# City of Montgomery

103 North Perry Street
Montgomery, Alabama 36104

# Stormwater Management Program (SWMP) Plan

## NPDES Permit No. ALS000004

October 2020



Prepared By:

HYDRO ENGINEERING SOLUTIONS
A DIVISION OF HYDRO, LLC

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## Program Administration

# 1. Program Administration

## 1.1. Introduction

In 1990, the U.S. Environmental Protection Agency (EPA) promulgated regulations establishing Phase I of the National Pollutant Discharge Elimination Systems (NPDES) stormwater program. The Phase I program for municipal separate storm sewer systems (MS4s) requires operators of "medium" and "large" MS4s that generally serve populations of 100,000 or greater to implement a stormwater management program as a means to control to the maximum extent practicable (MEP) polluted discharges from certain municipal, industrial and construction activities into the MS4.

The Alabama Department of Environmental Management (ADEM) presently has primary jurisdiction over permitting and enforcement of the Stormwater Program for Alabama. The City of Montgomery was issued NPDES Permit Number ALS000004 on 10 January 2020. The City's NPDES Permit became effective on 1 February 2020 and expires on 31 January 2025. The City of Montgomery is required to develop and implement a Stormwater Management Program (SWMP) in accordance with the NPDES Permit requirements. A copy of the NPDES Permit is provided in Appendix A.

The City of Montgomery's SWMP has been updated to address the stormwater pollution prevention and management programs described in the NPDES Permit. Part II.B of the NPDES Permit describes 10 program elements that are required to be incorporated in the City's SWMP.

1. Structural Controls;
2. Public Education and Public Involvement on Stormwater Impacts;
3. Illicit Discharges Detection and Elimination (IDDE);
4. Construction Site Stormwater Runoff Control;
5. Post-Construction Stormwater Management in New Development and Redevelopment;
6. Spill Prevention and Response;
7. Pollution Prevention / Good Housekeeping for Municipal Operations;

8. Application of Pesticide, Herbicide, and Fertilizer (PHFs);
9. Oil, Toxics, and Household Hazardous Waste Control; and,
10. Industrial Stormwater Runoff.

The Stormwater Management Program (SWMP) Plan has been developed to generally describe the City of Montgomery's efforts to maintain compliance with the requirements of NPDES Permit ALS000004. This document is intended to be a dynamic document and shall be revised as needed to accurately reflect the City's activities in implementing its SWMP.

## 1.2. SWMP Plan Objectives

The City of Montgomery's SWMP is a MS4 specific comprehensive program developed to accomplish the following objectives to the MEP:

- Reduce discharge of pollutants from MS4;
- Monitor City owned stormwater structural controls;
- Identify and eliminate illicit discharges and improper disposal into the storm sewer;
- Develop, implement, and enforce controls to minimize pollutants from construction activities;
- Develop and implement pollution prevention / good housekeeping practices for municipal operations;
- Develop and implement post-construction stormwater management practices for new developments and redevelopments;
- Reduce discharges of pollutants from the application of pesticides, herbicides, and fertilizers;
- Prevent, contain, and respond to spills that may discharge into the MS4;
- Monitor and control pollutants in stormwater discharges from industrial facilities (such as municipal landfills, hazardous waste treatment, sewage treatment, storage, disposal and recovery facilities subject to Emergency Planning and Community Right to Know Act (EPCRA) Title III, Section 313); and,

- Implement public education activities regarding the stormwater management program, recycling programs, household hazardous waste and proper disposal, etc.

The City's efforts to maintain and comply with the NPDES Permit to the MEP shall be described in the MS4 Annual Report.

## 1.3. Legal Authority

The City's Code of Ordinances is available electronically through the City's website. A summary of the Ordinances applicable to the City's stormwater program are provided in the following sections.

### 1.3.1. Zoning Ordinance

The City of Montgomery adopted a Zoning Ordinance (Ordinance No. 38-63) on 17 September 1963. The Zoning Ordinance has been amended several times since initial adoption with the latest revision occurring in 2019. Components of the Zoning Ordinance include the following:

- Classification and Establishment of Districts;
- Enforcement;
- Board of Adjustment;
- Amendment (of the Zoning Ordinance);
- Legal Status Provisions;
- General Provisions (including the SmartCode provision);
- District Regulations (including specific information related to Residential, Industrial, Flood Hazard, and Waterfront Recreation Districts);
- Airport Hazard Areas; and
- Outdoor Advertising Signs and Structures.

The latest version of the Zoning Ordinance is incorporated into the SWMP Plan by reference and is available on the City's website at:

https://www.montgomeryal.gov/home/showdocument?id=9989.

### 1.3.2. Subdivision Regulations

The City of Montgomery adopted Subdivision Regulations on 28 February 1985. The Subdivision Regulations have been amended several times since initial adoption with the latest revision occurring in 2004. The Subdivision Regulations address the following:

- Authority and jurisdiction;
- Procedures;
- Requirements for plats and supplementary data;
- Design standards;
- Required improvements (including storm drainage);
- Requirements for residential and non-residential subdivisions;
- Variances;
- Definitions; and,
- Severability clause.

Requirements for storm drainage improvements are provided in Section V, subsection E. The requirement states that storm sewers or drains should be provided and designed to carry stormwater from a maximum projected rainfall to occur once in 25 years. The requirement also requires a runoff factor of 90% should be applied to pavements and buildings and a variable runoff factor depending on the topography of the ground for other areas.

The latest version of the Montgomery Subdivision Regulations is incorporated into the SWMP Plan by reference and is available the City's website at:

https://www.montgomeryal.gov/home/showdocument?id=196.

### 1.3.3. Flood Damage Prevention Ordinance

On 4 August 2010, the City of Montgomery adopted revisions to the Flood Damage Prevention Ordinance (Ordinance No. 27-2009). The purpose of this ordinance is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas of provisions designed to:

- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which increase flood heights, velocities, or erosion;
- Control filling, grading, dredging and other development which may increase flood damage or erosion;
- Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands; and,

- Control the alteration of natural flood plains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters.

The latest version of the Flood Damage Prevention Ordinance is incorporated into the SWMP Plan by reference and is available the City's website at:

https://library.municode.com/al/montgomery/codes/code_of_ordinances.

### 1.3.4. Erosion and Sedimentation Control Ordinance

On 15 October 2013, the City of Montgomery adopted an Erosion and Sediment Control (ESC) Ordinance (Ordinance No. 56-2013). The ordinance establishes the following guidelines for prohibiting, monitoring, and enforcing illicit discharges within the City's MS4:

- Administration: Erosion and sediment control will be administered, implemented and enforced by the City Engineer or his designee.
- Review of Construction Best Management Practices (CBMP) Plan: Requires review and approval of a CBMP Plan prior to commencing land-disturbing activities.
- Grading Permit Requirement: Requires owners to obtain a grading permit prior to performing land-disturbing activities.
- Defines Land-disturbing Activities: Establishes clear definitions of what requires a grading permit and what is exempt. Examples of projects not requiring grading permits include minor home repairs and additions, agriculture, minor utility work of less than 1,000 linear feet, excavating burial sites, etc.
- CBMP Plan Requirements and BMP Approval Requirements: Establishes requirements for plans and performance of Best Management Practices (BMPs) for land-disturbing activities.
- Bond Requirements: Requires a letter of credit or surety bond in the amount of $1,000 for each cleared acre and $3,000 for each acre of earthwork operations.
- Compliance Inspection: Allows City Officials the right of entry to inspect, evaluate, request information, and monitor land-disturbing activities.

- Notification of Accidental Discharges and Spills: Requires responsible parties to notify the City in the event of an accidental discharge or spill within a required time frame.

- Violations, Enforcement, and Penalties: The City has an escalating level of enforcement actions it may pursue if violations occur. The City may issue a warning notice, compliance order, stop work order, or a notification of violation. The notification of violation is administered through a City Official as a Uniform Non-Traffic Citation and Complaint. Fines for violations are $60.00 for a first violation, $150.00 for a second violation (within a 30-day period), and a court appearance and penalty from a municipal judge for a third violation. After 90 days from rectification of all violations, further violations will be counted as first violations.

### 1.3.5. Illicit Discharge Detection and Elimination Ordinance

On 15 October 2013, the City of Montgomery adopted an Illicit Detection and Elimination (IDDE) Ordinance (Ordinance No. 56-2013). The ordinance establishes the following guidelines for prohibiting, monitoring, and enforcing illicit discharges within the City's MS4:

- Administration: The IDDE Program will be administered and implemented by the City Engineer.

- Prohibition of Illicit Discharges and Illicit Connections: Prohibits the discharge of pollutants or waters containing pollutants into the City's MS4. The ordinance provides a list of activities that are not considered to be a source of pollution that includes but are not limited to water line flushing, air conditioning drains, dechlorinated swimming pools, dye testing, etc.

- Industrial or Construction Activity Discharges: Requires industries with individual, general, or construction NPDES permits to report compliance information to the City for review.

- Compliance Monitoring: Allows the City right of entry for inspection, sampling, and monitoring.

- Prevent, Control, and Reduce Stormwater Pollutants through BMPs: Requires all commercial, industrial, and high-risk facilities to identify, implement, and maintain BMPs to prevent pollution of stormwater to the maximum extent practicable.

- Notification of Accidental Discharges and Spills: Requires responsible parties to notify the City in the event of an accidental discharge or spill within a required time frame.

- Violations, Enforcement, and Penalties: The ordinance provides the City with an escalating level of enforcement actions it may pursue if violations occur. The City may issue a warning notice, compliance order, stop work order, or a notification of violation. The notification of violation is administered through a City Official as a Uniform Non-Traffic Citation and Complaint. Fines for violations are $60.00 for a first violation, $150.00 for a second violation (within a 30-day period), and a court appearance and penalty from a municipal judge for a third violation. After 90 days from rectification of all violations, further violations will be counted as first violations.

Copies of documents listed in this section are provide electronically on a CD in Appendix B. The City posts new ordinances, updates and amendments online at the following link:

https://library.municode.com/al/montgomery/codes/code_of_ordinances.

## 1.4. SWMP Revision

Revisions to the SWMP Plan shall be documented in Table 1.1.

