOP) Manual

Revision:
June 2023

Prepared by:
Freddie Freeman
Stormwater Specialist
City of Bessemer
And
Ronald R. Gilbert, P.E.
Bessemer City Engineer
And
EEFS Company, PC

Table of Contents

FORM:

1. Purpose and Instruction

The purpose of this document is to provide a Standard Operating Procedures (SOP) for construction site erosion and sedimentation control best management practice (BMP) permit plan review, inspections, compliance and enforcement within the City of Bessemer.

The objective of this manual is to detail operating procedures for implementation of the stormwater erosion and sedimentation inspection program for construction sites discharging stormwater to the City of Bessemer Municipal Separate Storm Sewer System (MS4).

The activities in this manual address implementation requirements which based on the following guidance documents;

- City of Bessemer Soil Erosion and Sediment Control Ordinance
- City of Bessemer Subdivision Regulations
- City of Bessemer MS4 Permit Requirements
- Alabama Handbook for Erosion and Sediment Control and Stormwater Management on Construction Sites and Urban Areas, latest edition
- Low Impact Development Handbook for the State of Alabama, latest edition

2. Permit and Plan Review Process

2.1 Permit

The land disturbing permit and/or building permit shall be required for each construction site within the City of Bessemer.

2.2 Plan Review Process

1. Verify the submittal material
    a. Completion of the Permit Application
    b. All submittal documents must be prepared and certified (signed and sealed) by qualified professions who are qualified by Alabama Department of Environmental Management (ADEM) and the State of Alabama Licensing Boards
    c. Filled the checklist, **FORM 2-1, BMP Plan Review Checklist**
    d. Including but not limited to the existing conditions maps, proposed grading and storm drainage plans, erosion and sedimentation control plans, project specific BMP details, BMP inspection and maintenance procedures, sequence of construction, and etc.
    e. Received three (3) complete sets of the construction documents
2. Review by City Engineer
    a. Review the construction intent
    b. Provide plan review comments
    c. The recommendations of the city engineer to the Building Department after reviewing the submittal material in compliance with requirements and the maximum extent practicable (MEP)
3. Approval and Permit Issuance
    a. Building Department will approve the submittal after receiving the recommendations of the city engineer
    b. Building Department will issue the permit
    c. Two (2) copies of the approved and stamped original sets will be returned to the registrant
    d. The registrant shall keep one (1) copy of the approved and stamped original set at the construction site at all time

3. Site Inspection Procedures

At a minimum, all construction site erosion and sedimentation control inspections shall comply with the following.

3.1 Inspector Qualifications

All inspectors must be certified as a qualified credentialed inspector (QCI) and/or qualified credentialed profession (QCP).

3.2 Inspection Checklist/Report

The standard inspection form shall be used for all erosion and sediment control inspections. The standard form includes a site inspection checklist. Completed forms are archived in the respective department database. The standard inspection form **"FORM 3-1 Construction Site BMP Inspection Report"** is attached.

3.3 Compliance

Erosion and sediment control requirements are performance oriented. All BMPs must be effective in controlling site erosion and preventing offsite sedimentation and sediments reaching MS4 and regulated receiving waters. Following an approved plan and properly installing and maintaining BMP measures are a minimum. The responsible party must ensure that additional BMP measures shall be installed to correct problems and may have to correct any adverse environmental impacts. At a minimum, inspectors must be able to:

- Certify all erosion and sediment control BMP measures in the approved plan have been properly installed and maintained.
- Certify that erosion is being controlled.
- Certify that offsite sedimentation is being prevented.
- Certify that no sedimentation and turbid water is in MS4 and receiving waters.
- Contact the responsible party if deficiencies observed. The responsible party shall bring all deficiencies into compliance within a timely manner which sets forth by the MS4 Permit and the SOP.
- Certify the construction site

3.4 Inspection Procedures

At a minimum, the following considerations shall be addressed for each site inspection, where applicable:

- Ensure the construction site has an approved permit and approved plans issued by City of Bessemer

- Ensure the on-site rain gage is properly installed and the precipitation data has been properly recorded
- Ensure all inspection and maintenance procedures of the site specific BMP measures are available at the site
- Ensure all inspection and maintenance reports are available at the site
- Ensure all BMP measures noted on the approved plans are properly installed and maintained
- Take photos of the overall construction site, photos of deficiency BMP measures, photos of areas where are out of compliance, and etc.
- Issue warnings and request the implementation actions from the responsible party
- Follow up the previous inspection report
- Order to stop any construction activities if sedimentation or turbid water is observed offsite
- Document all findings in the inspection report
- Perform the **Final Inspection**[1] and certify the construction site has been in compliance with the **Final Stabilization**[2]
- Conduct annual **post-construction** inspections to ensure that stormwater design standards and implementation are being met per MS4 requirements

Footnotes:

[1] **Final Inspection**: The registrant is responsible to contact the City of Bessemer in advance to schedule a final stormwater inspection prior to issuance the Certificate of Occupancy (CO)

[2] **Final Stabilization**: It means the application and establishment of the permanent ground cover (vegetative, pavements of erosion resistant hard or soft material or impervious structures) planned for the site to permanently eliminate soil erosion to the maximum extent practicable. Established vegetation will be considered final if 100% of the soil surface is uniformly covered in permanent vegetation with a density of 85% or greater. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; an agricultural or a perennial crop of vegetation appropriate for the region. Final stabilization applies to each phase of construction. (The statement of the final stabilization was taken from ADEM General NPDES Permit)

4. Enforcement Procedures

1. Violations discovered during site inspections shall be duly noted. Application of levels of enforcement are as follows:

   First Offense: Notification of Violation -- written notification of violation

   Second Offense: Compliance Order -- will require specific corrective actions be taken

   Third Offense: Cease and Desist Order

2. Documentation is critical to effective enforcement. All enforcement actions shall be recorded in the respective department database for tracking purpose.

3. It is the responsibility of the inspector to maintain time limits, specified by enforcement levels, and re-inspect on appropriate dates. Timely follow-up inspections are critical.

