



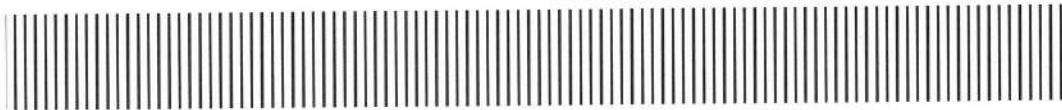
**City of Bessemer, Alabama**

1700 Third Avenue North • Bessemer, Alabama 35020

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# **Municipal Separate Storm Sewer System (MS4) Annual Report**

December 31, 2018



Report Prepared By:

**City of Bessemer**

1700 3<sup>rd</sup> Avenue North  
Bessemer, Alabama 35020  
205.424-4060

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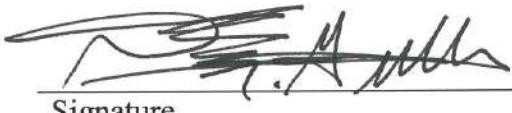
## 1. General Information

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### 1.1. Signatory Requirements

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or 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 fines and imprisonment for knowing violations.

Honorable Kenneth Gulley, Mayor  
Name and Title



Signature

January 22, 2019

Date

Address: 1700 Third Avenue North  
Bessemer, Alabama 35020  
Phone: (205) 424 - 4060



## 1.2. List of Contacts

Permit number ALS000022 states the permittee shall “provide a list of contacts and responsible parties (e.g. agency, name, phone number)” who had input to and are responsible for the preparation of the annual report. Therefore, as required by the NPDES permit, the City of Bessemer, Alabama is submitting its storm water management program contact list. Listed below is Mr. Tom Harmon, Director of Building and Inspections Department; Ron Gilbert, the City of Bessemer’s Engineer; and Freddie Freeman, the City of Bessemer’s MS4 Specialist. Any questions concerning Bessemer’s Municipal Separate Storm Sewage System (MS4) FY2017 Annual Report should be directed to the below mentioned persons.

### Contact Persons:

Name	Address	Telephone	E-Mail
Tom Harmon Buildings	Bessemer Building and Insp. 1804 Third Avenue North Bessemer, AL 35020	205.424.4060 Ext. 225	tharmon@bessemeral.org
Ron Gilbert EEFS Eng.	E.E.F.S. Company, P.C. 1809 2 <sup>nd</sup> Avenue North Bessemer, AL 35021	205.424.3737	rrgilbert@eefs-eng.com
Freddie Freeman Stormwater Mgm.	Bessemer Stormwater Mgt. 1804 Third Avenue North Bessemer, AL 35020	205.424.4060 Ext. 275	ffreeman@bessemeral.org
Bill McLaughlin DPW	Bessemer Public Works 1205 15 <sup>th</sup> Avenue North Bessemer, AL 35020	205.424.4084	improvements@bessemeral.org
Randall McFarland Bessemer Fire Depart.	Bessemer Fire Department 1111 2 <sup>nd</sup> Avenue North Bessemer, AL 35020	205.425.4331	firechief@bessemeral.org



### 1.3. General Introduction

This report is prepared in compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Phase I permit (the Permit). The City of Bessemer (City) has maintained compliance with the Permit requirements in the reporting period of January 1st to December 31, 2018 (reporting period). The Alabama Department of Environmental Management (ADEM) presently has primary jurisdiction over permitting and enforcement of the Stormwater Program for Alabama. ADEM issued NPDES Permit Number ALS000022 for “Municipal Separate Storm Sewer System Discharges” which became effective on December 1, 2017 under which the City of Bessemer, Alabama (City) presently operates.

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).

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

- Storm Water Collection System Operations
- Public Education and Public Involvement on Storm Water Impacts
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management in New Development and Re-Development
- Spill Prevention and Response
- Pollution prevention/Good Housekeeping for Municipal Operations
- Application of Pesticide, Herbicide, and Fertilizers



- Oils, Toxics, and Household Hazardous Waste Control
- Industrial Storm Water Runoff

This annual report summarizes the City's efforts for the reporting period January 1, 2018 through December 31, 2018 to comply with the above listed ten program elements.