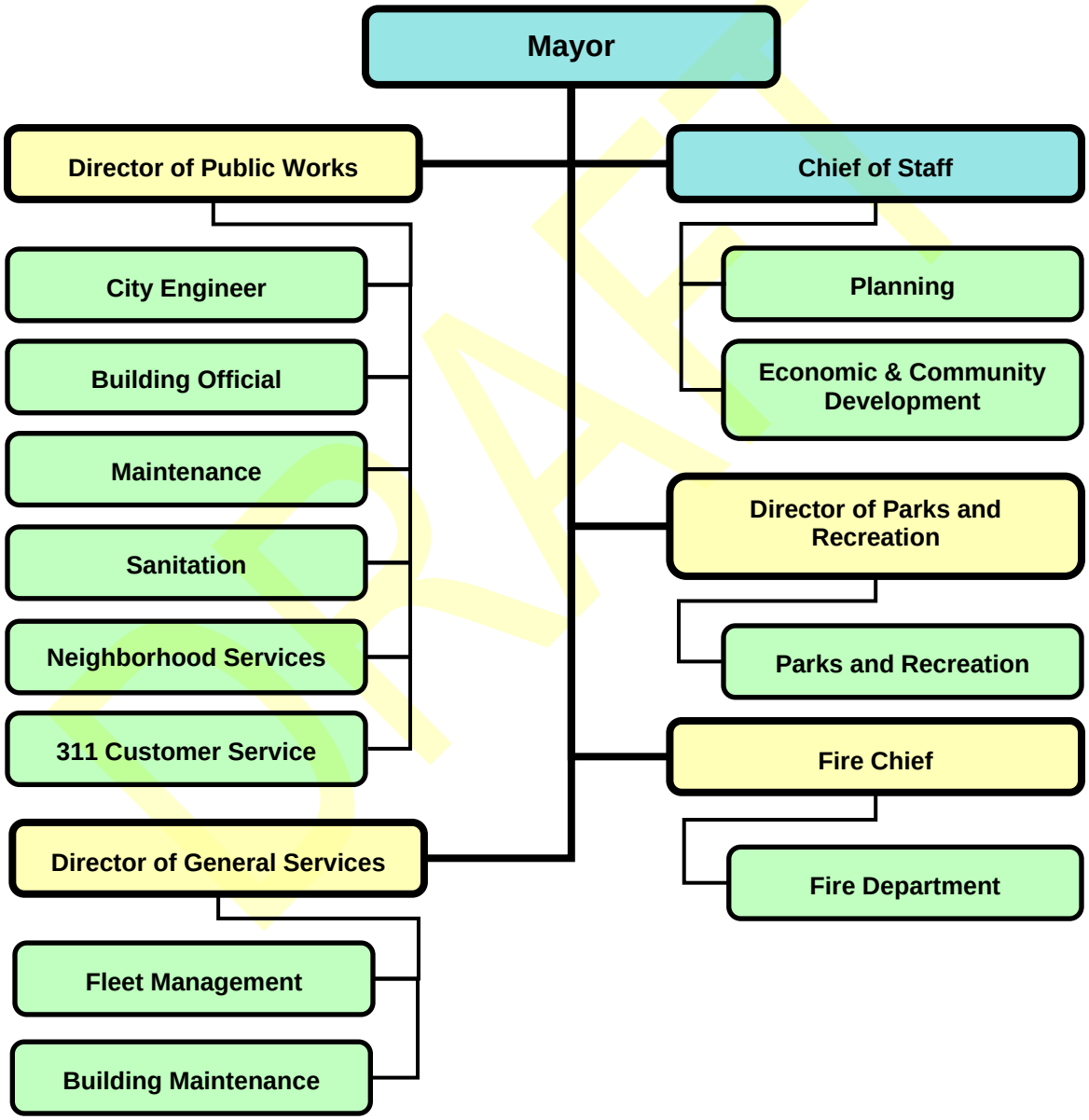
**Table 1.1 SWMP Plan Revision Record**

| Date: | Revised By: | Description of Revision: |
|---|---|---|
| 5 May 1993 | City of Montgomery | Initial Stormwater Management Program (SWMP) Plan |
| 29 February 2012 | Hydro Engineering Solutions, LLC | Updated SWMP Plan |
| 14 December 2012 | Hydro Engineering Solutions, LLC | Annual update of program goals for each program element |
| 10 December 2013 | Hydro Engineering Solutions / Trimble | Annual update of program goals for each program element |
| 25 June 2014 | Hydro Engineering Solutions / Trimble | Update to incorporate additional requirements of the City's new NPDES Permit (ALS000004) |
| 30 September 2014 | Trimble Navigation Limited | Annual review and update |
| 30 September 2015 | Trimble Navigation Limited | Annual review and update |
| 30 September 2016 | Hydro Engineering Solutions | Annual review and update |
| 30 September 2017 | Hydro Engineering Solutions | Annual review and update |
| 30 September 2018 | Hydro Engineering Solutions | Annual review and update |
| 30 September 2019 | Hydro Engineering Solutions | Annual review and update |
| 30 September 2020 | Hydro Engineering Solutions | Update to incorporate additional requirements of the City's new NPDES Permit (ALS000004) |
| | | |
| | | |

## 1.5. Program Administration

The City's general organizational structure for administrating its SWMP Plan is provided in Figure 1.1. The specific organizational structure associated with implementation of each program element is described in the following sections.

**Figure 1.1 SWMP Organizational Chart**



The Public Works Department has been tasked with the responsibility of overseeing the City's SWMP. Responsibilities include but are not limited to the following:

- Development and implementation of the SWMP Plan;
- Coordination with other City Departments;
- Development of Annual Report; and,
- Coordination with regulatory agencies.

## 1.6. 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 fine and imprisonment for knowing violations.

| | |
|---|---|
| Chris Conway, P.E. | Public Works Director |
| Name | Title |
| | |
| Signature | Date |

Address: P.O. Box 1111
Montgomery, Alabama 36101-1111

Phone: (334) 625-2000

In March 2010, the City identified the Public Works Director and City Engineer as a "duly authorized representative" of the "responsible official." Supporting documentation is provided in Appendix B.

# SECTION 2

MS4 Area

## 2.1. MS4 Characterization

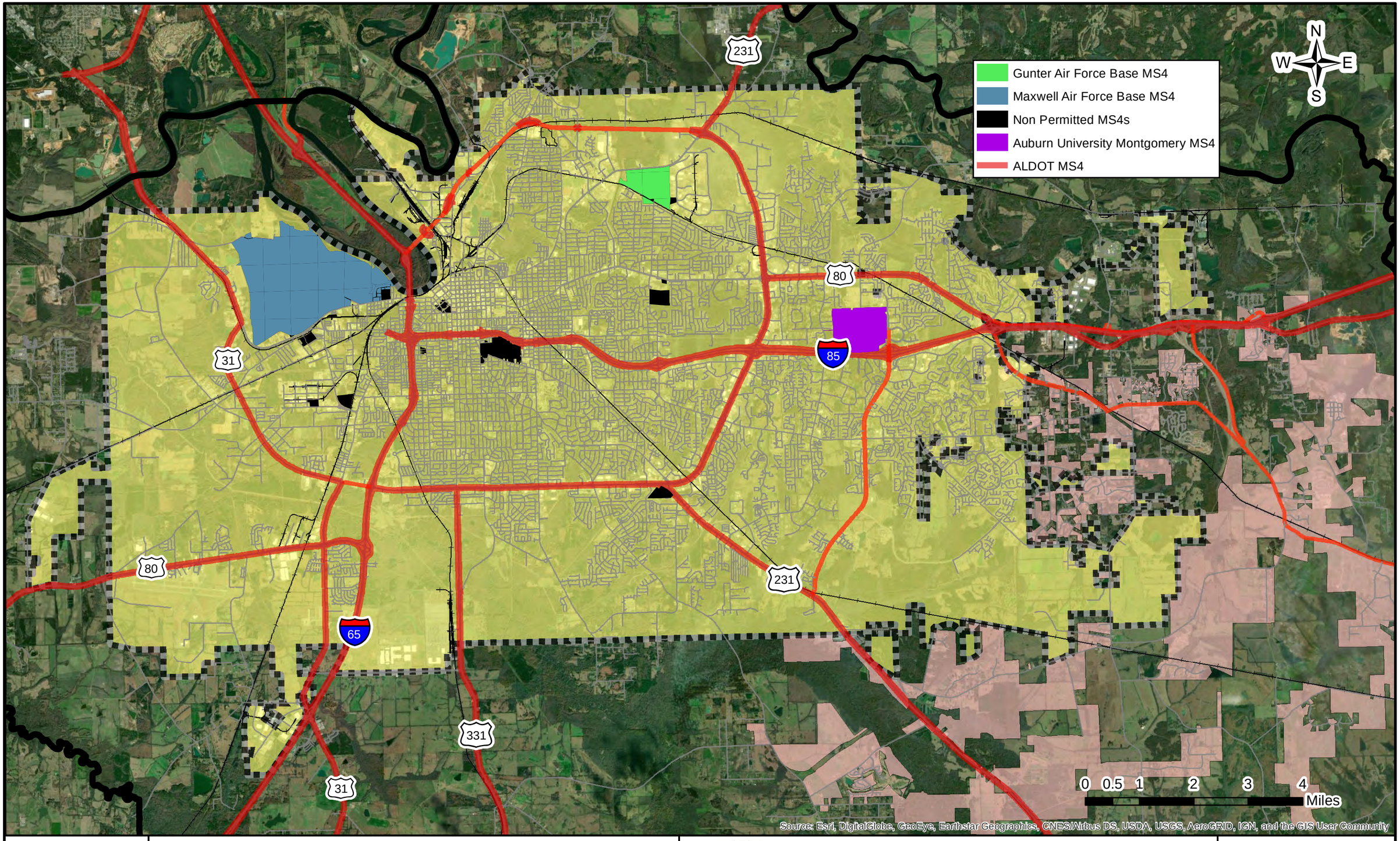
The City of Montgomery occupies approximately 162.14 square miles along the Alabama River in the central part of the state. The Town of Pike Road is the only city within Montgomery County that shares borders with the City of Montgomery.

There are several federal facilities, state facilities, military bases, universities, and state roads located within the City that are exempted from the City's regulations and enforcement authority. The City has initiated an effort to identify and inventory areas of the City that are not part of the MS4. The current inventory is summarized in Table 2.1.

**Table 2.1 Non-Regulated Areas**

| Non-Regulated Area | MS4 NPDES Permit No. |
|---|---|
| **Federal Facilities** | |
| Maxwell Air Force Base | ALR040035 |
| Maxwell / Gunter Annex | ALR040029 |
| Veterans Administration Hospital | |
| **State Facilities** | |
| Alabama Department of Transportation | ALS000006 |
| Alabama National Guard | |
| Alabama State Troopers | |
| **Universities** | |
| Auburn University Montgomery | ALR040062 |
| Alabama State University | |
| Trenholm Technical College | |
| Troy University Montgomery | |

The City of Montgomery's corporate limits, Montgomery County boundary, major roads, major streams, and surrounding communities are presented in Figure 2.1.

