



CITY OF BIRMINGHAM
DEPARTMENT OF PLANNING, ENGINEERING & PERMITS
710 North 20th Street
ROOM 202, CITY HALL
BIRMINGHAM, ALABAMA 35203

Randall L. Woodfin
Mayor

Edwin Revell
Director

Alabama Department of Environmental Management
Attention: Ms. Marla Smith
1400 Coliseum Blvd.
Montgomery, AL 36110-2400

RE: 2018 SWMPP Update Submittal
NPDES PERMIT #ALS000032

Dear Ms. Smith,

Please find enclosed the update to the 2018 SWMPP, required under the February 26th, 2018, NPDES Permit #ALS000032.

It is with great pleasure to submit this plan for your review. Please let us know if you see anything that we can strive to do better at or any areas where it may seem that we are missing any requirements. I am very excited for you to see the dedicated team that has worked to put this together (located in the introductory section). It truly is amazing to be working with such talented staff, and the addition of Keep Birmingham Beautiful will also help benefit the overall education and outreach, as well as targeted cleanups, resources, etc. in our stormwater efforts.

The Council, in the Committee of the Whole meeting, was able to get a review of the new post-construction ordinance and reference manual on 11/28/18. The meeting went well, and we plan to request adoption in December 2018/January 2019, with full Council adoption planned in February 2019, to meet the requirements of this permit prior to March 1, 2019.

For any questions, comments, or feedback, please let me know at (205)714-8644 or via email at Joshua.Yates@BirminghamAL.gov. Thank you for working with us as we strive to be the most efficient and effective stormwater management operation in the state.

Sincerely,

Joshua D. Yates
Stormwater Administrator

Cc. Director Edwin Revell
Deputy Director Chris Hatcher



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Storm Water Management
Program Plan

2019 DRAFT-Submitted 11/30/18



MARCH 1, 2019

City of Birmingham, AL

1. Introduction

1.1. Regulatory Overview

The City of Birmingham was issued by the Alabama Department of Environmental Management (ADEM) a National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Individual Phase I Permit (ALS000032), effective on March 1, 2018. Previously the City had been included as a Co-Permittee under permit number (ALS000001) along with the Stormwater Management Authority, Inc. (SWMA) and other metropolitan area municipalities, which became effective on November 1, 2001. Although the City separated from SWMA in 2008, it continued stormwater operations as an individual permittee under that existing permit (ALS000001).

Notice is granted to the City of Birmingham in accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1378 (FWPCA), the Alabama Water Pollution Control Act, as amended, **Code of Alabama 1975**, §§22-22-1 to 22-22-14 (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 Permit No. ALS000032 to discharge from the MS4 into those receiving waterbodies within the corporate boundaries of the City of Birmingham. These requirements shall be met by the development and implementation of a storm water management program (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 Number ALS000032, BMPs, measureable goals, and responsibility designations are provided for each of the following program elements:

- ★ Structural Controls
- ★ Public Education and Public Involvement on Stormwater Impacts
- ★ Illicit Discharge Detection and Elimination (IDD&E)
- ★ Construction Site Storm Water Runoff Control
- ★ Post-Construction Stormwater Management in Qualifying New and Re-Development
- ★ Spill Prevention and Response
- ★ Pollution Prevention/Good Housekeeping for Municipal Operations
- ★ Application of Pesticide, Herbicide, and Fertilizers (PHFs)
- ★ Oils, Toxics, and Household Hazardous Waste Control
- ★ Industrial Storm Water Runoff
- ★ Water Quality Monitoring and Reporting

ADEM defines the fiscal year as beginning October 1, and ending September 30, of each year.