#### **1.4. Overview and Summary**

The City of Bessemer's Storm Water Management Program is a MS4 specific comprehensive program and as such assumes the following responsibilities:

- Reduce discharge of pollutants from the MS4 to the maximum extent practical (MEP).
- Monitor all storm water structural controls within the City limits.
- Develop, implement, and enforce controls to minimize pollutants from construction activities.
- Develop, implement, and enforce controls to minimize pollutants from post-construction activities.
- Monitor the storm water runoff from the public streets, roads, bridges, and highways.
- Monitor any flood management projects and assess impacts on water quality.
- Reduce discharges of pollutants from pesticides, herbicides, and fertilizers applications.
- Detect and remove illicit discharges and improper disposal from the storm sewer.
- Prevent, contain, and respond to spills that may discharge into the MS4.
- Monitor and control pollutants in storm water discharges from industrial and high risk facilities (such as municipal landfills, hazardous waste treatment, and sewage treatment, storage, disposal and recovery facilities subject to Superfund Reauthorization Act (SARA) Title III, Section 313).
- Implement a public education program regarding storm water management program, recycling programs, household hazardous waste and proper disposal.
- Monitor the quality of receiving waters for quality
- Modify the Stormwater Management Program as necessary to improve and to meet the MS4 NPDES Permit requirements.

Our goal during this period of the administrative extension of the permit was to maintain compliance with the existing permit. To meet our permit requirement, a storm water management plan (SWMP) was developed which outlines sampling and other programs. Additional information regarding these programs is summarized below.



## 2. Program Evaluation

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### 2.1. Program Objective

The objective of Bessemer's Storm Water Management Program is to comply with the requirements of the Alabama Department of Environmental Management (ADEM) NPDES Permit #ALS000022 and to promote water quality through public awareness and involvement. A detailed report of the methods to achieve permit compliance is provided on the following pages. This report is structured according to the reporting requirements set forth in NPDES Permit #ALS000022 effective December 1, 2017.

#### Major Findings

Stormwater runoff from the City of Bessemer discharges into two primary receiving streams that include the following.

- Shades Creek
- Valley Creek

According to the 2016 303(d) list of ADEM, streams within, or flowing through, the City of Bessemer which have been designated as impaired by not fully meeting their usage classification have none of our streams listed. All creeks meet the maximum and minimum values of preferred water quality. This is a determination reached by ADEM in a federally required, evaluation of the status of water bodies within the state. The evaluation is conducted from best available data and a determination of the water's ability to support its designated use classification. This was the case for the all monitoring locations which includes two locations along each creek.

EPA has approved ADEM's Total Maximum Daily Loads (TMDLs) for Shades Creek. Table 2-1 summarizes the EPA approved TMDLs for the stream segments located in the City.



Table 2-1. EPA Approved TMDLs in the City of Bessemer

Assessment Unit ID	Water body Name	River Basin	Uses	Causes	Size	Date of Approval
AL03150202-060-01	Shades Creek	Cahaba	Fish and Wildlife	Pathogens	55 miles	Oct 2003
AL03150202-060-01	Shades Creek	Cahaba	Fish and Wildlife	Siltation / Turbidity	55 miles	November 2004
AL03150202-060-01	Shades Creek	Cahaba	Fish and Wildlife	Other Habitat Alteration	55 Miles	November 2004

## 2.2. Major Accomplishments

- Wrote a new SWMP which includes detailed plans on how the City will develop and implement its MS4 Program and comply with the new permit, ALS000022.
- Continued locating and mapping of the MS4 inlets to be entered into GIS.
- Continue to acknowledge environmental sensitive “no spray” and “restricted spray areas and storage areas for the Pesticides, Herbicide, and Fertilizer (PHF) program.
- Continued review of documentation for the PHF Program (i.e. chemical inventory, neighborhood mowing routes, Weed Maintenance & Storm Sewer Maintenance, material safety data sheets (MSDS), and Landscaping Chemical Applicators Certification).
- Sediment and Erosion Control Inspections - Enforced sediment and erosion control ordinance and conduct inspections at construction sites within the City of Bessemer.
- Public Education Events
 

The City partnered with Jefferson County, Jefferson County Health Department (JCHD), Black Warrior River Clean Water Partnership, Freshwater Land trust and Alabama power Company to implement the Valley Creek Cleanup.

The City partnered with Jefferson County, the Jefferson County Department of Health and the City of Birmingham to facilitate and host a training workshop for developers in the area on construction erosion and sedimentation control.
- Public Education/Information Online
 

Updated and maintained a stormwater website for the City of Bessemer which contains educational information, basic MS4 information, and contact information at <http://www.bessemeral.org>.
- Public Education Materials
 

Developed and distributed informational pamphlets about stormwater pollution prevention.
- Outfall reconnaissance inventory and illicit discharge and disposal elimination monitoring.