5. Documentation

Documentation is critical with regards in compliance with the City of Bessemer MS4 program requirements. The following procedures shall be followed to ensure proper documentation of inspections and enforcement is occurring.

1. Site BMP inspection reports shall be reviewed and signed by the inspector's supervisor for completeness and correctness of inspection.

2. Once the site BMP inspection report is approved by the inspector's supervisor, a hard copy of the site BMP inspection report and any formal written enforcement shall be mailed to the registrant. An electronic copy (such as PDF files) of the document shall be sent by email to the registrant also.

3. Once the site BMP inspection report is approved by the inspector's supervisor, both the hard copy and the electronic copy of the site BMP inspection report, related site inspection photos and any formal written enforcement shall be recorded in the respective department database.

4. The post-construction stormwater management documentation required by the City of Bessemer MS4 program and prepared by the registrant shall be recorded in the respective department database. The annual inspection report prepared by the land owner or the tenant shall be properly recorded in the respective department database

City of Bessemer, Alabama
Application for Land Disturbing Activity
BMP Plan Review Checklist

Project Name: _____ Permit Number: _____

Registrant: _____ Approval Date: _____

Cell Number: _____ Receiving Stream: _____

Email Address: _____ Total Site Area (Ac): _____

Site Address: _____ Disturbed Area (Ac): _____

(Reference City of Bessemer Minimum Plan Requirements for Commercial/Industrial Site Plans for more details)

_____ If total disturbing areas are greater than 1 acre, ADEM NPDES permit is required?

_____ Is the site in the ***Priority Construction Sites*** (per ADEM)?

_____ Any existing outstanding drainage issues at the property or downstream from the property?

_____ Boundary/topographic survey or existing conditions maps (signed and sealed) provided?

_____ Proposed grading and storm drainage plans (signed and sealed) provided?

_____ Erosion and sedimentation control BMP plans (signed and sealed) provided?

_____ Project specific BMP details provided?

_____ Each BMP inspection and maintenance procedure provided?

_____ Discharge locations (surface runoff leaving from the site to streams or storm features)?

_____ Sequence of construction notes?

_____ Design calculations of sediment basins and/or sediment traps?

_____ Design calculations of outlet control structures and overflow spillways?

_____ Summary of pre- vs. post-conditions for 2-, 5-, 10-, and 25-storm events at each sub-basin?

_____ Show surface runoff flowing directions?

_____ Any potential un-controlled surface runoff leaving from the property?

_____ Statements/notes to address

- Vehicle tracks on public streets?
- Facility ID & permit to be posted at the construction exit?
- On-site rain gage and record?
- The approved plans to be at the site all time?
- All inspection reports and photo documents to be at the site all time?
- The registrant to contact City of Bessemer to perform the Final Inspection after all BMPs being removed from the site and all permanent vegetation being stabilized?
-
-

_____ The post-construction storm water management by the MS4 permit requirements,

- require to design and implement systems to reduce the discharge of pollutants...
- require to meet pre- vs. post-condition hydrology of the site. Also a 1.1 inch rainfall over 24-hour period preceded by 72-hour antecedent dry period...
- encourage to incorporate the use of low impact development (LID)
- require to submit a post-construction BMP plan...
- require the submittal of "as-built" certification within 120 days of completion of project
- require to perform annual post-construction inspections and submit annual reports
- require and/or perform adequate long-term operation and maintenance of post-construction BMPs...

_____ Additional comments:

City of Bessemer - Construction Site Inspection Report

Registrant:_____ Permit Number: _____

Address of Construction Site:_____ Receiving Stream:_____

ADEM Permit No. (If Applicable):_____ Date/Time of Inspection:_____

Size of site (disturbed): _____ **First / Monthly / Final Inspection**

	Yes	No	N/A	Comments	Photographs
Records and Postings					
Permit On-Site					
Facility ID Posted					
Rain Gage On-Site (ADEM Permitted Sites)					
CBMPP On-Site					
Inspection Reports (Prepared by the site operator's QCP)					
Rainfall Data					
On-Site Observations					
On-Site Erosion					
On-Site Sedimentation					
Silt Fence					
Construction Entrance					
Straw Bales					
Seeding/Landscaping					
Sediment Traps					
Inlet Protection					
Outlet Protection					
Proper Good Housekeeping Keeping					
Solid Waste Handling					
Fuel Handling					
Spills					
Contaminated Soils					
Trash/Litter					
Construction Debris					
Proper Off-Site Observations					
Off-Site Erosion					
Off-Site Sediment					
In Stream Turbidity (NTU)					
Off-Site Vehicle Track.					
Trash/Litter					
Oily Sheen in Stream					
Construction Debris					

City of Bessemer - Construction Site Inspection Report

Comments			
Violation (Yes/No)	**Date(s):**		
□ First Offense □ Second Offense □ Third Offense □ Fourth Offense	□ Verbal Notice of Violation □ Administrative Action □ Other (describe)	□ Written Notice of Violation □ Civil Penalty	

Additional notes to file:_____

_____

_____

_____

_____

Follow-up with Complainant: _____

_____

_____

City Inspector Name:_____

Signature:_____

Date:_____

APPENDIX I:
City of Bessemer
Construction Site
Inspection Report

City of Bessemer - Construction Site Inspection Report

Registrant:_____ Permit Number: _____

Address of Construction Site:_____ Receiving Stream:_____

ADEM Permit No. (If Applicable):_____ Date/Time of Inspection:_____

Size of site (disturbed): _____ **First / Monthly / Final Inspection**

	Yes	No	N/A	Comments	Photographs
Records and Postings					
Permit On-Site					
Facility ID Posted					
Rain Gage On-Site (ADEM Permitted Sites)					
CBMPP On-Site					
Inspection Reports (prepared by the site operator's QCP)					
Rainfall Data					
On-Site Observations					
On-Site Erosion					
On-Site Sedimentation					
Silt Fence					
Construction Entrance					
Straw Bales					
Seeding/Landscaping					
Sediment Traps					
Inlet Protection					
Outlet Protection					
Proper Good Housekeeping Keeping					
Solid Waste Handling					
Fuel Handling					
Spills					
Contaminated Soils					
Trash/Litter					
Construction Debris					
Proper Off-Site Observations					
Off-Site Erosion					
Off-Site Sediment					
In Stream Turbidity (NTU)					
Off-Site Vehicle Track.					
Trash/Litter					
Oily Sheen in Stream					
Construction Debris					