1.2. Legal Authority and Enforcement

Part II C of the City of Birmingham's NPDES MS4 permit requires the Permittee to review and revise its relevant ordinances or other regulatory mechanisms, or adopt any new ordinances that provide adequate legal authority to control pollutant discharges into and from the MS4, and to implement and enforce its SWMPP. The permit further defines the minimum extent of authority required. The extent of the MS4 jurisdictional boundary is provided in Figure 1. The following represents the City's legal authority to comply with the NPDES MS4 permit:

- ◆ Ordinance No. 88-148, §1(100), 10-7-1988; Ordinance No. 99-131, §1(100), 7-15-1999; – Chapter 7 of the General Code of the City of Birmingham, Alabama. These ordinances have been passed to address erosion and sediment controls over all new land disturbing activities.
- ◆ Ordinance No. 14-198, 12-16-2014; Ordinance No. 17-100, 8-1-2017 – Stormwater Protection Ordinance adopted to establish stormwater management and water quality protection controls, programs, regulations, prohibitions, and penalties per NPDES permit number ALS000032.
- ◆ General Code of the City of Birmingham, Alabama, Title 12, Article 5, Sections 5.5 and 5.6 – Design standards including water drainage, flooded areas, stormwater detention/retention facilities, soil and sedimentation controls.
- ◆ Code 1964, §24-16; Code 1980, §4-3-17; Ordinance No. 9-193, 11-13-1977; Ordinance No. 10-92, §4-3-17, 7-6-2010; General Code of the City of Birmingham, Alabama, Chapter 3 – Addresses the City's solid waste collection and disposal.
- ◆ Ordinance No. 95-56, 3-21-1995; City of Birmingham Codes of Ordinances, Appendix D, Article VI, Section 10 – Management of the City's floodplain zoning districts.
- ◆ Ordinance No. 15-95, 7-23-2015; Ordinance No. 17-100, 8-16-2017; Ordinance provides the City the opportunity to fund the Stormwater Management Program and created an appeals process for citizen review of public stormwater decisions related to illicit detection and elimination of pollutant discharges.

1.3. Basic SWMPP Information

The City of Birmingham is required to develop, revise, implement, maintain and enforce a storm water management program, 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 40CFR 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. This stormwater



The City of Birmingham, is comprised of approximately 152 square miles of land and water and represents the core of the Birmingham-Hoover Metropolitan Statistical Area (MSA). The MSA is a seven-county region of 5,332 square miles, with a population of 1,127,741 with approximately 75% of the MSA population being concentrated in Jefferson and Shelby Counties. The city's 2010 population density was 1,396 persons per square mile, with 588 households per square mile. Table 1 at right documents the Land use at the time the City's Comprehensive Plan was completed in 2013. The figure below identifies with a star those departments that continuously provide support to Stormwater Management in the overall development, operation and maintenance of the stormwater program and municipal BMP controls.