## 2.3. Program Strengths and Weaknesses

### 2.3.1. Program Strengths

The biggest program strength is that the City of Bessemer has moved forward with developing, managing and implementing their SWMP. City staff is actively involved in the development, management and daily implementation of BMPs that will protect and help improve stormwater quality. This also allows the City's SWMP to be a very dynamic program with the ability to evolve as necessary to meet the specific needs of the City. Advantages of the City's SWMP include but are not limited to the following:

- City leadership actively supports the stormwater program.
- City leadership can develop policy and initiatives that are in the best interest of the City and its citizens.
- The City has a vested interest in the success of their SWMP.
- City staff has a better understanding and knowledge base of the facilities, infrastructure, and activities that are occurring within the City. This allows City staff to proactively address potential problems before they arise.
- Currently the City has a program to clean inlets and pipes on an as-needed basis which includes information from citizen complaints and known areas that need frequent maintenance by the Department of Public Improvements (DPI).
- The City has been engaged with local, state and federal agencies over the years to identify properties that should be preserved and/or restored in order to protect and improve aquatic habitats and water quality in the City of Bessemer. These land acquisitions have effectively removed or prevented impervious surfaces from being on those lands.
- The City has established environmental sensitive “no spray” and “restricted” areas and a storage area for the Pesticides, Herbicides, and Fertilizer (PHF) Program.
- The City follows all the manufacturers’ instruction and guidelines for chemical applications in the PHF Program.
- The City has produced maps for mowing Routes, PFH application, and street sweeping routes (These maps are attached to the document).
- The City has drafted a protocol to perform illicit discharge detection and elimination and wet outfall inspections in the MS4.
- The City has its own (Construction) permitting program which requires site plan reviews on all sites. The City doesn’t depend on ADEM to administrate its permitting program.
- The City has been actively exploring ways to educate construction site operators and the general public on the stormwater issues and receiving water pollution related to construction activities.
- City Staff are involved daily with the implementation of the SWMP.

- The City has existing programs that are used to minimize and/or eliminate the potential for discharging pollutants in stormwater runoff. Some of these programs have been operating for many years.
- Modify the program on continuous basis for effective implementation and to produce results that would benefit the Citizens.

### 2.3.2. Program Weaknesses

Although there are advantages to the City administering its own stormwater program, weakness in the stormwater management program continue to surface.

The list below notes items that the City will continue to work on in the development of its overall storm water management program.

- **Upstream Water Quality** – The City is located downstream of other cities. Unless the neighboring cities effectively manage their stormwater programs, improvements within the City may be offset by poor stormwater quality entering the City from its neighbors. In general it is well understood that we need large data set to make any conclusive decisions on the chemical conditions of the water.
- **Structural Controls and Stormwater Collection System** – The City has developed standard operating procedures (SOPs) for inspection and maintenance ensuring that all controls and outfalls are inspected once each permit cycle; enhance the program to address privately-owned structural controls; establish authority for requiring maintenance and repair; locate all open channels and outfalls and enter their locations into a GIS database.
- **Mapping** – The City continues its mapping project to complete an inventory of the entire system, including publicly-owned storm sewer pipes 12" and larger; all outfalls; and structural and nonstructural stormwater controls, including retention ponds, detention basins, catch basins, culvert inlets, and open channels.
- **Pesticides, Herbicides, and Fertilizer Application** – The City will continue to develop SOPs for application and storage. The City has to continue with the development spraying schedules that consider rainfall and runoff.
- **Illicit Discharge and Improper Disposal** – The City will continue to develop its field manual to address illicit discharges. Also, the City must develop and implement written SOPs for inspection and elimination.
- **Spill Prevention and Response** – The City will develop written SOPs for notification, response, and protection of water quality.
- **Industrial and High Risk Runoff** – An industrial Program shall be developed and implemented which addresses industrial, commercial and municipal facilities which have the potential to contribute substantial pollutant loads to the MS4. The City will review its current ordinances and will determine whether or not modifications need to be drafted and adopted to the extent necessary to allow for regulation of industrial facilities.