City of Bessemer - Construction Site Inspection Report

Comments			
Violation(Yes/No)	**Date(s):**		
□ First Offense □ Second Offense □ Third Offense □ Fourth Offense	□ Verbal Notice of Violation □ Administrative Action □ Other (describe)	□ Written Notice of Violation □ Civil Penalty	

Additional notes to file:_____

_____

_____

_____

_____

Follow-up with Complainant: _____

_____

_____

City Inspector Name:_____

Signature:_____

Date:_____

APPENDIX J:
City of Bessemer
Post-Construction BMP
Inspection Report

City of Bessemer – Post-Construction BMP Inspection Report

Registrant:_____ Permit Number: _____

Address of Construction Site:_____ Inspection Date:_____

	Yes	No	N/A	Comments	Photographs
Post-Construction BMP Observations					
Inspection Record					
Post-Construction Plans					
Post-Construction As-built					
On-Site Erosion					
On-Site Sedimentation					
BMP#1 Maintenance					
BMP#2 Maintenance					
BMP#3 Maintenance					
BMP#4 Maintenance					

Comments	

Violation (Yes/No)	**Date(s):**	
□ First Offense	□ Verbal Notice of Violation	□ Written Notice of Violation
□ Second Offense	□ Administrative Action	□ Civil Penalty
□ Third Offense	□ Other (describe)	

Additional notes to file:_____

_____

_____

Follow-up with Complainant: _____

_____

_____

City Inspector Name:_____ Reviewing Supervisor Name:_____

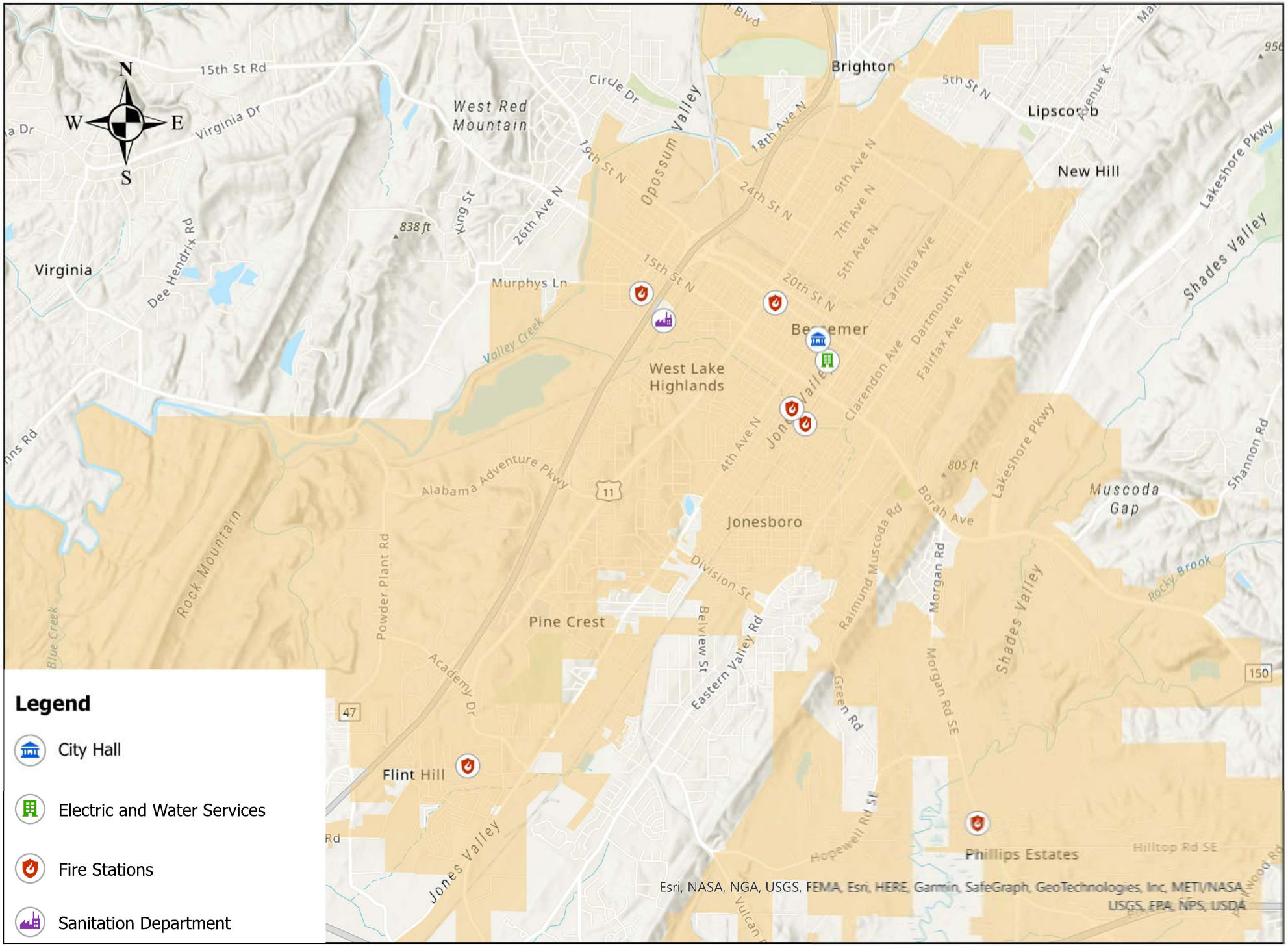
Signature:_____ Signature:_____

Date:_____ Date:_____

APPENDIX K:

Map of Municipal Property Locations
Annual Inspection Checklist

Bessemer Municipal Properties



Legend

- City Hall
- Electric and Water Services
- Fire Stations
- Sanitation Department