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Pike Road

# CITY OF MONTGOMERY

MS4 Area

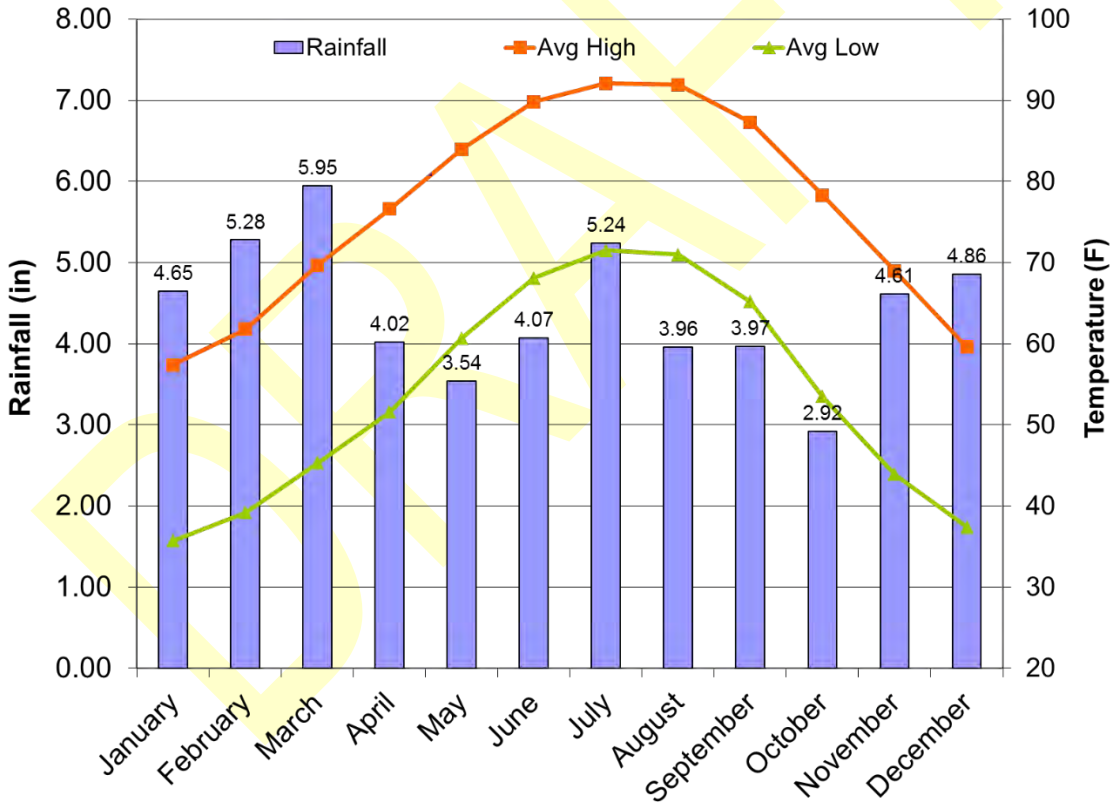
Figure 2-1

October 2020

### 2.1.1. Climate

Montgomery has a humid subtropical climate with short mild winters, warm springs and autumns, and long, hot humid summers. Winter temperatures average 46.6ºF in January with lows rarely dipping below 20ºF. Summer temperatures average 81.8ºF in July with highs exceeding 90ºF for more than 75 consecutive days per year. The Montgomery area receives approximately 55 inches of rainfall annually. Rainfall tends to be evenly distributed throughout the year with dryer periods occurring during late summer and early fall. Light snowfall occurs in some winters. Average monthly rainfall and temperatures are summarized in Figure 2.2. Significant snow fall events are rare in Montgomery.

**Figure 2.2 Average Monthly Rainfall and Temperatures**

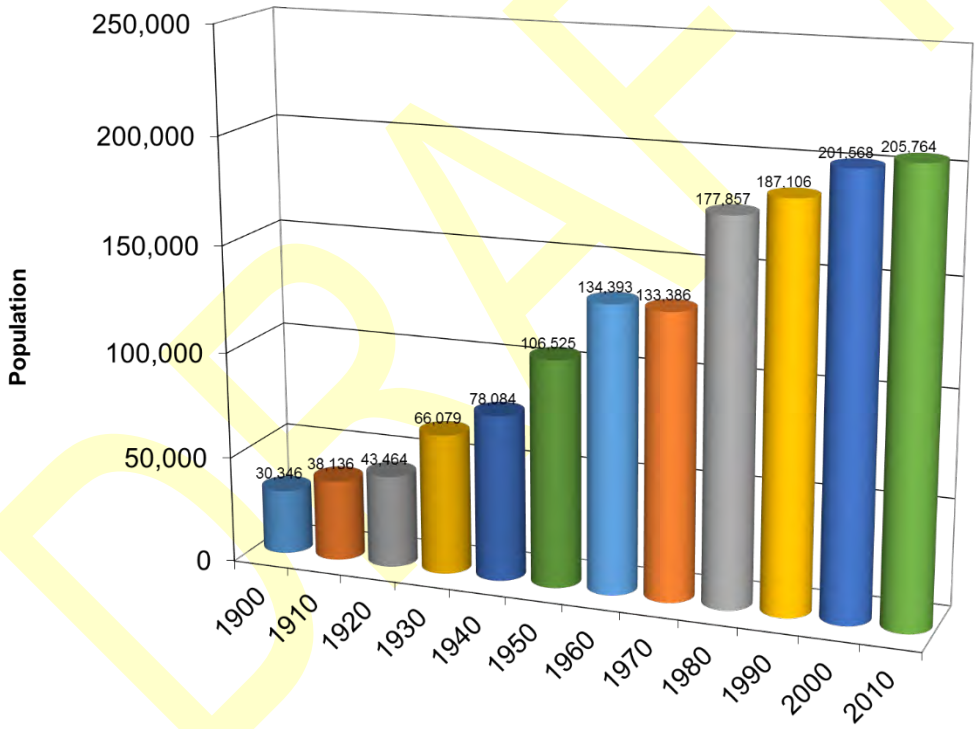


### 2.1.2. Population

Since the City of Montgomery was incorporated in 1819, the City has experienced a steady increase in population. Figure 2.3 provides a graph showing the historical population of the City since 1900.

The 2010 Census estimated the total population of the City of Montgomery to be 205,764. As compared to the population in 2000 of 201,568, the City experienced a population increase of 4,196 (approximately 2.1%) during that 10-year period. Based on 2019 population estimates, the City of Montgomery may have reduced population slightly to 198,525 residents.

**Figure 2.3 Historical Population**



### 2.1.3. Watersheds

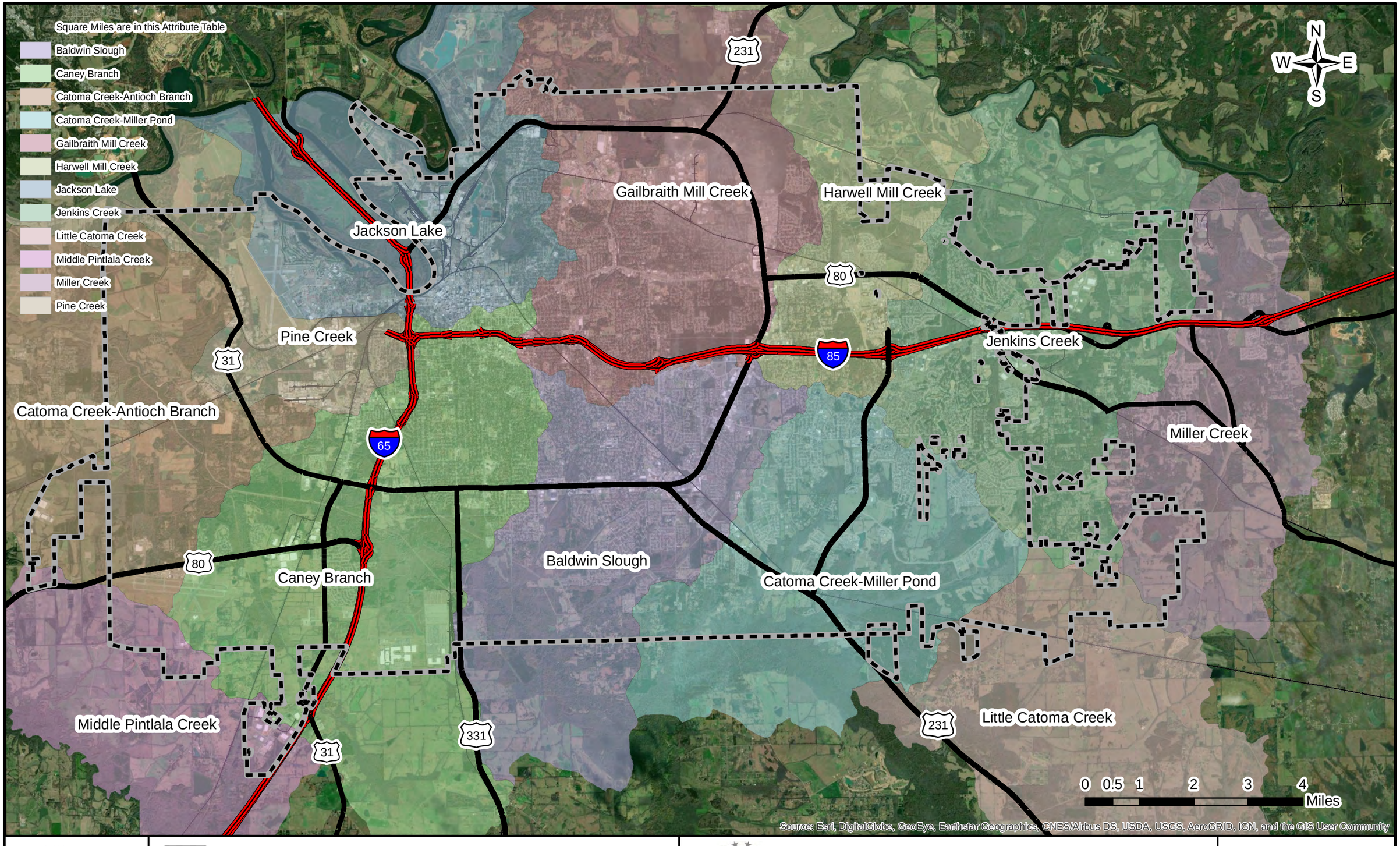
In order to develop, implement, and maintain an effective stormwater management program that minimizes pollutant discharges in stormwater runoff, it is important for the City to be knowledgeable of the following:

- Major drainage basins within the City;
- Water quality concerns of each drainage basin; and,
- Potential sources of pollutants by land use.

The City of Montgomery is located within thirteen drainage basins that have a 12-digit Hydraulic Unit Classification (HUC-12). The City has further subdivided each HUC-12 watershed into smaller sub-watersheds based on the major drainage channels located within the City. The area of the City located within each HUC-12 drainage basin is summarized in Table 2.2 and shown in Figure 2.4.