- **Construction Site Runoff Program** – The City will revise and finalize written SOPs for inspection and escalation of enforcement as well as plan review and approval. The City will also develop a training program for City inspectors.
- **Public Education** – The City will ensure that its program includes all components required by the MS4 Permit, including an education program for illicit discharges, management and disposal of used oil, and proper use, application, and disposal of pesticides, herbicides, and fertilizers by the public and commercial applicators.

## 2.4. Program Goals

- The City received our new permit, ALS000022 which went into effect December 1, 2017. The City has developed a new stormwater management plan that will address all the requirements of the new permit and benefit the citizen to the maximum extent. Major goals of the City SWMP are further described in the City SWMP document.
- The City will continue to identify and train its staff to perform different activities listed under the City's SWMP.
- Ultimate goal of the City SWMP is to improve and maintain receiving water quality to support their beneficial uses.



### **3. Stormwater Management Plan Activities**

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#### **3.1. Monitoring and Screening**

Sampling was performed by the City for the calendar year of 2018.

As required by the Permit, the City of Bessemer has operated all its separate storm sewer systems and also all of its storm water structural controls in a manner to reduce the discharges of pollutants to maximum extent practicable. The City has repaired or reset 280 catch basin lids during the permit year, and will continue its routine maintenance program and as well following-up with the citizens' complainants for maintenance. The City has also inspected 4,500 storm drains and cleaned 2,420 storm drains during the permit year. The City routinely inspects four detention ponds at City Landfills and chert pit. As part of City's storm sewer maintenance program, the City has flushed 2,500 feet of storm water drains. Appendix B contains the Weed Maintenance and Storm Sewer Maintenance plan which details the storm sewer maintenance routing plan.

#### **3.2. Areas of New Development and Significant Redevelopment**

The City post-construction stormwater management program focus on implementation of controls and practices to maintain good water quality conditions after an area has been developed and after construction activities have been completed. This minimum control measure will include: requiring, through local ordinance, all operators of construction activities that disturb one acre or more to develop and implement structural and/or non-structural BMP's based on the local site conditions and that minimize water quality impacts; development of procedures to inspect post-construction runoff from new development and redevelopment projects; and, development of a mechanism to ensure the long-term operation and maintenance of the BMP.

The city is working to collect and develop suitable educational information for stormwater management at active construction and post construction runoff control. This is an ongoing effort and the City plans to post the developed information the stormwater website and distribute the material through workshops and other community programs. Additionally, as part of the public education program, the City is currently partnering with Jefferson County, the Jefferson County Department of Health, and the City of Birmingham to facilitate and host workshops for developers in the area on construction erosion and sedimentation control (Appendix C).



### 3.3. Roadway Maintenance

The City understands that the maintenance of public streets, roads, and highways that are in or pass through the City will help in reducing pollutant loads to its MS4 systems, especially street sweeping which helps in reducing most organic and inorganic pollutants that are expected to attach to solids and floatable that are generally seen on the roadside.

The City operates a mechanical street sweeper on assigned routes Monday through Friday and also on emergencies as needed. During the Permit year, 4,093.3 miles of streets were swept and 7,410 yards of material was collected. The City's street sweeping routes and schedule during the permit year are listed below. (City Statistics are shown in Appendix D)

#### **Week 1:**

North Side Area: 22<sup>nd</sup> St to 30<sup>th</sup> St between 5<sup>th</sup> Ave to 12<sup>th</sup> Ave N

Braswell Homes: 35<sup>th</sup> St to 34<sup>th</sup> St between 5<sup>th</sup> Ave & 8<sup>th</sup> Ave N

Downtown Area: 14<sup>th</sup> St to 20St between 9<sup>th</sup> Ave to 1<sup>st</sup> Ave N

#### **Week 2:**

Southside Area: 14<sup>th</sup> St to 22<sup>nd</sup> St between Carolina Avenue & Holbrook Avenue & Exeter Ct

Dartmouth Ave from 14<sup>th</sup> St to City limits

Southside Homes: 24<sup>th</sup> St to 27<sup>th</sup> St between Carolina Terr & Exeter Ave

Davis Heights: 26<sup>th</sup> St to 22<sup>nd</sup> St between Fairfax Avenue & Holbrook Terr

Asbury Howard: 22<sup>nd</sup> St, Hamby St, Bynum St, McKinnon Ct, & Deramus Ct

Exeter Ave from 30<sup>th</sup> St to 34<sup>th</sup> St

Sloss Village, Brickyard Hill: 32<sup>nd</sup> St to 29<sup>th</sup> St between Arlington Ave & Berkley Ave

Hillside Homes/Cobb Gardens: Mitchell Blvd, Clarendon Ave, Soles Ct, Blackberry Ct, Schelleci, Downtown Area

#### **Week 3:**

Muscoda Hill Ave G, H, I, and J

Cloverdale: Hall Ave to Fairfax Ave between 9<sup>th</sup> St & 12 St.