City of Bessemer
Facility Stormwater Inspection Report

Facility	Address	Potential to Discharge Pollutants from Stormwater Runoff?	If yes, Annual Inspection Complete?
Public Works	1205 15th Avenue North		
Fire Station – 1	800 18th Street North		
Fire Station – 2	1124 Hall Avenue		
Fire Station – 3	2316 Morgan Road SE		
Fire Station – 4	491 Flint Hill Road		
Fire Station – 5	1709 Long 12th Street North		
Electric & Water Service	1101 3rd Avenue North		
City Hall	1700 3rd Avenue North		
Fleet Maintenance Shop	1125 15th Avenue North		

APPENDIX L:
City of Bessemer Public Works
Municipal Good Housekeeping Program

CITY OF BESSEMER

THE MARVEL CITY

1700 Third Avenue North ● Bessemer ● AL 35020

Public Works Municipal Good Housekeeping program

Revision:
June 2023

Prepared by:
Freddie Freeman
Stormwater Specialist
City of Bessemer
And
Ronald R. Gilbert, P.E.
Bessemer City Engineer
And
EEFS Company, PC

Signatory and Certification:

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

Kenneth E. Gulley
Mayor, City of Bessemer

8/21/2023
Date

1700 Third Avenue North
Bessemer, AL 35020

(205) 424-4060

Table of Contents

1. LANDSCAPING AND LAWN CARE

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

1.1 Identify Impacts to/on Stormwater / Receiving Waters (Surface Waters)

- Nutrient loading (nitrogen and phosphorous) from fertilizer runoff can cause excessive aquatic plant growth

1.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Biochemical oxygen demand

1.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Purchase only enough lawn care products necessary for one year – store properly to avoid waste generation (spills, leaks)
- Use slow release or naturally derived (organic) fertilizers
- Train employees in the proper application of lawn care products
- Develop zero input/low input lawns
- Consider alternative landscape techniques (i.e. naturescaping, xeriscaping)
- Plant trees away from sewer lines or other underground utilities
- Use drip irrigation techniques for landscaping

1.4 Inspection Procedures

- Routinely monitor lawns to identify problems during their early stages
- Identify nutrient/water needs of plants, inspect for problems by testing soil

1.5 Maintenance Procedures

- Minimize/eliminate fertilizer application
- Leave grass clippings on lawn, or mulch clippings into lawn

- Limit watering as necessary to supplement rainwater (1 inch / week is adequate)
- Mow with sharpened blades set high (3 inches) – remove only the top 1/3 of the leaves
- Water plants in the early A.M.

SOP 1.1 - LANDSCAPING AND LAWN CARE

Standard Operating Procedure for Landscaping and Lawn Care

Purpose: To prevent contamination of storm water by minimizing contact with fertilizer and by using innovative landscaping techniques.

Always:

- Plant vegetation that needs minimal amounts of care (i.e. water, fertilizer)
- Implement landscaping techniques that minimize water usage
- Water just enough to supplement rainfall – use drip irrigation techniques
- Apply fertilizers based on a soil testing program, soil type, turf function, and assessment by qualified personnel
- Use compost or natural (organic) fertilizers

Whenever possible:

- Avoid fertilizing during a draught or when the soil is dry
- Apply fertilizers during period of maximum plant uptake (usually fall and spring)

Never:

- Never fertilize before a heavy rain
- Never apply phosphorous fertilizer on soil surface
- Never deposit fertilizer in the water, onto the street or into storm drains
- Never apply fertilizer to frozen ground

CHECKLIST 1.1 - LANDSCAPING AND LAWN CARE INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Grass / Plant Condition	Wilted / Brown Leaves	Yes No	Add Water
General Area	Barren Soils	Yes No	Re-seed, cover with hay or burlap to prevent runoff

2. SPILL RESPONSE AND PREVENTION

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

2.1 Identify Materials That Impact Stormwater/Receiving Waters (Surface Waters)

- Liquids associated with vehicle/equipment maintenance products (oils, fuels, antifreeze, etc.)
- Rock salt
- Chemicals (fertilizers, pesticides)

2.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity
- Biochemical oxygen demand

2.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Keep all materials properly stored in closed, labeled containment systems
- Use secondary containment systems where appropriate
- Obtain spill recovery materials for immediate response to a spill

2.4 Inspection Procedures

- Inspect secondary containment systems, oil/water separators periodically
- Inspect containers for leaks, areas near storm receiver inlets and outlets, floor drains for indications of spills

2.5 Maintenance Procedures

- Use reusable spill cleanup materials (sponge mops, oil absorbent pads, etc.)
- Pump out oil water separators as needed
- Protect drains with oil absorbent materials
- Clean out receivers on regular schedule
- Remove spilled salt from salt loading area

2.6 Advisory

- Refer to ADEM Water Division Industrial Section for Secondary Containment Guidelines
- Report petroleum spills to Bessemer Fire Department
- Report petroleum spills (as necessary) to ADEM Birmingham Branch at 205-942-6168 or Alabama Emergency Management Agency State Warning Point at 1-800-843-0699 (24-Hours per day)
- Refer to ADEM website for guidelines

SOP 2.1 – SPILL PREVENTION

Standard Operating Procedure for Spill Prevention

Purpose: To prevent contamination of storm water by using proper washing techniques, proper washing locations, and proper disposal of waste water

Always:

- Monitor equipment storage areas, material storage areas, and waste storage areas, checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted
- Remove spilled sand from the sand loading area and use or properly store
- Document any and all inspection activities on the proper forms

Whenever possible:

- Inspect secondary containment systems (i.e. oil, fuel storage tanks) as necessary, and empty them as necessary
- Monitor oil/water separators and their downstream discharges. An oily discharge indicates that the unit is either not functioning properly or needs to be “pump out”
- Install oil absorbent materials in floor drains and/or catch basins, and inspect, remove/replace as appropriate
- Monitor floor drains and storm receiver inlets and outlets for excessive amounts of containments, and clean out as necessary

SOP 2.2 – SPILL CLEANUP

Standard Operating Procedure for Spill Cleanup

Purpose: To protect storm water by educating employees on proper spill cleanup procedures, state reporting requirements and preventative actions