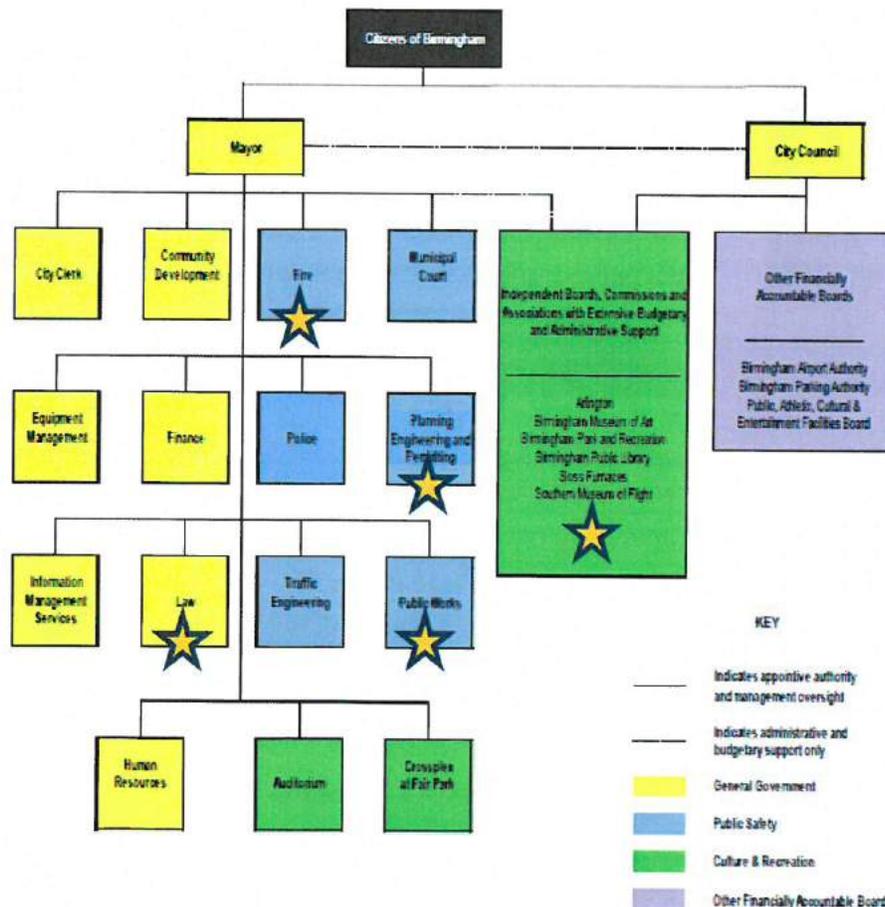
Table 1: City of Birmingham Land Use

LAND USE	ACRES	PERCENT
Residential	19,348	22%
Commercial	3,383	4%
Industrial	7,179	8%
Parks and open space*	14,633	17%
Agriculture/Forestry	14,150	16%
Public /semi-public	4,491	5%
Resource extraction	715	1%
Transportation/utilities	9,344	11%
Parking**	233	0%
Vacant	14,383	16%
TOTAL	87,861	100%

* Designated parks and open space, such as cemeteries, flood protection and floodway lands, water protection land.

** Parking as a primary use (parking structure or lot), not parking accessory to another use.

City of Birmingham, Alabama Organization Chart



1.4. Our Stormwater Team

Stormwater Management resides within the Department of Planning, Engineering, and Permits within Planning, Urban Design, and Watershed Management Division. Stormwater Management is responsible for the overall development, implementation, and reporting required by the City's NPDES MS4 Permit. As the above organization chart depicts, Stormwater Management also works in association with the Fire Department related to spill prevention and response, high risk facilities inspections associated with storage and disposal; the departments of Parks and Recreation, and Public Works associated with the operation and maintenance of the City's stormwater facilities, pesticide, herbicide, and fertilizer storage and applications; and the City's Attorney Office associated with implementation of the City's regulatory stormwater programs (e.g. Soil Erosion and Control, Post-Construction Stormwater Management, and Illicit Discharge Detection and Elimination).

As the Stormwater Administrator, I am submitting the plan, but the feet on the ground work goes to the amazingly talented Stormwater Management Team that I have the privilege of working with, responsible for the content contained herein, and includes the following dedicated staff:

George Wesley Putman, P.E., CFM, LEED AP

CHIEF CIVIL ENGINEER – WATERSHEDS



Mr. Putman is an expert in the engineering field specializing in hydrology and hydraulic evaluations as well as design for numerous projects with respect to GI/LID, water quality, and flood control best management practices. Mr. Putman has over 40 years' experience in Civil Engineering, which all started from his B.S in Civil Engineering from Auburn University.

Mr. Putman is the lead for the City's construction stormwater and post-construction stormwater runoff control measures.

Angela D. Moss

STORMWATER SPECIALIST

Ms. Moss has an extensive educational and experience oriented career with a B.S. in Biology from Stillman College and over 17 years with governmental agencies (both local and State level) focused on environmental compliance. Ms. Moss serves on the Board of Directors for the Southeast Stormwater Association for the State of Alabama as well as the City's Stormwater Appeals Board.

Ms. Moss is the lead for the City's illicit discharge detection and elimination control measure as well as spill prevention & response and industrial runoff.





Direcus D. Cooper, CSI

STORMWATER SPECIALIST

Mr. Cooper has an extensive educational experience in which he has acquired an A.S. in Environmental Science from Shoals Community College, a B.S. in Environmental Engineering from Auburn University, and a M.S. in Occupational Health and Safety/Environmental Management from Columbia Southern University. Mr. Cooper is also currently enrolled in a dual degree with the University of Alabama at Birmingham and Stratford University, UK, where he will receive a M.S. in Sustainable Smart Cities from both Universities.