Longbrook Estates: Longbrook Terr, Morning Dr, & Longbrook Dr

Jonesboro Area: 9<sup>th</sup> Ave to Deadrick St between Fairfax Ave to Alabama Ave, Bryant St, Bell St, Kyser St, Center St

1<sup>st</sup> St from 4<sup>th</sup> Ave to Owens Ave, 9<sup>th</sup> to 5<sup>th</sup> St between 6<sup>th</sup> Ave & 8<sup>th</sup> Ave

Kate Walter Homes: 12<sup>th</sup> St to 10<sup>th</sup> St between 5<sup>th</sup> Ave to 7<sup>th</sup> Ave, 3<sup>rd</sup> Ave to 1<sup>st</sup> Ave from 14<sup>th</sup> St to 11<sup>th</sup> St

Downtown Area

#### **Week 4:**

Magnolia St, Prince Cedar Hill Rd  
Westlake Area  
Skyview Estates Area  
Lakewood Area  
Hillside Drive  
Thomas Acres Area  
Woodland Hills Area  
Memorial Drive  
Westwood Drive  
Carriage Hills  
Downtown Area

Appendix E includes the literature about street sweeper routes and community service program (which helps with the litter control).

### **3.4. Flood Control Projects**

The Army of Corps of Engineers began a flood study for Valley Creek in December. The study is projected to take 3 years to complete. All municipalities within the Valley Creek watershed are participating in the study with the City of Bessemer being the lead sponsor of this project.

### **3.5. Pesticides, Herbicides, and Fertilizers**

During the course of the permit year, the City has tracked the inventory of the pesticides, fertilizers and herbicides stored for application. To bring awareness to citizens, the City has educated on limited and environmentally friendly pesticides, fertilizers and herbicides applications in lawns, for example the City has updated its stormwater website with useful lawn care information. The City has many different training activities for its employees that help protect water quality.

The City has established environmental sensitive “no spray” areas and a storage area for the PHF Program. Appendix F includes the map illustrating the “no spray” as well as “restricted spray” (environmentally sensitive) areas. Also, a map of the Bessemer Herbicide and Fertilizer Facility is provided in Appendix F. All chemicals used in the PHF Program are stored at the facility.

The City follows the all manufacturers’ instruction and guidelines for chemical applications in the PHF Program.

### **3.6. Illicit Discharge Program**

The City has conducted dry weather monitoring at four sampling locations along its receiving waters and details of this monitoring are presented in the earlier sections of this



Magnolia St, Prince Cedar Hill Rd  
Westlake Area  
Skyview Estates Area  
Lakewood Area  
Hillside Drive  
Thomas Acres Area  
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The City has conducted dry weather monitoring at four sampling locations along its receiving waters and details of this monitoring are presented in the earlier sections of this



report. One of the main objectives of this monitoring program was to detect any possible illicit discharges into City's MS4 systems and receiving waters.

The City has developed an outfall inspection protocol to check the outfall for illicit discharges. The City IDDE program includes visual inspection, field monitoring the water chemistry parameters, lab testing for water chemistry parameters and tracing and eliminating the illicit discharges. The outfall inspection protocol details the procedure used for the inspection and elimination of the illicit discharges and communication protocol to detail possible illicit discharge to responsible agencies.

In addition, the City has arrangements to receive citizens' complaints through a hotline. Citizens are encouraged to call the hotline to report possible illicit discharges or illegal disposal to the MS4. The details of the hotline are published on the City website. When such calls are received the City staff will attend to the issue, investigate possible illicit discharge, trace the source of it and eliminate it. For the reporting period there were no citizen calls regarding possible illicit discharge.

Public education is another component of the City IDDE program which targets educating citizens about minimizing and eliminate illicit discharges to the City MS4. The primary focus of the public education of the IDDE program includes, developing and distributing public education material such as brochures detailing types of illicit discharges and their impact on the receiving water quality and how that affects the beneficial uses of water. Also the City has a new recycle material collection center to collect items that can be recycled such that the people don't dispose them at open space, such as paper, aluminum and used motor oil.