**Table 2.2 HUC 12 Drainage Basins**

| | City of Montgomery | |
|---|---|---|
| **HUC 12 Basin** | **Area ($mi^2$)** | **Area (% of City)** |
| **Alabama River Basin** | **136.15** | **83.42** |
| Caney Branch | 28.59 | 17.53 |
| Gailbraith Mill Creek | 24.34 | 14.93 |
| Baldwin Slough | 19.83 | 12.16 |
| Catoma Creek – Miller Pond | 19.71 | 12.09 |
| Catoma Creek – Antioch Branch | 16.15 | 9.90 |
| Jackson Lake | 13.27 | 8.14 |
| Pine Creek | 8.30 | 5.09 |
| Little Catoma Creek | 3.44 | 2.11 |
| Middle Pintlala Creek | 2.52 | 1.54 |
| **Tallapoosa River Basin** | **25.99** | **15.92** |
| Harwell Mill Creek | 11.17 | 6.85 |
| Jenkins Creek | 12.52 | 7.68 |
| Miller Creek | 2.30 | 1.41 |

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City of Montgomery

**CITY OF MONTGOMERY**

HUC 12 Watersheds

Figure 2-4

October 2020

### 2.1.4. Land Use

The City maintains a GIS layer to track zoning and land use throughout the City. Major zoning districts are summarized in Table 2.3.

**Table 2.3 Major Land Use Districts**

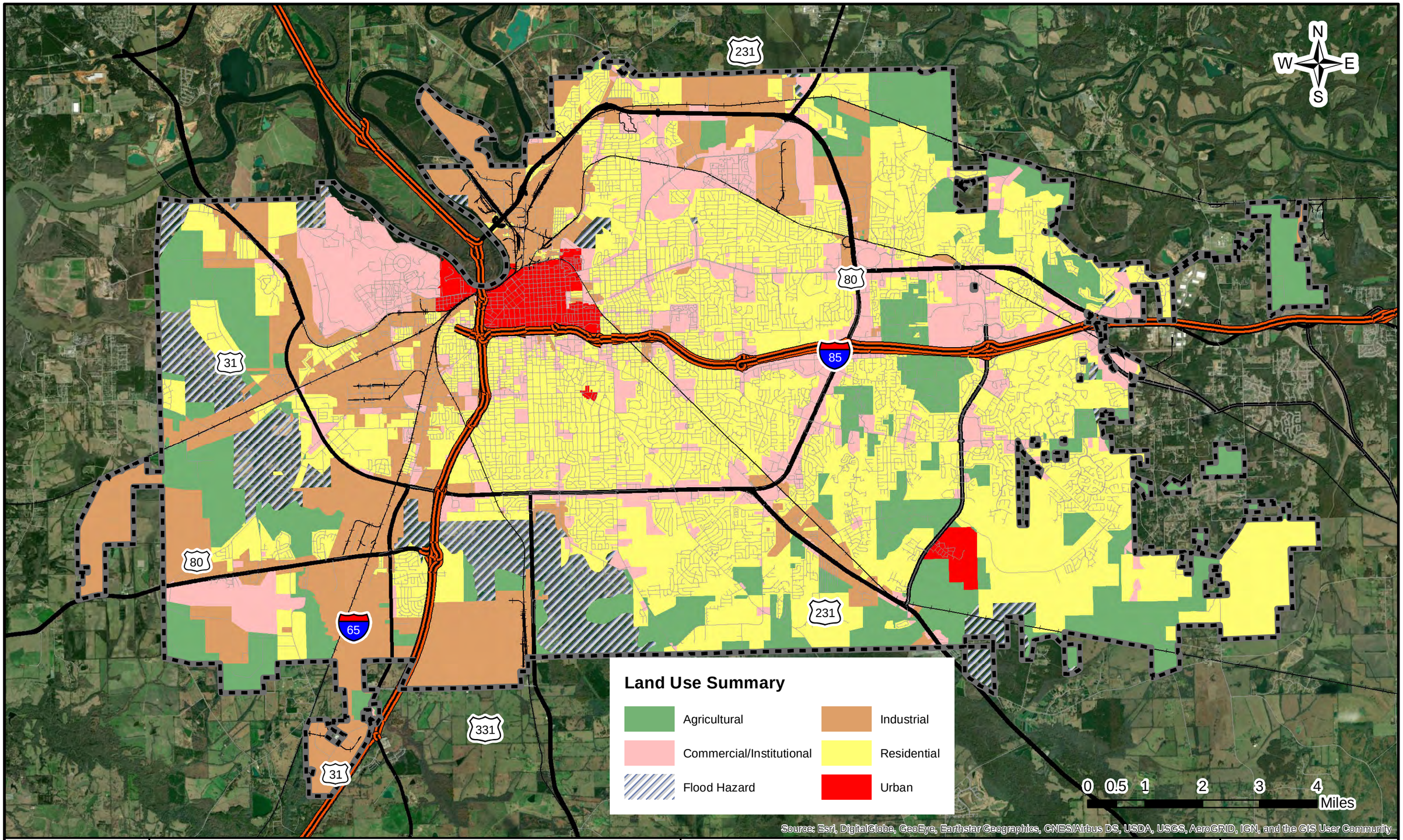
| Major Land Use Districts | | |
|---|---|---|
| Agricultural | Industrial | Waterfront |
| Commercial | Residential | Office |
| Flood Hazard | Institutional | Smart Code |

Each major district is further subdivided into more detailed subcategories that characterize specific land use or land cover. Zoning districts for commercial, institutional, and office have been combined into commercial / institutional. A summary of the approximate land use within the City is summarized in Table 2.4 and shown in Figure 2.5.

**Table 2.4 Land Use Summary**

| Use | Area ($mi^2$) | Area (%) |
|---|---|---|
| Residential | 68.91 | 42.50 |
| Industrial | 30.96 | 19.09 |
| Agricultural | 25.48 | 15.71 |
| Commercial / Institutional | 23.14 | 14.27 |
| Flood Hazard | 9.79 | 6.04 |
| Urban | 3.02 | 1.87 |
| Not Zoned | 0.84 | 0.52 |
| Total | 162.14 | 100.00 |

Overlapping the land use with watershed boundaries will provide the City with the information needed to identify and implement BMPs that are targeted to help improve water quality.

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City of Montgomery

**CITY OF MONTGOMERY**

Land Use Summary

Figure 2-5

October 2020

## 2.2. Known Problems

Section 303(d) of the Clean Water Act (CWA) establishes that states are to identify and list waters (rivers, streams, etc.) for which technology-based limits alone do not ensure attainment of applicable water quality standards. The 303(d) list of impaired waters will include a priority ranking for establishment of Total Maximum Daily Loads (TMDLs) for these waters. The state will establish a TMDL that will meet water quality standards for impaired streams, considering seasonal variations and a margin of safety that accounts for uncertainty. TMDLs establish the maximum amount of a pollutant that a water body can assimilate without exceeding water quality standards. Once a TMDL is developed for a water, that water will be removed from the 303(d) list.

### 2.2.1. 303(d) Listed Streams

According to ADEM's 303(d) list dated 17 September 2018, there are two streams within the City that have been designated as impaired. ADEM's 303(d) listed streams located within the City are summarized in Table 2.5 and shown in Figure 2.6 .

**Table 2.5 2020 303(d) Listed Streams**

| Waterbody | | Designated Use | Pollutant of Concern | Sources |
|---|---|---|---|---|
| Name | ID | | | |
| Three Mile Branch | AL03150201-0104-302 | Fish and Wildlife | Siltation (Habitat Alteration) | Urban Development |
| | | | Pesticides (Dieldrin) | Unknown Source |
| Jenkins Creek | AL03150110-0904-300 | Fish and Wildlife | Siltation (Habitat Alteration) | Urban Runoff Storm Sewers |

Three Mile Branch is approximately 7.65 miles long and has a total drainage basin of approximately 10.81 square miles. The headwaters of Three Mile Branch originate in the City. There is an ongoing Dieldrin remediation project at the Maxwell-Gunter Airforce Base immediately adjacent to Three Mile Branch. It is unknown if this is the primary source of Dieldrin contributing to the impairment on Three Mile Branch.

Jenkins Creek is approximately 13.48 miles long. The headwaters of Jenkins Creek are located in the City of Montgomery and Town of Pike Road.

### 2.2.2. Approved TMDLs

EPA has approved ADEM's Total Maximum Daily Loads (TMDLs) for selected stream segments on Catoma Creek, an unnamed tributary to Little Catoma Creek, and Three Mile Branch. Pollutants of concern for each stream segment are summarized in Table 2.6.