Mr. Cooper is, and has been, the lead for the City's stormwater education and water quality monitoring programs for over seven years.

Alexcia S. Moore, CPMSM

STORMWATER SPECIALIST

Ms. Moore has a great knowledge of the stormwater field through her educational experience starting with a Bachelor's Degree in Chemistry from Berea College. Ms. Moore followed her Degree with obtaining a certification as a Certified Professional in Municipal Stormwater Management. Ms. Moore has been with the City of Birmingham for over six years, involved with multiple aspects of the stormwater management program including grant writing, grant management, webmaster, grant project management as well as various other educational items. Ms. Moore was appointed to serve on the Education Committee for SESWA in 2018.

Ms. Moore is the lead for the City's pollution prevention & good housekeeping control measure as well as the application of pesticides, herbicides, and fertilizers control measure.



Troy J. Perry Jr., P.G.

WATER POLLUTION CONTROL TECHNICIAN



Mr. Perry has 32 years in the environmental field working with government agencies (local, state, & federal), the public, & industry. Mr. Perry is a licensed Professional Geologist in the State of Alabama and was recently appointed by Governor Ivey to the Alabama Board of Licensure for Professional Geologist. Mr. Perry is the lead for the City's oils, toxics & hazardous waste control measure as well as structural controls and provides the field operations for water quality monitoring programs and structural control / facility inspections.

Sa'de McClanev Hammond

EXECUTIVE DIRECTOR OF KEEP BIRMINGHAM BEAUTIFUL (KBB)

Ms. Hammond has a Bachelor's Degree in Biology with a Minor in Marketing from Jacksonville State University. Ms. Hammond is the Executive Director of KBB, leading efforts in planning, organizing, and coordinating litter clean-up days, beautification projects, and environmental events throughout the City.

Ms. Hammond is relatively new to the stormwater division, but brings a lot of experience and resources to help promote our educational outreach efforts. Ms. Hammond will help lead our efforts to become a more sustainable city through her experience in recycling and waste disposal alternatives as well as her public education experience.





Tommy Goss, QCI

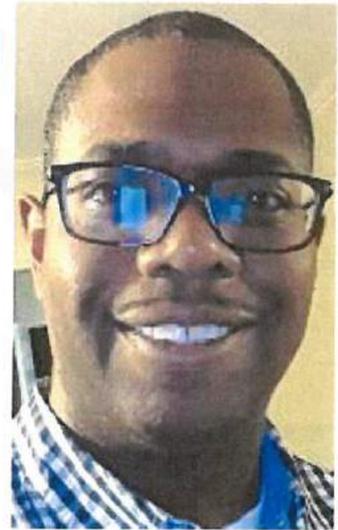
PRINCIPAL ENGINEERING CONSTRUCTION INSPECTOR

Mr. Goss serves as Principal Engineering Construction Inspector; is a QCI with over 25 years of experience in review of construction plans and inspection of construction sites. He manages the day to day review of Soil Erosion Control best management plans and the assignment of projects to inspectors.

Eddie Fowler, QCI

SENIOR ENGINEERING INSPECTOR

Mr. Fowler serves as a Senior Engineering Inspector in the Erosion Sediment Prevention and Control program. He is a QCI with over 15 years of inspection of civil engineering and soil erosion projects.



Chris Clayton, QCI

ENGINEERING INSPECTOR

Mr. Clayton serves as an Engineering Inspector in the Erosion Sediment Prevention and Control program. He is a QCI with over 15 years of inspection of civil engineering and soil erosion projects.



1.5. Receiving Waters

The waterbodies identified in Figure 1 receive stormwater discharges from the City of Birmingham's MS4 and all are considered impaired waters in some regard with the exception of Valley Creek.