The City IDDE program is evaluated on annual basis to determine the need for improvement. The City will use the findings of the IDDE program to make necessary changes in the following year. For example, the City will use the results of the IDDE program to identify the priority areas to provide additional public education and more frequent monitoring. The City is also developing the legal authority for enforcement of the IDDE program.

### **3.7. Spill Prevention and Response**

The Bessemer Fire Department works in conjunction with the Jefferson County Emergency Management team to handle the spills that occur in the City limits. As part of the City SWMP, the spill response reports are collected on a routine basis to assess them for quantity and type of materials spilled. The City is preparing a GIS map of inlets that will be provided to the Bessemer Fire Department to identify the nearest stormwater inlet in which spill material may end up during an incident. This will help the response team to make appropriate containment arrangements to control the spill material entering into the stormwater inlet. There were five reported spills during the permit year.

**Table 3-2: Spill Responses during the Permit Year**

Date	Incident	Amount	Address
05/04/2018	Gasoline or other Flammable	3 gallons	906 9 <sup>th</sup> Avenue
06/23/2018	Gasoline or other Flammable	Unknown	1030 4 <sup>th</sup> Avenue
07/07/2018	Gasoline or other Flammable	5 gallons	Morgan Road & I-459
08/22/2018	Gasoline or other Flammable	Unknown	I-20/59, Mile Marker 115
10/26/2018	Gasoline or other Flammable	Unknown	5036 Ford Parkway

Throughout the year the City of Bessemer conducts different employee training activities that could impact local water quality, such as:

- Pesticide, fertilizer, herbicide application and disposal.
- Hazardous roadway spills management.
- Oil and shop chemical management

In addition to the training activities noted above the City also conducts additional training for Hazmat spills and cleanup. Since all spills have the potential to affect local water quality, this training is also important to our stormwater program.

With the on-going implementation of stormwater information management system, now the City can track all the activities related to spill prevention and response activities. A Standard Operating Procedure (SOP) is being developed on Spill Prevention and Response which address all types of spills that occur in the City limits. This SOP will define the roles and responsibilities of each responding department, ensuring the responsible MS4 staff collects the necessary information that is gathered at the time of response, and conducts an evaluation of the results and affects to the MS4.

### **3.8. Industrial and High Risk Runoff Program**

The solid waste facility permit for the Bessemer City-Concord Landfill (Permit No. 37-29) was effective May 3, 2012, and expired May 2, 2017. The City of Bessemer is in the process of closing the facility with a complete closure extension granted by ADEM on



November 20, 2017. Contracts have been let to install final cover with completion in 2019. The solid water facility permit for the Raimund-Muscoda Inert Landfill (Permit No. 37-42) was effective January 10, 2016 and will expire on January 9, 2021. Copies of the permits are attached in Appendix G. Appendix H contains Bessemer Chert Pit, Raimund-Muscoda Inert Landfill, and Concord Landfill information such as ADEM inspections reports.

Regular inspections are conducted at the landfill sites for implemented BMPs. For example, the following items that are routinely checked at the landfill sites. Some of the items listed below are applicable only at certain times, such as during active construction.

- Construction Exit
- Barrier Class – Silt Fence
- Check Dams
- Diversion
- Grass Swale
- Inlet Protection
- Outlet Protection
- Sediment Basin
- Temporary Seeding
- Permanent Seeding
- Grounds keeping

One of the objectives of Industrial and High Risk Runoff program is to minimize the impacts of sanitary sewage seepage on water quality. Sanitary sewer overflows are primarily handled by the Jefferson County Environmental Services for areas served in the City of Bessemer. The City plans to develop a communication protocol to gather the information related to storm sewer flows and corrective actions from the Jefferson County Environmental Services Department.

As part of the City SWMP, the City has gathered industrial facilities that are permitted by ADEM and in the process of identifying all industrial facilities that could potentially discharge the pollutants into the City MS4 and receiving waters. The City's primary plan is to target the industries that fall under Standard Industrial Classification (SIC) categories. The City's plans are underway to develop an SOP of the industrial and high risk runoff program. The SOP will detail the criterion used to select the facilities for inspection, frequency of inspection, items that will be inspected at the facilities, communication and enforcement procedures, record keeping and annual assessment of the program.