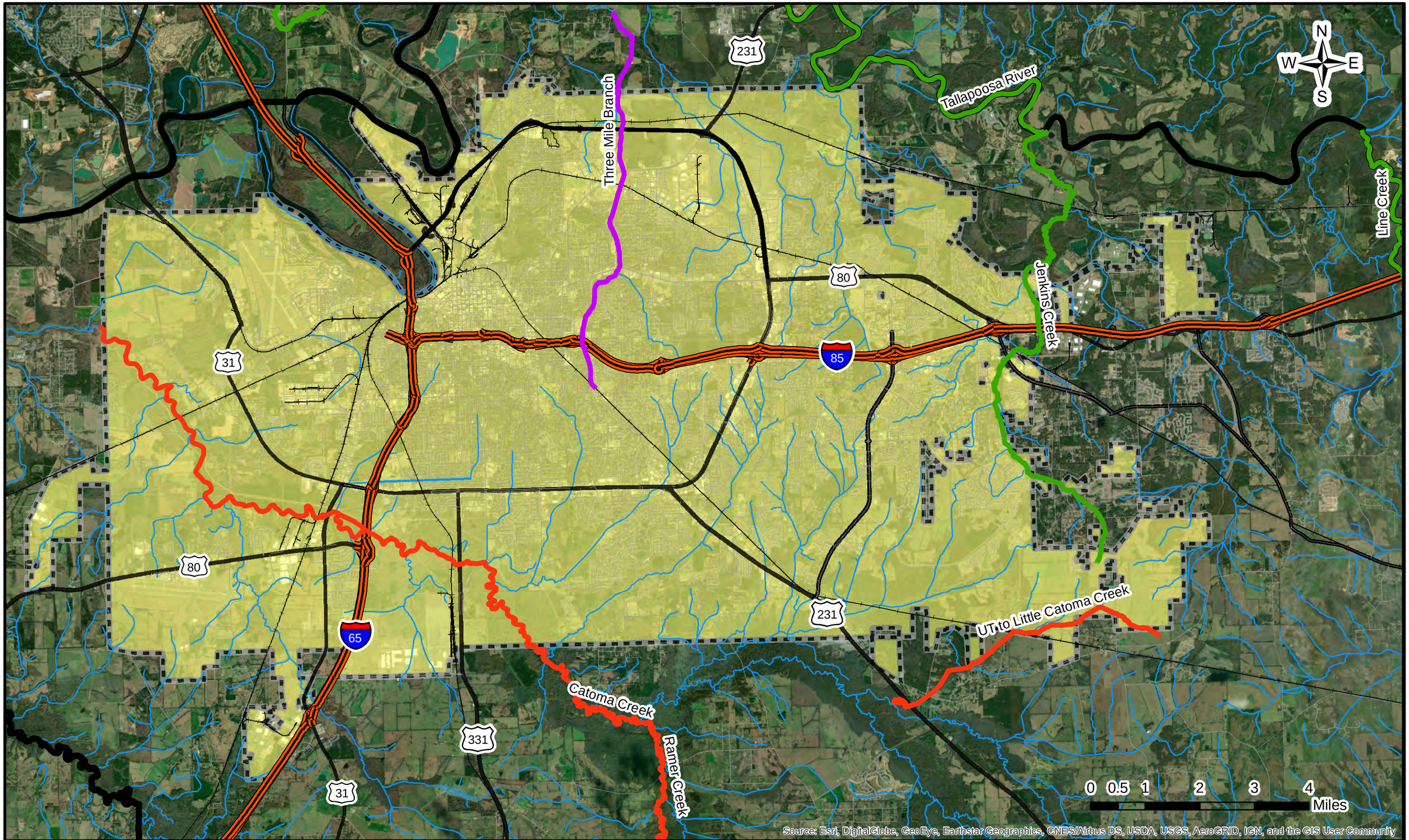
**Table 2.6 Approved TMDLs**

| Waterbody | | Pollutant of Concern | Date of Approval |
|---|---|---|---|
| Name | Assessment ID | | |
| Catoma Creek | AL03150201-080-01 | Organic Enrichment Low Dissolved Oxygen | July 2005 |
| | AL03150201-0309-100 | Pathogens | September 2009 |
| UT to Little Catoma Creek | AL03150201-0304-200 | Organic Enrichment Low Dissolved Oxygen | July 2005 |
| Three Mile Branch | AL03150201-0104-302 | Pathogens | September 2019 |

The location of streams where a TMDL has been developed are shown in Figure 2.6.

Catoma Creek originates in southeastern Montgomery County and flows northwest through Montgomery County into Woodruff Reservoir located west of the City of Montgomery. The impaired portion of Catoma Creek is from the Alabama River upstream to Ramer Creek. This 23.2 mile segment was placed on the State's 303(d) use impairment list for organic enrichment in 1996 and pathogens in 2002. The drainage basin is approximately 358 square miles.

Three Mile Branch is discussed in the previous section.

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City of Montgomery
TMDL
TMDL and 303(d)
303(d)

**CITY OF MONTGOMERY**

2019 TMDL and 303(d) Streams

Figure 2-6

October 2020

# SECTION 3

## Structural Controls

# 3. Structural Controls

## 3.1. Introduction

Proper operation and maintenance of structural controls can greatly reduce the potential of flooding and reduce the potential discharge of pollutants to downstream waters. Pollutant loadings from total suspended solids (TSS) can cause high levels of turbidity, particulate concentrations of heavy metals and nutrients.

Through effective and well-maintained structural controls, pollutant loadings from TSS can be significantly reduced. BMPs proven to be effective in reducing pollutant loadings include but are not limited to the following.

- Retention / detention facilities;
- Infiltration practices;
- Vegetated open channel practices;
- Filtering practices; and,
- Wetlands.

The City of Montgomery has implemented and maintained BMPs to provide a means of mitigating the negative impacts of various pollutants that can be carried off by rainfall through the storm sewer system to receiving waters. The City's Structural Controls Program includes the activities described in Part II.B.1 of the NPDES Permit. A description of the BMPs being implemented by the City for this program element is described in the following sections.

## 3.2. Program Administration

Public Works has the overall responsibility for this program element. Specific departments and associated responsibilities are summarized below:

Engineering Department
- Program development
- Inspections

Parks and Recreation Department
- Routine maintenance

## 3.3. Program Components

In accordance with Part II.B.1.a. of the NPDES Permit, structural controls that are owned, operated or the responsibility of the City shall be operated in a manner to reduce the discharge of pollutants to the MEP. A "Structural Control" is defined in the NPDES Permit as "*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 stormwater runoff.*"

The City maintains several detention and retention ponds at various City facilities. Since a detention pond only attenuates peak discharges during a storm event, a detention pond does not provide stormwater treatment and is not considered as a "Structural Control" as defined by the NPDES Permit.

### 3.3.1. Structural Control Inventory

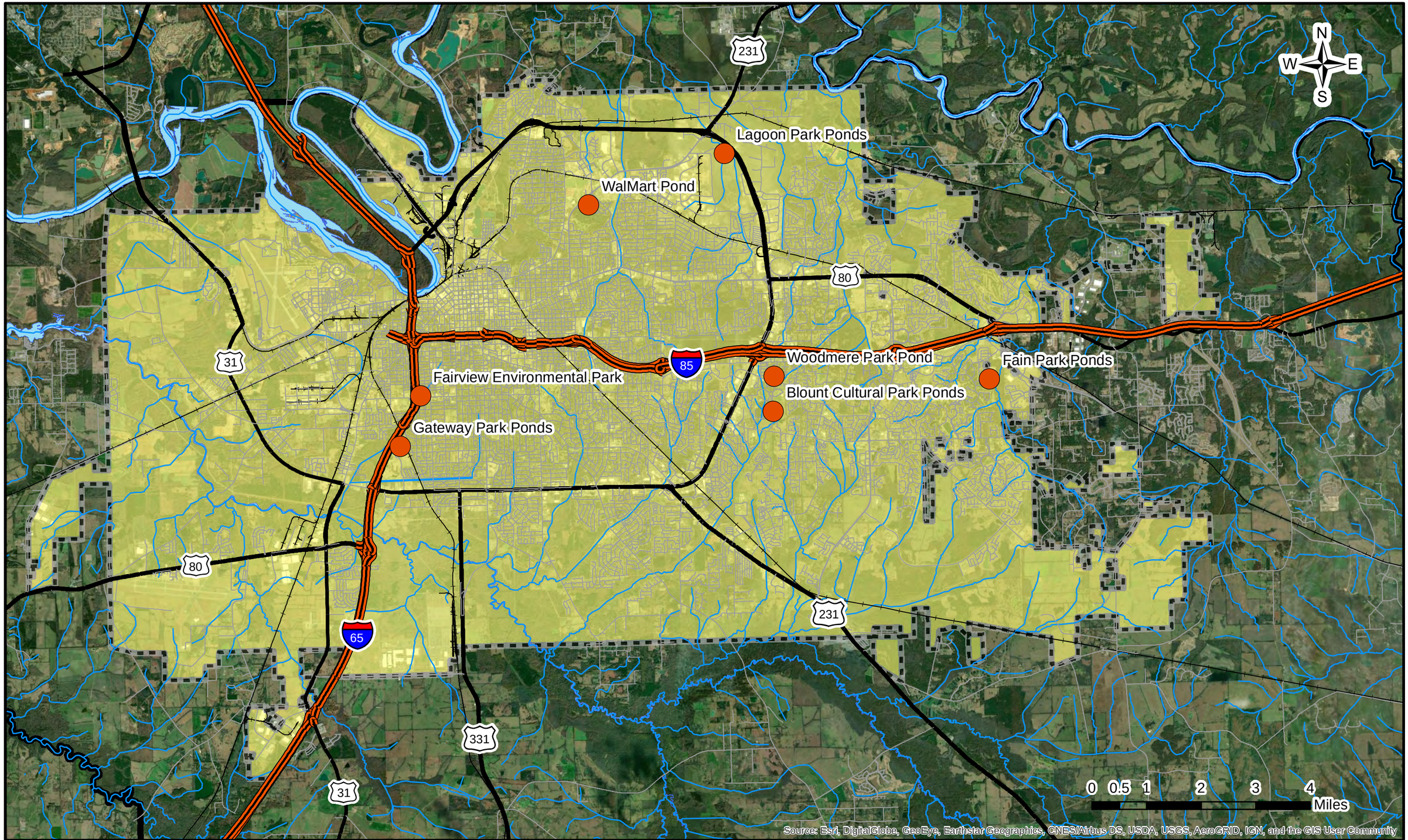
The City maintains several retention ponds at various City facilities. Each structure is inspected on an annual basis. The current inventory of retention ponds is provided in Table 3.1 and shown in Figure 3.1.

**Table 3.1 Structural Controls Inventory**

| Facility | Number of Ponds | Location | Department |
|---|---|---|---|
| Lagoon Park | 2 | Northern Boulevard | Parks and Recreation |
| Gateway Park | 4 | Southern Boulevard | Parks and Recreation |
| Woodmere Park | 1 | Woodmere Drive | Parks and Recreation |
| Fain Park | 2 | Minnie Brown Road | Parks and Recreation |
| Blount Cultural Park | 3 | Festival Drive | Parks and Recreation |
| Wal-Mart Trail | 1 | Congressman Dickinson Boulevard | Parks and Recreation |
| Fairview Environmental Park | 1 | Fairview Avenue | Parks and Recreation |
| Total | 14 | | |

### 3.3.2. Standard Operating Procedures

Standard Operating Procedures (SOPs) developed for the inspection, cleaning, maintenance, and repairs of structural controls are provided in Appendix C.

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City of Montgomery

Structural Control Locations

**CITY OF MONTGOMERY**

Structural Control Inventory

Figure 3-1

October 2020

### 3.3.3. Inspections, Maintenance, and Repairs

The Parks and Recreation Department litter crews routinely visit each structural control. The litter crews are scheduled by location in three districts. During each visit, the litter crew will clean up litter at the site, as necessary. Each visit is recorded in a logbook and is available through the Parks and Recreation Department.

A copy of the litter crew personnel list, list of regularly visited parks, and logbook forms are included in Appendix C.

On an annual basis, the Engineering department shall conduct a more comprehensive inspection of each structural control. A copy of the annual inspection form is provided in Appendix C.

## 3.4. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Structural Controls Program. Program goals are summarized in Table 3.2.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of Structural Controls Program. Results of the program evaluation shall be summarized in the Annual Report.

**Table 3.2**
**Structural Controls – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Structural Control Inventory | Structural control inventory | Update as needed | 30 September 2021 | Engineering |
| | Update map | Annually | 30 September 2021 | |
| SOPs | Inspection | Update as needed | 30 September 2021 | Engineering |
| | Cleaning | Update as needed | 30 September 2021 | Maintenance |
| | Maintenance and repairs | Update as needed | 30 September 2021 | |
| Inspections | Annual inspection form | Update as needed | 30 September 2021 | Engineering |
| | Annual inspection | Annually | 30 September 2021 | |
| | Routine inspection logbook | Update as needed | 30 September 2021 | Parks & Recreation |
| | Routine inspection | Monthly | 30 September 2021 | |
| Maintenance | Cleaning | Track | 30 September 2021 | Parks & Recreation |
| | Maintenance | Track | 30 September 2021 | |
| Program Evaluation | Evaluate program effectiveness | Annually | 30 September 2021 | Engineering Maintenance |
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# SECTION 4

## Public Education and Public Involvement

# 4. Public Education and Public Involvement

## 4.1. Introduction

The MS4 NPDES permit requires the City to develop, implement and evaluate a public education, involvement, outreach, and participation program. Goals of the program are to:

- Educate the community about the impacts of stormwater discharges into streams, rivers, lakes, and ponds; and
- Identify steps that the community can take to help reduce pollutants in stormwater runoff.
- Provide opportunities for public input and feedback;
- Engage the public to actively participate; and,
- Facilitate opportunities to provide public education.