Receiving Water Body Segments	WQS Classification	Impairment/ Pollutant of Concern	TMDLs	Applicable WLAs	Number of Outfalls >36"
Upper Village Creek AL03160111-0408-103 HUC03160111-140	LWF	Pesticides (Dieldrin), Siltation, Zn, pH, Pathogens (eColi)	Siltation (8.3lbs/acre/hr) Zn (17lbs/day) pH (6.0-8.5 s.u.) eColi (2.35E+11 col/day)	Siltation (178,000 lbs/hour) Zn (7lbs/day) pH (6.0-8.5 s.u.) eColi (26% Reduction)	104
Five Mile Creek AL03160111-0406-100	PWS	Pathogens (eColi)	Not Approved	Not Approved	35
Upper Shades Creek AL03150202-0303-100	F&W	Siltation, Turbidity, Pathogens (Fecal)	Siltation (24.7 T/Yr/Km ²) Fecal (1.86E+12 col/day)	Fecal (1.72E+12 col/day)	20
Valley Creek AL03160112-0101	F&W	None	None	None	73
Cahaba River AL03150202-0201-102	OAW; PWS	Nutrients (TP)	35µgms/L-TP	100µgms/L-TP	27

Applicable water quality standards used by the City of Birmingham are available at [Antidegradation Water Quality Standards \(ADEM\). 2017](#). A map of all City watersheds and their associated outfalls greater than 36" in diameter are located in this report under the water quality monitoring and reporting control measure.



1.6. Endangered and Threatened Species and Critical Habitat

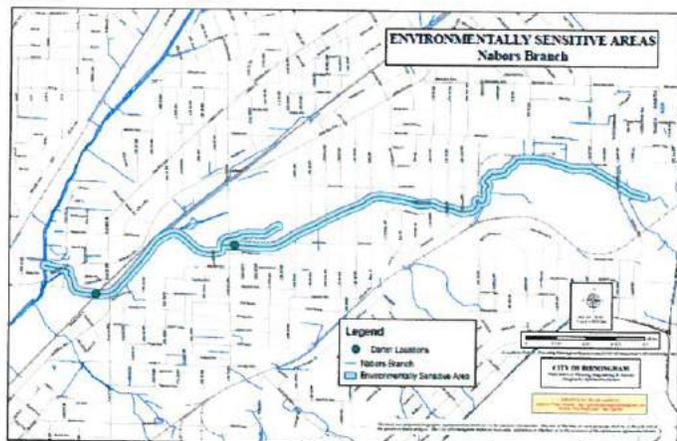


The City of Birmingham includes two priority areas having the presence of critical habitat for endangered and/or threatened species, particularly the Watercress Darter (*Etheostoma nuchale*), which is located in the headwaters of Village Creek and a lower tributary to Valley Creek. The figure at left is located in the headwaters of Village Creek, just upstream of VIC01.6s in the Don A. Hawkins/Roebuck Municipal Golf Course. The other location is at two locations in the Nabors Branch to Valley Creek near Bessemer. The City's NPDES MS4 Permit requires in Part IIB.4. that when evaluating the threat to water quality, the following factor must be considered, which includes sensitivity of receiving waterbodies, proximate to receiving waterbodies, non-storm water discharges, and other factors deemed relevant to the MS4. Therefore, any work being done or allowed to be done by the City of Birmingham in close proximity to the endangered and threatened species locations must be taken into account when determining any necessary BMP controls. Work can include construction site storm water runoff control and the application of

pesticides, herbicides, and fertilizers (PHF). The steps to be taken by the City of Birmingham to protect these areas during application of PHF is provided for in the control measure section.