Always:

- Stop the source of the spill
- Contain any liquids
- Cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads (do not use straw)
- Dispose of used absorbent material properly
- Use water only when necessary and minimize use
- Train employees in spill response procedures and equipment
- Keep a spill kit in areas where petroleum or hazardous materials are stored
- Deploy containment booms if spill potentially reach a storm drain or waterbody
- Position pans to contain drips from equipment or vehicles until they can be repaired

Whenever possible:

- Seal the floor with paint to prevent absorption of fluids into concrete
- Install low-level or low-pressure alarms and/or cut-off systems on hydraulic equipment

Never:

- Never wash a spill into the storm drain or a waterbody
- Never leave a spill without cleaning it up

CHECKLIST 2.1 – SPILL RESPONSE AND PREVENTION INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Product / Waste Storage Areas	Uncovered/ Deteriorating Containers Materials spilled, leaks	Yes No	Cover / Replace Clean Up
Equipment Storage Areas	Fluid Leaks	Yes No	Clean Up
Secondary Containment Systems	Structural Deterioration Leakage of Fluids	Yes No	Repair / Replace Clean Up
Oil/ Water Separators	Excessive Amounts of Containments	Yes No	Pump Out
Floor Drains, Storm Receiver Inlets and Outlets	Accumulation of Contaminants	Yes No	Clean Up / Remove

3. PEST CONTROL

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

3.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Runoff of pesticides may harm aquatic life, may contaminate water

3.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity to aquatic plants and animals

3.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Purchase only enough pesticides necessary for one year – store properly to avoid waste generation (spills, leaks, product deterioration)
- Minimize/eliminate pesticides application, use lowest toxicity pesticides
- Do not apply pesticides immediately prior to or during rain events
- Ensure that employees are properly trained and certified in pesticide application techniques and safety
- Develop zero input, low input lawns
- Eliminate food, water, and shelter for pests
- Adopt integrated pest management (IPM) techniques
- Adopt alternatives to pesticides options (I.e. use mechanical traps, physical methods for removal, or biological controls)

3.4 Inspection Procedures

- Identify pests – are levels acceptable or must action be taken to control pests?
- Inspect pesticide inventory – properly dispose of out-of-date pesticide materials

3.5 Maintenance Procedures

- Inspect pest traps (i.e. bait boxes) regularly – remove (and properly dispose of) dead pests
- Block/eliminate access to buildings/structures for pests

- Remove pests (insects) by hand

3.6 Advisory

- Abide by ADEM regulations pertaining to this topic
- Refer to ADEM website for guidelines

CHECKLIST 3.1 – PEST CONTROL INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Pesticide Storage Areas	Excessive Amounts of Pesticides Spilled Pesticides Empty Containers No Security or Access Control	Yes No	Reduce Volumes Implement IPM Clean Up Properly Dispose Install
Application Equipment	Improper Amounts of Pesticides Applied	Yes No	Properly Calibrate
Floor	Drain System Not Curbed Around Perimeter No Impermeable Surface	Yes No	Eliminate Install Curbing Install Impermeable Surface

4. VEHICLE / EQUIPMENT MAINTENANCE

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

4.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Trace amounts of metals/hydrocarbons are found in materials (i.e. fuels, antifreeze, batteries, motor oils, grease, parts cleaning solvents) that are typically used in maintenance operations

4.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Toxicity
- Biochemical oxygen demand

4.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Conduct maintenance work indoors – if work must be performed outside, guard against spillage of materials that could discharge to storm receivers
- Seal floor drains that discharge directly to the environment, if possible
- Initiate single purpose use of vehicle bays – dedicate one (or more) bays that have no (or sealed) floor drains for repairs/maintenance
- Clean up spilled materials immediately, using “dry” methods
- Install pretreatment systems (oil/water separators) where necessary in sewer lines to capture contaminants (oil, grit), and maintain as needed
- Never leave vehicles unattended while refueling
- Identify appropriate recycling/disposal options for wastes

4.4 Inspection Procedures

- Inspect (for maintenance purposes) floor drain systems, oil/water separators
- Monitor “parked” vehicles/equipment for leaks

4.5 Maintenance Procedures

- Maintain a clean work area – remove contaminants from floors, drains, catch basins, using “dry” methods
- Use non-hazardous cleaners. Use non-chlorinated solvents instead of chlorinated solvents
- Repair or replace any leaking containers
- Use steam cleaning/pressure washing instead of solvent for parts cleaning
- Store waste fluids in properly capped, labeled storage containers
- Store batteries in leak-proof, compatible (i.e. non-reactive) containers
- Rinse grass from lawn care equipment on permeable (grassed) areas
- Protect against pollution if outside maintenance is necessary (cover storm receivers, use secondary containment vessels, etc.)

4.6 Advisory

- Refer to ADEM Water Division Industrial Section for Secondary Containment Guidelines
- Report petroleum spills to Bessemer Fire Department
- Report petroleum spills (as necessary) to ADEM Birmingham Branch at 205-942-6168 or Alabama Emergency Management Agency State Warning Point at 1-800-843-0699 (24-Hours per day)
- Refer to ADEM website for guidelines

SOP 4.1 – VEHICLE AND EQUIPMENT FUELING

Standard Operating Procedure for Vehicle and Equipment Fueling

Purpose: To prevent storm water contamination originating from vehicle and equipment fueling

Always:

- Fuel carefully to minimize drips to the ground surface
- Maintain clean fuel dispensing areas using dry cleanup methods
- Utilize fueling safeguards. Clearly label and tag all valves to reduce human error
- Train employees and subcontractors on proper fueling methods and spill cleanup techniques
- Maintain fuel storage tanks in accordance with local, state and federal laws
- Have absorbent spill cleanup kits and materials available at fueling areas
- Immediately cleanup spills and properly dispose of contaminated soil and cleanup materials

Whenever possible:

- Install a canopy or roof over aboveground storage tanks
- Regularly inspect fueling equipment for corrosion and structural failure, cracks in foundations, and physical damage to container systems
- Use designated fueling areas built upon a level impervious surface (hard cement is best). If paved with asphalt, add a protective coating to create an impervious surface
- Design fueling areas to minimize storm water exposure. Prevent run-on and ponding of water, and use secondary containment systems
- Protect storm drains from fueling areas using berms and dikes
- Use drip pans or absorbent pads during fueling to collect leaks
- Add automatic shutoff mechanisms and vapor recovery nozzles to fueling equipment
- Install protective guards around fueling equipment, tanks, and piping to prevent collisions

Never:

- Never leave vehicles/equipment unattended while fueling
- “Top off” fuel tanks. Post signs to remind employees
- Hose down or bury a fuel spill

SOP 4.2 – VEHICLE AND EQUIPMENT STORAGE

Standard Operating Procedure for Vehicle and Equipment Storage

Purpose: To protect storm water from petroleum products that may drip or leak from vehicles and equipment being stored or from dirt and sediment that accumulate in the storage areas

Always:

- Inspect parking areas for stain/leaks on a schedule established by the appropriate personnel
- Use drip pans for vehicles that drip a lot (provide a labeled location to empty and store drip pans)
- Address a known leak or drip as soon as possible

Whenever possible:

- Store vehicle inside
- Conduct maintenance work indoors – dedicate specific vehicle bays, seal floor drain systems
- If work is performed outside, protect storm water drainage conveyances from spills
- Store vehicles on paved areas if you can street sweep regularly to remove drips /leaks /dirt
- Maintain vehicles to prevent leaks from occurring
- Perform a pre-trip inspection of vehicles

Never:

- Never store leaking vehicles over a storm drain

CHECKLIST 4.1 – VEHICLE AND EQUIPMENT MAINTENANCE / STORAGE AREA INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Truck / Equipment	Leaks / Spills	Yes No	Clean Spill Repair Leak Capture Fluids in Drip Pans
Salt / Sand Spreader	Improper Amounts of Product Applied	Yes No	Calibrate
Lawn Care Equipment	Improper Operation	Yes No	Inspect / Repair

5. VEHICLE / EQUIPMENT WASHING

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

5.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Nutrients (biodegradable soaps)
- Metals
- Petroleum based wastes (organic pollutants)

5.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Hydraulic loading
- Toxicity
- Biochemical oxygen demand from nutrient sources

5.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Initiate single purpose use of vehicle bays – dedicate only one bay for washing (with floor drain system)
- Perform cleaning with pressurized cold water, without the use of soaps, if wastewaters will flow to a storm sewer system
- Use minimal amounts of biodegradable soaps only if wastewaters will discharge to a sanitary sewer system
- Rinse with hoses that are equipped with automatic shutoff devices and spray nozzles
- Steam clean (without soap) where wastes can be captured for proper disposal (i.e. oil/water separator)

5.4 Inspection Procedures

- Inspect floor drain systems regularly – use only those that discharge to a sanitary sewer, identify the need for cleaning of catch basins, oil/water separators

5.5 Maintenance Procedures

- Map storm drain locations accurately to avoid illegal discharges
- Perform steam cleaning or pressure washing where wastes can be captured for proper disposal
- Take precautions against excess use of/spillage of detergents

5.6 Advisory

- Require all facilities to connect floor drain systems to sanitary sewers (if available)

SOP 5.1 – VEHICLE AND EQUIPMENT STORAGE

Standard Operating Procedure for Vehicle and Equipment Washing

Purpose: To protect storm water from petroleum products that may drip or leak from vehicles and equipment being stored or from dirt and sediment that accumulate in the storage areas

Always:

- Rinse grass from lawn care equipment over permeable (vegetated) areas
- Wash vehicles and equipment in a designated area
- Discharge all wash water containing degreasers, acids, bases, and/or metal brighteners to a vegetated buffer

Whenever possible:

- Use a biodegradable, phosphate free soap
- Use a commercial car wash for light duty vehicles
- Wash cars on gravel, grass, or other permeable surfaces
- Educate personnel on proper washing practices
- Maintain vehicles and equipment to prevent leaks/drips, which would more easily enter wash water
- Obtain and use drain guards (filter inserts) to catch sediments, petroleum products, etc. that might enter the storm drains as a result of vehicle washing
- Minimize water and soap use when rinsing or washing vehicles

Never:

- Never perform engine washing outside or over a storm drain
- Never wash vehicles over a storm drain or near drinking water wells

CHECKLIST 5.1 – VEHICLE AND EQUIPMENT WASHING AREA INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Designated "Wash Only" Area	No impermeable pad with wastewater collection system	Yes No	Designate / Construct Area
Wastewater Discharge Location	Does not Flow to Either a Holding Tank or Sanitary Sewers	Yes No	Properly Relocate Discharge
Washing/Degreasing Compounds	Solvent Based	Yes No	Change to Biodegradable Products
Floor Drain Sump	Nonexistent	Yes No	Install and Maintain Sump Remove Debris
Oil/Water Separator	Excessive Oils/Sludges	Yes No	Clean Out Contaminants
Catch Basin	Nonexistent Accumulation of Contaminants	Yes No	Install and Maintain Catch Basin

6. HAZARDOUS AND WASTE MATERIALS MANAGEMENT

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

6.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Lube oils
- Coatings and their compatible solvents (paints, thinners, etc.)
- Anti-freeze
- Cleaning agents
- Fuels (gas, diesel, kerosene)

6.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Particulate loading
- Toxicity to aquatic plants and wildlife
- Biochemical oxygen demand

6.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Ensure that all materials are stored in closed, labeled containers – if stored outside, drums should be placed on pallets, away from storm receivers – inside storage areas should be located away from floor drains
- Eliminate floor drain systems that discharge to storm drains, if possible
- Use a pretreatment system to remove contaminants prior to discharge
- Reduce stock of materials “on hand” – use “first in/first out” management technique
- Use the least toxic material (i.e. nonhazardous) to perform the work
- Install / use secondary containment devices where appropriate
- Eliminate wastes by reincorporating coating / solvent mixtures into the original coating material for reuse
- Recycle materials if possible, or ensure proper disposal of wastes