As the public gains a greater understanding of the benefits of a stormwater program, the City is likely to gain more support for the SWMP and increased compliance with the NPDES permit requirements. Public education and involvement provides a mechanism to help the public understand how their actions can potentially impact stormwater quality. Public participation can also help reduce the amount of pollution generated and identify potential pollution causing activities and/or sources. The City's Public Education and Involvement Program includes the activities described in Part II.B.2 of the NPDES Permit.

## 4.2. Program Administration

Public education and involvement are activities routinely carried out by all departments. The Engineering Department provides assistance and coordination with other departments to facilitate public education and involvement activities associated with the SWMP Plan.

## 4.3. Target Audiences

Development within the City consists of residential, commercial, institutional, and industrial uses. Audiences typically consist of:

- Home owners;
- Renters;
- Schools;
- Business owners and employees;
- Professionals;
- Developers;
- Contractors; and,
- Elected officials.

Educational materials may be specifically tailored to communicate a specific topic to a specific audience.

## 4.4. Target Pollutant Sources

There are several sources of pollution that need to be targeted in the public education program. Target pollutant sources may include but are not limited to the following:

- Litter, floatables, and debris;
- Illicit discharges and improper disposal;
- Disposal of used oil and household hazardous wastes;
- Impacts of development;
- Construction site erosion; and,
- Improper application of pesticides, herbicides and fertilizers (non-agricultural).

Educational materials may also be developed to describe BMPs that are effective in reducing the impacts of development on stormwater runoff. Topics may include but are not limited to the following:

- General impacts of stormwater runoff;
- Rainwater reuse;
- Proper household hazardous waste, used oil, and grease disposal;
- Litter, rubbish, and leaf collection and control; and,
- Low impact development practices.

Educational materials may be specifically tailored for the targeted pollutant source of concern and/or pollution prevention practices.

## 4.5. Public Education

The City may utilize a variety of techniques to implement its public education and involvement program. Mechanisms and activities that have proven to be effective in educating the public may include but are not limited to the following:

- Local Partnerships;
- Website;
- Brochures;
- Newsletters; and,
- Public Service Announcements.

The City shall perform public education activities for a minimum of two of the above listed categories. A description of how the City is using these activities is described in more detail in the following sections.

### 4.5.1. Local Partnerships

The City of Montgomery has formed partnerships with local and statewide organizations to improve the City's MS4 program and educate citizens. Websites of partnership organizations that provide beneficial activities to the City's stormwater program include.

| | |
|---|---|
| Montgomery Tree Committee | www.montgomerytrees.org |
| Take Root Montgomery | www.takerootmontgomery.com |
| Cypress Nature Park | www.cypresspondpark.org |
| Alabama Water Watch | www.alabamawaterwatch.org |
| ADEM | www.adem.state.al.us |
| MWWSSB | www.mwwssb.com |

Additional educational activities are performed by the above listed organizations and further documented on their website. As the City's MS4 program continues to evolve, the City will seek partnerships with other agencies and organizations to facilitate the public education program.

### 4.5.2. Website

The City has a developed a website (http:///www.montgomeryal.gov) that provides some general information, what the public can do to help minimize pollution, and

how to protect the quality of stormwater runoff. Some of the topics currently presented on the website include the following.

- Stormwater Management – City MS4 Program
    - General Information;
    - SWMP Plan and Annual Report links;
    - Report a 311 Issue link;
    - Local Partnerships links;
    - Oil Recycling;
    - Stormwater education and training materials; and,
    - Links to outside resources.
- Post-construction Stormwater Management
    - Stormwater Management Manual;
    - Post-construction Technical Memorandum; and,
    - Post-construction Stormwater Management forms.
- Erosion and Sedimentation Control Plan Review Process and Grading Permit Application
    - General Information;
    - Grading Permit documents;
    - Maps of Priority Watersheds;
    - Select BMP sheets; and,
    - ADEM Construction General Permit Information.
- Flood Mitigation and Determination
    - FEMA's Flood Map website;
    - Hold Harmless Agreement for 100-year Flood District; and,
    - Floodplain Development Permit.
- Sanitation
    - Sanitation Holiday Schedule;
    - Neighborhood Services link;
    - Frequently asked questions with dead animal, leaf, and grass clipping pickup information;
    - Recycling;
    - Saturday Trash Pickup Locations;
- Other Departmental Webpages
- City's social media links

The website contains links to the City's regulations, ordinances and permitting requirements. The web site is maintained and updated on an as needed basis.

### 4.5.3. Brochures, Newsletters and Door Hangers

The City of Montgomery has developed several brochures to provide general information about stormwater related issues. Brochures are made available through the Engineering Department and during various City sponsored events. Some brochures are developed to address either a specific stormwater related issue or to a particular audience. These brochures are typically provided to the audience of interest. A summary of the brochures and door hangers that have been developed is provided in Table 4.1.

**Table 4.1 Brochures and Door Hangers**

| Description | Target Pollution Source | Target Audience |
|---|---|---|
| **Brochures** | | |
| Food Service Industry | Keep Work Sites Clean<br>Minimize Waste<br>Parking Lot Drainage<br>Recycle Wastes | Restaurants<br>Grocery Stores<br>Bakeries<br>Food Producers/Distributors |
| Landscaping, Gardening & Pest Control | General Landscaping Tips<br>Garden & Lawn Maintenance<br>Pesticide Alternatives<br>Safe Substitutes for Pest Control<br>Pesticide Disposal | Homeowners<br>Gardeners<br>Landscapers |
| Clean Up Stormwater Runoff | What is Stormwater Runoff<br>Stormwater Management<br>How You Can Help | Homeowners<br>Renters<br>Schools<br>Business Owners |
| Detention Pond Maintenance | Pollution Prevention Plans<br>Maintaining the Pond<br>Sand Filter Maintenance<br>Additional Detention Pond Hints | Homeowner Associations<br>Business Owners |
| Keep Montgomery Beautiful | Trash & Litter | Homeowners<br>Renters<br>Schools<br>Business Owners |
| Grease Recycling | FOG Information<br>Dos and Don'ts of Grease Disposal | Homeowners<br>Renters<br>Business Owners |

| Description | Target Pollution Source | Target Audience |
|---|---|---|
| 5 Steps for Combating Litter | Trash & Litter | Homeowners<br>Renters<br>Schools<br>Business Owners |
| Plastic Pollution: An Environmental Issue from the Local to the Global | Plastics Information<br>Trash & Litter | Homeowners<br>Renters<br>Schools<br>Business Owners |
| Put the Brakes on Litter | Trash & Litter | Drivers |
| Composting – Nature's Recycling | Five W's of composting<br>Composting Troubleshooting | Homeowners<br>Gardeners<br>Landscapers |
| Washing Your Car | Detergents, Oil and Sediment | Homeowners<br>Renters<br>Business Owners |
| Fertilizing the Lawn | Fertilizer | Homeowners<br>Gardeners<br>Landscapers |
| Oil in the Street | Oil and Automotive Fluids | Drivers<br>Fleet Operators<br>Mechanics |
| Fix Oil Leaks | Oil and Automotive Fluids | Drivers<br>Fleet Operators<br>Mechanics |
| When your Pet goes on the Lawn | Pet Waste | Pet Owners |
| After the Storm | General Information | Homeowners<br>Renters<br>Schools<br>Business Owners<br>Contractors |
| Protecting Water Quality from Urban Runoff | General Information | Homeowners<br>Renters<br>Schools<br>Business Owners<br>Contractors |
| **Door Hangers** | | |
| Leaves Management | Leaf Pick Up Requirements | Homeowners<br>Business Owners |
| Hey Montgomery | Litter and Debris Control | Homeowners<br>Business Owners |
| Trash / Rubbish | Trash / Rubbish Pick Up Requirements | Homeowners<br>Business Owners |

| Description | Target Pollution Source | Target Audience |
|---|---|---|
| Hey Neighbor! | Litter and Debris Control | Homeowners<br>Business Owners |
| Grease Recycling | FOG Information<br>Dos and Don'ts of Grease Disposal | Homeowners<br>Renters<br>Business Owners |

The City has enhanced its brochure development and distribution procedure to implement more cost-effective solutions. The City determined that using newsletter publications and the City's website were more effective in reaching a larger audience. This provides the City with more flexibility and creativity while reaching a broader public audience. The City may realize many advantages to this strategy, including the following:

- Environmental impact of reduced brochure or door hanger printing (newsletters are published electronically);
- Reduced cost of printing;
- Distribution to a broad-reaching audience independent of visiting a physical location;
- Ability to reach an audience several times a year through newsletters and full time through the website; and,
- Increased communication with City employees, residents, community groups, and neighborhood leaders.

Copies of the current brochures and door hangers are provided in Appendix D and available on the City's website at the following link:

https://www.montgomeryal.gov/city-government/departments/engineering-environmental-services/stormwater-management/city-ms4-program.

### 4.5.4. Public Service Announcements

Several public service announcements (PSAs) have been developed to help educate citizens on reoccurring problems with pollution that impacts the City's MS4. The City has created a YouTube channel to allow continual access to these PSAs at:

https://www.youtube.com/user/CityofMontgomery1/feed.

### 4.5.5. Neighborhood Services

The City's BONDS and Montgomery Clean City Commission groups have been combined to form the Neighborhood Services Department. The Mission of Neighborhood Services is to provide resources to strengthening and empower neighbors in Montgomery to take action for engaged, connected, and vibrant communities. To accomplish this mission, Neighborhood Services provides the following services:

- Training programs;
- Community Resource Center;
- Networking opportunities;
- Financial assistance (grants);
- Gathering of Neighborhood luncheons;
- Quarterly Newsletters; and,
- Public Involvement opportunities (discussed in Section 4.6).

Neighborhood Services provides these and other services in an effort to improve the overall quality of life throughout the City's and surrounding areas.

## 4.6. Public Participation

The City may utilize a variety of techniques to implement its public education, involvement, and outreach program. Mechanisms and activities that have proven to be effective in educating the public may include:

- Public involvement through public meetings and City's website;
- Report an Issue – 311;
- Classroom presentations;
- Recycling;
- Pet waste disposal stations;
- Storm drain markers;
- Montgomery County Water Festival; or,
- Cleanup activities.