1.7. Map of Separate Storm Sewer System (MS4)

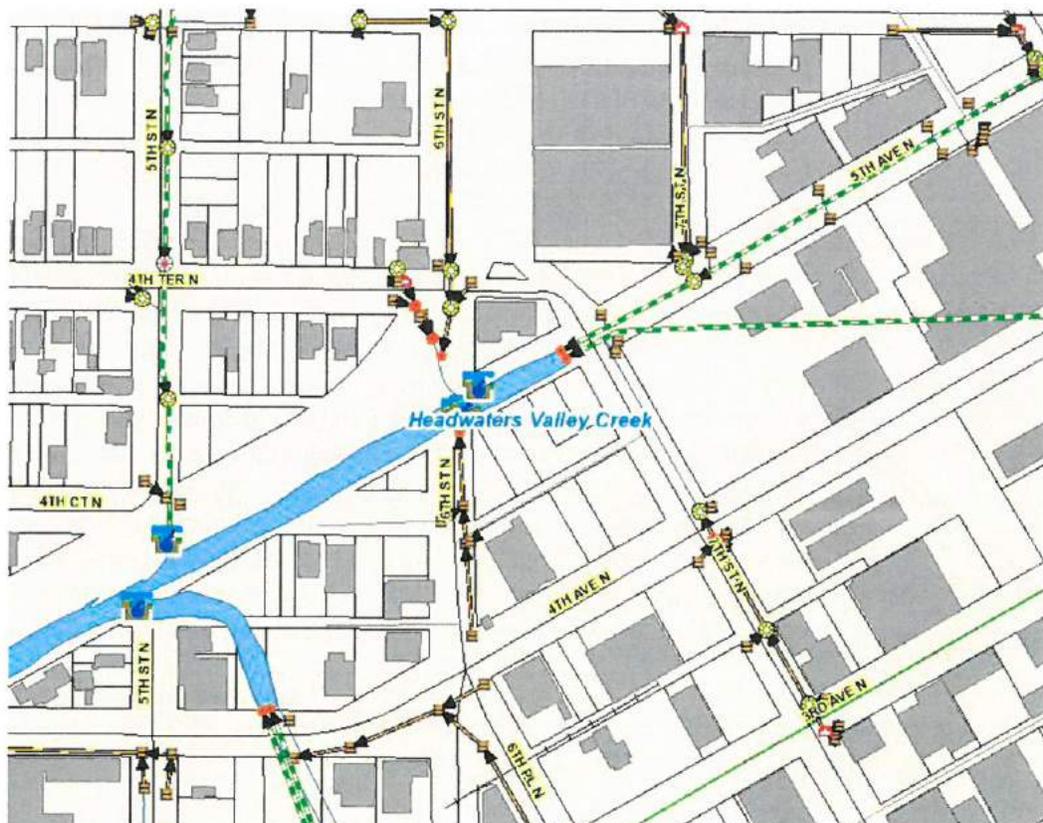
The City of Birmingham continues to work to improve the quality of storm sewer mapping throughout the City. It is estimated that at present approximately 30% of the City's storm sewer system is fully mapped. This figure does not include those areas where storm sewer system connections are not required due to steep slopes and the presence of curb and gutter systems used to convey water downhill to a primary system collector.



The City has elected to address the mapping issues through the illicit discharge detection and elimination (IDD&E) system program. When an illicit discharge is identified, one City survey crew is tapped to identify the full extent of the storm sewer drainage network in the sub-drainage basin associated with that outfall. As that is developed, over time the entire City drainage network will have been identified. For example, the City had known about and IDD&E discharge near the Elder Street Bridge outfall. The City also knew that particular outfall was a City owned outfall. However, it wasn't until Stormwater Management purchased the necessary survey equipment and dedicated one survey crew to identify the full extent of the drainage system in the Crestwood/Montevallo area that we were able to identify the



IDD&E connection to the City’s MS4 within 1-day. That matter is now resolved and the illicit discharge has now been completely eliminated from discharge into Shades Creek. This process is being repeated not in portions of Valley Creek where other illicit discharges are being observed.



An example of a current City map of the Headwaters of Valley Creek is depicted in the figure at left. This map shows the drainage lines, connection points, and storm inlets in proximity to Valley Creek. This is an area being resurveyed to add more detail.

2.0. Storm Water Control Measures – Following Sections:

- Structural Controls
- Public Education and Public Involvement on Stormwater Impacts
- Illicit Discharge Detection and Elimination (IDD&E)
- Construction Site Storm Water Runoff Control
- Post-Construction Stormwater Management in Qualifying New and Re-Development
- Spill Prevention and Response
- Pollution Prevention/Good Housekeeping for Municipal Operations
- Application of Pesticide, Herbicide, and Fertilizers (PHFs)
- Oils, Toxics, and Household Hazardous Waste Control
- Industrial Storm Water Runoff
- Water Quality Monitoring and Reporting