### 3.9. Construction Storm Water Program

The City has mandated that developers and contractors shall obtain permits for all land disturbance activities should obtain the permit prior to commencing work. This permit is required for all types of land disturbance activities including new construction, reconstruction and any other maintenance activities that are associated with the land disturbances. They will not issue a permit until the site plan review has been performed and any deficiencies that were noted have been corrected. Bessemer has a site plan review process which includes examination of all pre- and post-construction runoff characteristics. Additionally, all site plans are evaluated for the proper use of temporary erosion control measures.

Bessemer requires site plan reviews on all sites regardless of size which means even sites that are not subject to the NPDES one-acre rule are examined for the proper implementation of erosion control methods. Therefore Bessemer has, to the maximum extent possible, implemented a thorough site plan review process to ensure erosion control is properly managed during and after construction. During the permit year, the City has issued 46 land disturbance permits and performed inspections at those sites. Appendix I includes the list of permits issued.

The City also conducts the routine inspection of construction sites to check for their compliance with construction permit requirements. There was one enforcement action taken against a property owner for the permit year. In addition, the City also conducts the non-routine inspections as required. The City did not receive nor respond to any construction runoff related complaints. During the permit year, the City has responded to all complaints from citizen regarding possible construction permit violations.

As part of the City SWMP, the City has drafted Standard Operating Procedures (SOPs) to have consistency among the different activities of the City Construction Program. The planned documentation will provide standard operating procedures for construction site erosion control permit plan review, inspections, compliance and enforcement within the City of Bessemer. These procedures shall be followed by the plan reviewers, construction site inspectors and other inspectors assigned to review plans and inspect construction sites for compliance with required erosion and sedimentation control practices. This SOP will be reviewed and updated annually as necessary.

Another area of the City's construction program is to educate the construction site operators on best management of construction site runoff. The City is conducting workshops for the construction site operators in coordination with the City of Birmingham and Jefferson County. As part of the City construction program, the City has drafted a construction fact sheet, which will educate the construction site operators on managing their construction runoff and available resources for their reference.



## 3.10. Public Education and Public Involvement

### 3.10.1. Public Involvement

The City partnered with Jefferson County, Jefferson County Health department, Black Warrior River Clean Water Partnership, Freshwater Land Trust and Alabama Power Company to host the Annual Valley Creek Cleanup at McNeil Park (1931 13<sup>th</sup> Street North, Bessemer, Alabama).

In conjunction with the Valley Creek Cleanup, the Storm Water Department worked with the SGA of Bessemer City High School to compete in the “Litter Quitters” You-Tube video competition.

The City partnered with Jefferson County to host a Hazardous Waste Collection Day.

The City hosted four Lunch & Learn events at the Bessemer City Library with topics related to storm water. (See Appendix C)

Bessemer Storm Water participated in the annual Homebuilders soil & Erosion Control Workshop.

### 3.10.2. Stormwater Website

A stormwater public information website has been updated that addresses basic information about the stormwater program and the following major topics:

- Activities around the home.
- Lawn care.
- Car washing.
- Pet waste.
- Stormwater Education



## 4. Summary of Proposed Changes

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The City reviews its SWMP on annual basis to check for its compliance with the Permit and the program effectiveness for protecting the receiving water quality. The City primarily uses the monitored water quality to assess the program effectiveness and to identify priority areas for program concentration. Based on available data and reviewing the existing Permit requirements, the City will continue to implement the following in the future:

1. Co-ordinate with neighboring cities for water quality monitoring.
2. Develop SOPs for the City construction permitting system, spill response, PHFs management, public education.
3. Co-ordinate and involve all the City departments.
4. Complete the outfall reconnaissance inventory and identify the priority areas for more frequent future monitoring.
5. Identify and modify existing measurable goals for the SWMP elements.



## **5. Fiscal Analysis**

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### **5.1. Fiscal Analysis**

#### **5.1.1. Past Fiscal Year**

The City's 2018 budget was based on the cost of implementing the MS4 Stormwater Program. This cost includes: the Lunch & Learn series, various sponsorships, membership fees, hazardous material disposal and salaries. Appendix L provides a complete list of the employees involved in the MS4 Stormwater Program.