The City shall perform public participation activities for a minimum of two of the above listed categories. A description of how the City is using some of these activities is described in more detail in the following sections:

### 4.6.1. Public Involvement

The City's website may be used as the primary mechanism of providing information to the public and receiving input from the public regarding the City's SWMP. As an example, the City posted the Draft SWMP Plan on the website for review and comment by the public. Public comments may be provided electronically or by mail to the Engineering Department for review and consideration.

Part II.B.2.d. of the NPDES permit states "The current SWMPP and latest annual report should be posted on the Permittee's website". Until the City determines if the SWMPP and annual report will be posted on the City's website, the City shall rely upon ADEM's e-file system to address this permit requirement.

### 4.6.2. Report an Issue – 311

The City has implemented various citizen reporting tools for the general public to provide suggestions and/or to report incidents that may potentially impact the MS4. A citizen can report an issue of concern by using one of the following:

- Hotline: 311 or 240-INFO
- Website: http://www.montgomeryal.gov/live/report-an-issue
- Mobile App: AccessMontgomery

The City uses the QAlert Citizen Request Management (CRM) software as the backbone of the City's 311 call center. The QAlert CRM system provides the City with an effective tool to work with citizens and resolve their issues.

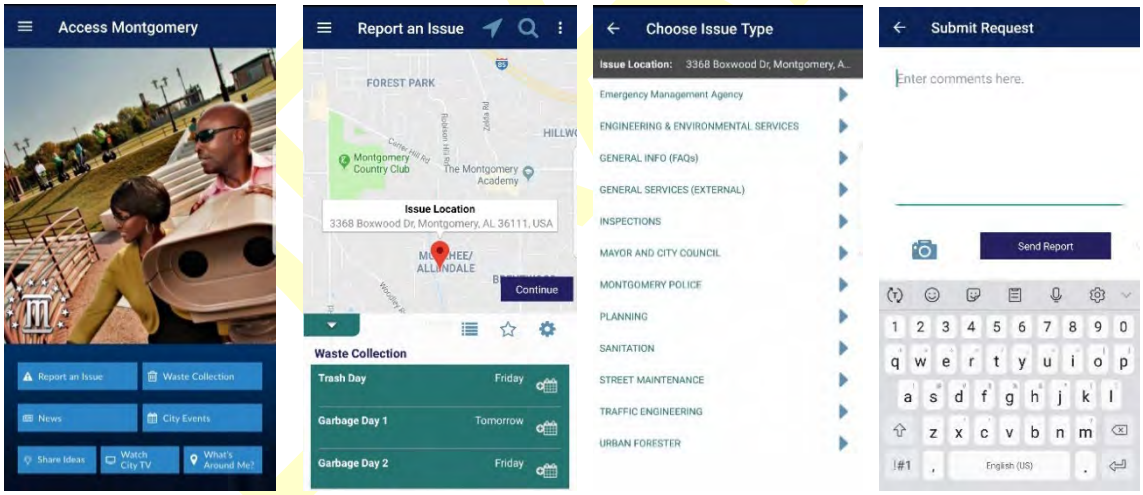
- Requests from citizens do not get lost or misfiled. All calls entered are stored, routed to the correct department(s), and managed through QAlert CRM. At any time, information and status of a citizen's request is available.
- Through the integrated knowledge base, call takers can provide answers to a citizen's question verbally or trigger an email with details while the caller is on the phone.
- QAlert CRM provides powerful reporting and charting tools that help understand reoccurring issues to better allocate the City's resources.
- The City's 311 call center is operated by city personnel and staffed Monday through Friday from 8:00 am to 5:00 pm.

- QAlert CRM has been incorporated into the City's website. This provides a virtual citizen service center which is available 24 hours a day, seven days a week.

Specially trained operators field citizen calls and enter those calls into the QAlert CRM system using a specifically designed call center tab. QAlert CRM automatically routes those inquires to the correct department(s), where staff members respond to citizens, entering their actions taken, and resolving the issue. The scripts feature of QAlert CRM assists call takers in recording the exact information needed for quick resolution by the responder, while the knowledge base feature places collections of organizational information at the fingertips of the call takers for answering questions.

In October 2013 the City launched a mobile application titled "AccessMontgomery" by Qscend Technologies. Screenshots of the "app" are provided in Figure 4.1. The app is located at the following address: https://play.google.com/store/apps/details?id=com.qscend.report2gov.accessmontgomery&hl=en

**Figure 4.1 311 Mobile Application Screenshots**




### 4.6.3. Classroom Presentations

Neighborhood Services has developed various educational programs specifically targeted for school children in kindergarten through 12th grade. Current educational programs include:

- With stories and questions from the Talking Tree, kindergarteners through 2nd graders get excited about helping keep their world clean and beautiful.

- Using the facts and folk tales of Professor Environmental, 3rd through 5th graders are informed on ways to protect the environment.

Talking Tree

Professor Environmental

- Demographics show the people most likely to litter are those under the age of 30. "Put the Brakes on Litter" is targeted to driver's education students to help reinforce behaviors that help the environment.

These educational programs are well-known within schools, day cares, and churches. As a result, these educational programs have been highly effective in reaching the school aged children throughout the City. Educational flyers are provided in Appendix D.

### 4.6.4. Recycling

In February 2019, RePower South and the City reopened the Materials Recovery Facility (MFR). This facility provides recycling of majority of the City's one-bin trash stream. The City's Sanitation Department unloads all Municipal Solid Waste (MSW) at the facility where recyclables are mechanically separated, packed, and sold. A portion of the remaining non-recyclable paper and plastic material is processed into fuel pellets for energy generation as a substitute for coal. A photo of a portion of the facility's operation is shown in Figure 4.2.

The City has been active in promoting recycling throughout the City in addition to the continuation of programs to promote a cleaner City. Recycling programs that implemented throughout the City include the following:

- Electronics Recycling;
- Christmas Tree Recycling;
- Paper Shredding Recycling; and,
- 1st and 3rd Saturday pickup.

**Figure 4.2 MFR Facility**

Due to successful past electronics recycling events, the City now offers electronics and appliance recycling every Thursday through Ecovery, LLC at the McInnis Recycling Center.

### 4.6.5. Pet Waste Disposal Stations

Currently, the City has installed and maintained 18 pet waste disposal stations at parks throughout the City, including two (2) specified dog parks. The City maintains existing pet waste stations, including emptying the stations regularly. Photographs of typical pet waste disposal systems installed at City parks are provided in Figure 4.3. An inventory of pet waste disposal stations located throughout the City is included in Figure 4.4.

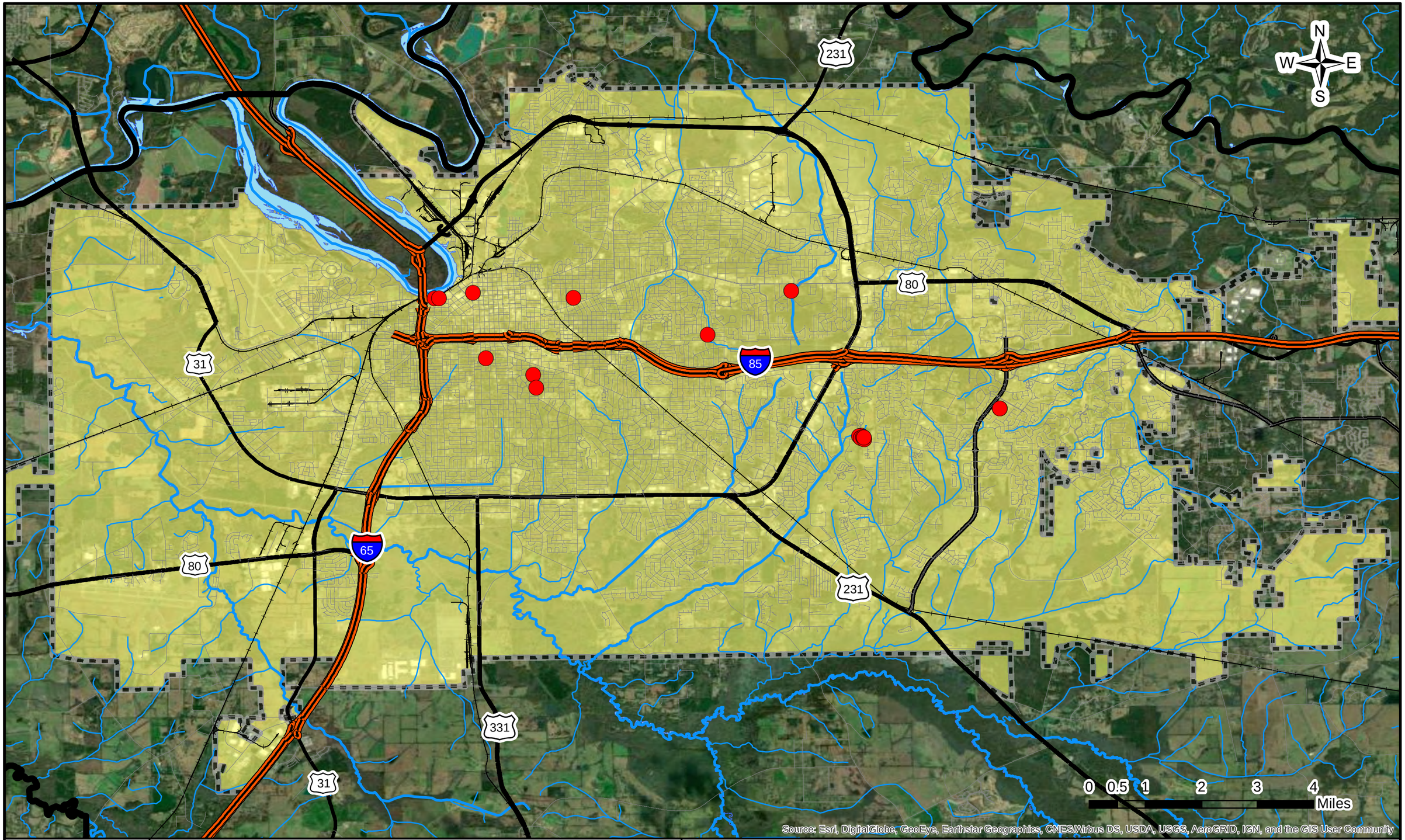
**Figure 4.3 Pet Waste Disposal Stations**


Bellinger Hills


Vickers


Brenda Bonner


Fox Hollow




HYDRO ENGINEERING SOLUTIONS

City of Montgomery

Pet Waste Station

**CITY OF MONTGOMERY**

Pet Waste Locations

Figure 4-4

October 2020

### 4.6.6. Storm Drain Marking

Storm drain marking sends a clear message to keep trash, debris, leaf litter, and pollutants out of the storm sewer system. It also assists in discouraging illegal dumping and discharges. The City has developed and implemented a storm drain marking program to involve and educate the public. Periodically, the City or volunteer groups place storm drain markers in neighborhoods or areas, in impaired watersheds, or are suggested by communities. This practice helps to inform the public and reduce the amount of floatables entering the MS4.