6.4 Inspection Procedures

- Physical on-site verification of sealed floor drains (or redirected to sanitary sewer)
- Regular inspection of material storage areas (inside and outside)
- Regular inspection and cleaning of oil/water separators by qualified personnel
- Inspect Stormwater discharge locations regularly (for contaminants, soil staining, plugged discharge lines)

6.5 Maintenance Procedures

- Repair or replace any leaking/defective containers, and replace labels as necessary
- Maintain caps and/or covers on containers
- Maintain aisle space for inspection of products/wastes

6.6 Advisory

- Abide by ADEM regulations pertaining to this topic
- Refer to ADEM website for guidelines

CHECKLIST 6.1 – HAZARDOUS AND WASTE MATERIALS MANAGEMENT INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Outside Storage Area	Weathering	Yes No	Protect from Weathering – Store on Pallets, Cover
Salt Piles Soil Staging Areas	Salt Staining Silt Runoff	Yes No	Cover with Traps Cover with Traps, Install Physical Barriers
Above Ground Storage Tanks	Deterioration	Yes No	Inspect /Repair /Maintain, Install Secondary Containment
Inside Storage Areas	Potential for Discharges	Yes No	Seal Floor Drains, Install Secondary Containment
Drums, Other Containers	Deterioration Uncovered	Yes No	Repair /Replace Cover /Cap

7. CATCH BASIN AND STORM DRAIN SYSTEM CLEANING

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

7.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Catch Basins capture grit and debris, which, if not removed in a timely fashion, can discharge toxic and biological pollutants during rain and/or snow melt events
- Storm drainage systems, while not designed for capture of solid materials can perform in the same manner with similar results
- Storm ditches, if stripped of vegetation during cleaning, can result in silt deposition in receiving waters

7.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Sediment loading
- Toxicity – heavy metals, organic compounds, etc.
- Biochemical oxygen demand

7.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Storm drain receivers and (below grade) storm drain systems
  - Parking lot receivers
  - Open ditches
- Catch basins and floor drain systems inside of buildings should be either:
  - Sealed to prevent discharge
  - “Permitted” by local, State, and Federal laws
  - Discharged to sanitary sewers
- Contaminated wastewaters should not be discharged to a catch basin /street receiver /ditch
- Increase frequency of cleaning, as necessary
- Repair /replace storm drain receiver and catch basin receiver grates as necessary

7.4 Inspection Procedures

- Physical inspection – prioritizes storm drain systems and catch basins – catch basins on steep grades may need more frequent cleaning
- Clean catch basin when depth of deposits are >1/3 the depth from the bottom of the basin to the invert of the lowest pipe /opening into or out of basin – Institute temporary street parking bans to facilitate access to catch basins
- Ditch inspections – identify problems (i.e. erosion, sedimentation, vegetation overgrown, etc.)
- Storm event inspection – identify pollution problems (i.e. sediments) to determine the need for additional protective measures
- Post storm event inspection – identify problem (i.e. blockages)

7.5 Maintenance Procedures

- Catch basins /storm sewer pipe – cleaning in spring to remove sand /grit /salt from winter road maintenance, cleaning in fall to remove leaves /silt /debris
- Established ditch:
    - Maintain proper slope
    - Maintain vegetation by cutting (to capture sediment) – do not allow vegetation to grow to a height that would impair sight lines of drivers of motor vehicles
    - Remove obstacles /debris – (i.e. trash, tree branches, brush, cut vegetation)
    - Excavation /ditch scraping – if necessary, use devices (i.e. hay bales, silt fence) to capture sediment prior to storm water discharge into receiving waters, reseed ditch
- New installation – capture particulate matter – installs sediment basins /other devices in ditch
- Proper disposal of debris

7.6 Advisory

- Abide by ADEM regulations pertaining to this topic
- Refer to ADEM website for guidelines

SOP 7.1 – CATH BASIN AND STORM DRAIN SYSTEM CLEANING

Standard Operating Procedure for Catch Basin and Storm Drain System Cleaning

Purpose: To protect storm water by maintaining the ability of catch basins to trap sediments, organic matter, and litter. This reduces clogging in the storm drain system as well as the transport of sediments and pollutants into receiving waterbodies.

Always:

- Inspect catch basins for structural integrity and evidence of illicit discharges during cleaning
- Conduct a chemical analysis if sediment is suspected of contamination to determine if the recovered materials meet the ADEM criteria for hazardous waste
- Dispose of catch basin residues properly
- When cleaning ditches, remove obstacles /debris
- Identify excessive siltation in ditch – may indicate the need to re-grade the ditch
- During ditch scraping, maintain vegetation (downstream in ditch) to capture sediment

Whenever possible:

- Inspect each catch basin at least annually, during catch basin cleaning
- Create a checklist for catch basins to help classify which catch basins require maintenance and how often
- Discharge fluids collected during catch basin cleaning to a sanitary sewer system
- During cleaning identify the need for repair of structure (also pertains to manholes, pipes)
- Clean catch basins when debris has filled it 1/3 of the way of the outlet
- Cut /remove vegetation (as opposed to ditch scraping) to allow capture of sediment

SOP 7.2 – CATH BASIN REPAIR

Standard Operating Procedure for Catch Basin Repair

Purpose: To protect storm water by inspecting, testing, and replacing or repairing equipment on a regular basis to prevent a failure of storm water structures

Always:

- Practice maintenance and inspect on a regular schedule for cracks, leaks, and other conditions that could cause breakdowns in the system (this can be done during the cleaning process)
- Repair defective equipment or structures identified during an inspection as soon as possible
- Document inspections and repairs and maintain complete records in a record keeping system
- Educate personnel on preventive maintenance inspections

Whenever possible:

- Research and implement new technology that will improve the overall performance of the catch basin

Never:

- Never allow defective equipment or structures to go unrepaired

CHECKLIST 7.1 – CATCH BASIN AND STORM DRAIN SYSTEM CLEANING INSPECTION CHECKLIST

Road Name _____ Date of Inspection _____

Road Number _____ Name of Inspector _____

From: _____ To: _____

Road Section

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action	Location (House number, Distance from Intersection)
Catch Basin /Drop Inlet	Deterioration of Structure	Yes No	Repair Structure or Grate Replace Structure or Grate	
	Clogged Inlets During or After Storm Event	Yes No	Clean Grate / Inlet	
	Deposits in Structure	Yes No	Cleanout Structure	
Storm Manhole	Deterioration of Structure Deposits in Structure	Yes No	Repair Structure or Cover Replace Structure or Cover Cleanout Structure	
Storm Sewer Piping	Clogged Pipe	Yes No	Cleanout Pipe	
	Deteriorated Pipe	Yes No	Replace Pipe	
Ditches (Pollutants)	Excessive Vegetation	Yes No	Mow Vegetation Schedule Ditch Cleaning	
	Debris (Branches, Litter, Garbage, etc.)	Yes No	Cleanout Ditch	
	Excessive Siltation	Yes No	Cleanout & Regrade Ditch	
Roadside /Cross Culverts	Clogged Pipe	Yes No	Cleanout Review Size & Replace Cleanout & Regrade Ditch	
	Deteriorated Pipe	Yes No	Replace Pipe Line Pipe	
Sediment Basin	Excessive Vegetation	Yes No	Mow	
	Excessive Sediment Deposits	Yes No	Cleanout Basin	
Outfall	Pollutants	Yes No	Rip-Rap	

8. STREET CLEANING AND MAINTENANCE

POLLUTION PREVENTION / GOOD HOUSEKEEPING PRACTICES:

8.1 Identify Impacts To/On Stormwater/Receiving Waters (Surface Waters)

- Poorly maintained streets allow for a “build up” of trash, grit, and debris, from which sediment and toxic/biological pollutants can be “washed out” during rain and/or snow melt events
- Street repair /paving processes use materials that can contaminate receiving waters if they interact with storm water

8.2 Problem Evaluation: Assess Impact on Receiving Waters, Prioritize

- Particulate matter – can cause sediment loading
- Toxicity to aquatic plants and wildlife
- Biochemical oxygen demand

8.3 Identify (and Choose Appropriate) Solutions (BMPs)

- Street sweeping /vacuuming – at regular intervals, and “as needed”
- Perform operations such as paving in dry weather only
- Period of road reconstruction, consider /evaluate the use of “shouldered roads” instead of “curbed roads”
- Maintain roadside vegetation; select plants /trees that can withstand the action of road salt which direct runoff to these areas

8.4 Inspection Procedures

- Inspect streets, and plan (as needed) for maintenance /repairs
- Prioritize – some streets (i.e. those with high traffic flows, on flat grades, or with many trees) may need more frequent cleaning

8.5 Maintenance Procedures

- Spring sweeping /vacuuming – remove salt /sand residues
- Fall sweeping, collection of leaves at appropriate time intervals
- Dry sweep or vacuum streets during dry weather
- Initiate temporary street by street parking bans to allow access for cleaning
- Maintain equipment – check /repair fluid leaks
- Stage road operations and maintenance activity (patching, pothole repair) to reduce spillage of materials
- Cover catch basins and manholes during activity

8.6 Advisory

- Abide by ADEM regulations pertaining to this topic
- Refer to ADEM website for guidelines

SOP 8.1 – STREET SWEEPING

Standard Operating Procedure for Street Sweeping

Purpose: To remove sediment, debris and other pollutants from streets, parking areas, and paved surface through regular, properly timed sweeping schedules

Always:

- Dispose of sweeping residues properly
- Sweep in a pattern that prevents materials from being pushed into storm drains /catch basin inlets
- Prioritize street cleaning and perform maintenance routinely
- Sweep sand immediately after snow and ice events

Whenever possible:

- Locate storage and disposal areas and manage street sweeping waste so that wastes cannot be transported into storm systems, waterbodies or wetlands

Never:

- Never store street sweeping residues in areas where storm water could transport fines to the storm sewer system or waterbodies

SOP 8.2 – ROAD MAINTENANCE – SAND STORAGE

Standard Operating Procedure for Road Maintenance – Sand Storage

Purpose: To protect storm water by properly storing deicing materials. Sand used during winter can be transported by runoff into the storm drain system and eventually into waterbodies if not stored properly

Always:

- Cover sand and sand piles that are situated on impervious surfaces
- Store sand in a properly sized covered structure
- Unload sand deliveries directly into storage area or move to the storage area immediately
- Cleanup sand immediately after storm events to minimize material reaching the storm sewer system and the waterbodies

Whenever possible:

- Control spread patterns to concentrate the material where it is most effective
- Use diversion berms to minimize run-on to storage areas

Never:

- Never dispose of wash water from sanding trucks into the storm drain system, a waterbody or septic system drain fields

SOP 8.3 – ROADWAY AND BRIDGE MAINTENANCE

Standard Operating Procedure for Roadway and Bridge Maintenance

Purpose: To prevent contamination of storm water as it flows over debris that is deposited on road infrastructure and bridges

Always:

- Pave only in dry weather
- Cover manholes and catch basins prior to paving, patching, etc.
- Maintain roadside vegetation and restrict pesticide use
- Sweep bridge decks and structures prior to washing
- Use tarps and vacuums during sandblasting /painting activities

Whenever possible:

- Sweep /vacuum roadways and shoulders to remove debris and particulate matter

Never:

- Never wash a bridge if flaking paint is present

CHECKLIST 8.1 – STREET CLEANING AND MAINTENANCE INSPECTION CHECKLIST

Location: _____

Date of Inspection: _____

Name of Inspector: _____

Frequency: _____

Components / Items to check	Problems Observed	Maintenance / Repairs Necessary	Action
Road (curb line)	Debris, Grit, Stone	Yes No	Shovel or Vacuum
Milling	Broken Pavement (Excavated Material)	Yes No	Cover Storm Inlets Shovel or Vacuum
Paving	Tack Coat Overspray	Yes No	Cover Storm Inlets
Storm Drain Inlets	Broken Brick, Block, Mortar	Yes No	Repair
Roadside Vegetation	Too High None Observed	Yes No	Cut Reseed