## 6. Program Summary Table

PROGRAM ELEMENT	BMP Activity	ACTIVITY SCHEDULE			COMMENTS
		Prescribed SWMP Activities	Complied With	Activities Accomplished	
(1) Monitoring	Dry Weather Outfall Screening	100% system per permit cycle	YES		Outfalls were screened.
	Dry Weather Monitoring	Instream Monitoring	YES	<ul style="list-style-type: none"> <li>Quarterly monitoring at 4 sites</li> </ul>	Samples collected all 4 quarters.
	Wet Weather Monitoring	Instream Monitoring	YES	<ul style="list-style-type: none"> <li>Quarterly monitoring at 4 sites</li> </ul>	Samples collected all 4 quarters.
(2) Structural Controls	Structural Controls	Maintenance and inspection activities of existing controls	YES	<ul style="list-style-type: none"> <li>Inspected 4,500 storm drains</li> <li>2,420 total storm drains cleaned</li> <li>2,500 feet of storm sewer flushed.</li> <li>Repaired 105 catch basins or lid reset</li> </ul>	
	Maintenance and/or inspection activities of existing controls				
(3) Areas of New Development / Redevelopment	Limit increases and/or reduce discharge of pollutants in storm water	Zoning and Development Regulations	YES	<ul style="list-style-type: none"> <li>All sites subject to NPDES regulations were inspected at completion.</li> </ul>	



Section 6  
Program Summary Table

PROGRAM ELEMENT	BMP Activity	ACTIVITY SCHEDULE			COMMENTS
		Prescribed SWMP Activities	Complied With	Activities Accomplished	
(4) Roadway Maintenance	Maintenance	Street Sweeping	YES	<ul style="list-style-type: none"> <li>4,093.3 miles of streets swept.</li> <li>7,410 yards of debris and dust collected.</li> </ul>	
(5) Flood Control Projects	Evaluate Existing Flood Control Projects	Evaluate Flood Control Projects for Retro-Fitting to Improve water quality	YES	<ul style="list-style-type: none"> <li>Army Corps of Engineers began a flood study for Valley Creek.</li> </ul>	
(6) Pesticide, Herbicide, and Fertilizer Application	Implement controls to reduce the discharge of pollutants from storage and application	Training	YES	<ul style="list-style-type: none"> <li>Public Works staff trained on chemical handling and application.</li> </ul>	
(7) Illicit Discharges	<ul style="list-style-type: none"> <li>Illicit Discharges</li> <li>Investigations</li> <li>Enforcement actions</li> <li>Spill response activities</li> </ul>	Public Hotline	YES	<ul style="list-style-type: none"> <li>Hotline working.</li> </ul>	
(8) Spill Prevention and Response	Prevent, contain and respond to spills	Spill Response	YES	<ul style="list-style-type: none"> <li>Outfalls were inspected</li> <li>No spills reported during this permit year.</li> <li>Selected City staff was</li> </ul>	All outfalls screened showed no signs of illicit discharge



Section 6  
Program Summary Table

PROGRAM ELEMENT	BMP Activity	ACTIVITY SCHEDULE			COMMENTS
		Prescribed SWMP Activities	Complied With	Activities Accomplished	
(9) Industrial and High Risk Runoff	Identify and control pollutants in storm water discharges	Identify NPDES permitted facilities	YES	<ul style="list-style-type: none"> <li>Landfill Sites were inspected.</li> </ul>	Concord Landfill to be closed in 2019.
(10) Municipal WWTP	Identify and control pollutants in storm water discharges	Inspection	YES		Sanitary Sewage issues are primarily handled by the Jefferson County Environmental Services for areas served by Jefferson County and by for areas served by the City of Bessemer.
(10) Construction	Inspections	Inspection	YES	<ul style="list-style-type: none"> <li>Inspected 51 sites.</li> </ul>	



PROGRAM ELEMENT	BMP Activity	ACTIVITY SCHEDULE			COMMENTS
		Prescribed SWMP Activities	Complied With	Activities Accomplished	
(11) Education	Promote, publicize and facilitate	<ul style="list-style-type: none"> <li>Brochures</li> <li>Household Hazardous Waste Day</li> </ul>	YES	<ul style="list-style-type: none"> <li>Stormwater management page on the City's Website.</li> <li>Participated in Valley Creek Cleanup.</li> <li>Held Erosion and Sedimentation Control Workshop for Contractors.</li> <li>Distributed educational materials.</li> <li>Sponsored fifth grade Jonesboro Elementary students to attend the Water Festival at UAB.</li> <li>Held a Hazardous Waste Collection Day for Bessemer and Jefferson County citizens.</li> <li>Worked with the SGA of Bessemer City High to compete in the "Litter Quitters" video competition.</li> </ul>	