The City has installed inlet covers with a special inlet cover design to inform people that it discharges into local streams. These inlet covers have been used to replace standard inlet covers in the downtown area. Examples of a storm drain marker and inlet cover are provided in Figure 4.5.

The City has also installed 28 specialty inlets on Dexter Avenue as part of the recent streetscape project. These new curb inlets have text on the top of curb saying, “Dump no Waste, Drains to Stream.” An example specialty inlet is provided in Figure 4.6.

**Figure 4.5 Storm Drain Marker and Inlet Cover**


**Figure 4.6 Specialty Inlet**

### 4.6.7. Montgomery County Water Festival

The mission of the Montgomery County Water Festival is to educate students about all aspects of surface water and groundwater and other related natural resources (such as wetlands, forestry, wildlife and much more) and to instill in them a general environmental awareness and stewardship ethic. The festival is designed to be a fun, educational and memorable event in a field day atmosphere. Students and their teachers will go home with increased knowledge and awareness of the importance of our precious water resources and on becoming good environmental stewards of these resources. All 4th Grade students in Montgomery County including, public, private, and home-schooled students are invited to participate. Over recent years, the festival has had average annual participation levels of near 3,000 participants.

The City of Montgomery may provide staff, financial support, or resources to support the water festival. This is an excellent opportunity to help shape the environmental behaviors of 4th grade students. It is well documented that educating school age children help in improving the environmental behaviors of their parents.

### 4.6.8. Clean-Up Events

The City may host and/or assist with clean-up events focused on the removal of litter, floatables and debris. Typically, clean-up events are coordinated through Neighborhood Services. The Neighborhood Services may work with schools, civic groups, community groups, or residents to coordinate and implement clean-up event(s). Typically, Neighborhood Services may assist with the following cleanup event types:

- Specific Park cleanups;
- Neighborhood Cleanups; or,
- Nine City Council District Cleanups.

Some of the cleanup activities are supported through the City's Pact to A.C.T. program, focusing on school cleanup and beautification. Neighborhood Services may support clean-up events by providing cleanup materials (trash grabbers, gloves, safety vests and trash bags) to volunteers. Additionally, the Sanitation Department may provide trash disposal and scrap tire removal.

## 4.7. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing a Public Education and Public Involvement Program. Program goals are summarized in Table 4.2.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of Public Education and Public Involvement Program. The results of the program evaluation shall be summarized in the Annual Report.

**Table 4.2**
**Public Education and Public Involvement – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Public Education (Minimum of 2 activities / year) | Local Partnerships | Track | 30 September 2021 | All Departments |
| | Public service announcements | As needed | 30 September 2021 | Neighborhood Services |
| | Neighborhood Services newsletter | 1 / year | 30 September 2021 | Engineering |
| | Brochures | Track | 30 September 2021 | |
| | Website Stormwater information | Update as needed | 30 September 2021 | |
| Public Involvement (Minimum of 2 activities / year) | Public involvement | As needed | 30 September 2021 | Engineering |
| | Water Festival | Annually | 30 September 2021 | |
| | Report an Issue - 311 | Track | 30 September 2021 | Public Works |
| | Classroom presentations | Track | 30 September 2021 | Neighborhood Services |
| | Cleanup events | Track | 30 September 2021 | |
| | Public events | Track | 30 September 2021 | All Departments |
| Program Evaluation | Evaluate program effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 5

## Illicit Discharge Detection and Elimination

# 5. Illicit Discharge Detection and Elimination (IDDE)

## 5.1. Introduction

Illicit discharges are defined as a storm drain that has measurable flow during dry weather containing pollutants and/or pathogens. A storm drain with measurable flow but containing no pollutants is simply considered a discharge. Dry weather discharges may be composed of one or more possible flow types:

- Sewage and septage flows from sewer pipes and septic systems;
- Wash water flows generated from commercial laundry wastewater, commercial carwash wastewater, gray water from homes, fleet washing, and floor washing from shop drains;
- Liquid wastes such as oil, paint, process water, etc. that enter the storm drain system;
- Tap water leaks and losses;
- Landscape irrigation from residential and commercial sources; or,
- Groundwater and spring water flows occurring when the groundwater table rises above the storm pipe invert and infiltrating cracks and joints.

The Illicit Discharge Detection and Elimination (IDDE) Program has been developed using the Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments, October 2004. This document is incorporated into the SWMP Plan by reference and available in the office of the City Engineer.

The City's IDDE Program includes the activities described in Part II.B.3 of the NPDES Permit.

## 5.2. Authorized Discharges

In accordance with Part I.B.2. of the NPDES Permit, the following non-stormwater discharges have been determined not to be significant sources of pollution.

1. Water line flushing;
2. Landscape irrigation (not consisting of treated, or untreated wastewater unless authorized by the Department);
3. Diverted stream flows;
4. Uncontaminated ground water infiltration;
5. Uncontaminated pumped groundwater;
6. Discharges from potable water sources;
7. Foundation and footing drains;
8. Air conditioning drains;
9. Irrigation water (not consisting of treated, or untreated, wastewater unless authorized by the Department);
10. Rising ground water;
11. Springs;
12. Water from crawl space pumps;
13. Lawn watering runoff;
14. Individual residential car washing, to include charitable carwashes;
15. Residual street wash water;
16. Discharge or flows from firefighting activities (including fire hydrant flushing);
17. Flows from riparian habitats and wetlands; and,
18. Dechlorinated swimming pool discharges.

## 5.3. Program Administration

The Engineering Department is responsible for screening major outfalls to evaluate the presence of non-stormwater discharges. If a suspect illicit discharge is identified during screening activities, the Engineering Department shall report the suspect illicit discharge to the appropriate department and/or agency that may be responsible for corrective actions.

## 5.4. Legal Authority

On 15 October 2013, the City of Montgomery adopted an Illicit Detection and Elimination (IDDE) Ordinance (Ordinance No. 56-2013). The ordinance establishes the guidelines for prohibiting, monitoring, and enforcing illicit

discharges within the City's MS4. A copy of the ordinance is provided in Appendix B and is available online at the following link:

https://library.municode.com/al/montgomery/codes/code_of_ordinances.

## 5.5. Standard Operating Procedures

The City has developed SOPs for the various activities required to implement the IDDE Program. SOPs include but are not limited to the following:

- SOP# IDDE-01 – Illicit Discharge Detection and Elimination;
- SOP# IDDE-02 – Outfall Reconnaissance Inventory (ORI);
- SOP# IDDE-03 – Outfall Screening;
- SOP# IDDE-04 – Illicit Discharge Investigations; and,
- SOP# IDDE-05 – Illegal Dumping and Dumpsites.

SOPs are provided in Appendix E.

## 5.6. Training

The City has developed a training program to educate select City staff on various components of the IDDE Program. An overview of this training program is described in the following sections.

### 5.6.1. Training Categories

Staff training has been divided into two separate categories that include:

Category 1 – General Awareness

- Allowable Discharges
- Suspect Illicit Discharges
- Reporting

Category 2 – Outfall Screening and Investigation

- Outfall reconnaissance inventory;
- Water quality monitoring procedures;
- Outfall reconnaissance inventory field procedures; and,
- Illicit discharge tracking procedures.

Depending upon the specific responsibilities of each staff member identified for training, that staff member me participate in one or both training categories.

### 5.6.2. Staff Roster

Table 5.1 identifies staff that will participate in training and the type of training they will receive.

**Table 5.1 Staff Training Roster**

| Staff | Training Category 1 | Training Category 2 |
|---|---|---|
| City Engineer | X | X |
| MS4 Coordinator | X | X |
| Development Plan Coordinator | X | |
| Subdivision Coordinator | X | |
| Chief Development Inspector | X | |
| Development Inspector | X | |
| MS4 Engineering Technician | X | X |
| Survey Crew Supervisor | X | X |
| Survey Crew | X | X |

### 5.6.3. Training Frequency

Training for both categories shall occur annually. New staff shall receive the initial training described above and annual refresher training.

## 5.7. Preventing Illicit Discharges

The IDDE Program component identifies key behaviors of the public, facilities, and municipal operations that produce intermittent and/or transitory discharges. These key behaviors are targeted to improve pollution prevention practices and prevent or reduce the risk of discharge. The City may develop a wide variety of education and enforcement tools to promote pollution prevention practices.

### 5.7.1. Public Education

The City may use the following types of activities when informing the public or City employees about the hazards associated with illegal discharges and improper disposal of waste:

- Distribute brochures to encourage proper use and disposal of household chemicals, maintenance of on-site sewage disposal systems, and recycling;
- Discuss the stormwater program in a City Council meeting and/or other meetings open to the public;
- Provide information on the City website about pollutant reduction;
- Support local stream clean-up events conducted by non-profits, organizations or State / Federal agencies and programs;
- Support local volunteer monitoring and public education programs;
- Support local storm drain marking programs;
- Support regional household pollutant collection events; and
- Support local and regional recycling of wastes.

Information regarding the City's efforts associated with public education and involvement is further described in the Public Education and Public Involvement sections of this SWMP Plan.

### 5.7.2. Report an Issue - 311

The City of Montgomery has implemented a hotline and web reporting system for the general public to report suspect illicit discharges. A citizen can report an issue of concern by using one of the following:

- Hotline: 311 or 240-INFO
- Webpage: http:///www.montgomeryal.gov
- Mobile App: AccessMontgomery

## 5.8. Data Management

The City has a dedicated staff responsible for obtaining, developing, and maintaining the City's Graphic Information System (GIS) data and system. The City uses a state of the art GIS system to manage all types of information and data. Mapping layers used to support the City's IDDE Program may include, but are not limited to, the following:

- Major stormwater outfalls;
- Aerial photography;
- City boundaries;
- Roads and Bridges;

- Parcels;
- Zoning information;
- Sanitary sewer system;
- Water distribution system;
- Hydrologic data (streams, wetlands, drainage basins, etc.);
- TMDL and 303(d) listed stream segments; and,
- Drainage ditches.

## 5.9. Searching for Illicit Discharges

The City has implemented a comprehensive program to detect and eliminate illicit discharges. There are two categories of pollutants that may be addressed in different ways.

1. The first category is pollutants introduced into the MS4 from individuals in a one-time distinct episode at a discrete point of entry. Examples of these are dumping of yard waste, motor oil, antifreeze or trash into a creek or storm drain. These types of pollutants, when discovered in the MS4 or local streams, cannot be effectively investigated as to the source (i.e. the individual causing the pollution). Also, they are not normally discovered using a City-wide MS4 inspection program of monitoring fixed stations with scheduled work-day inspections. One of the best means of discovery will be through input from citizens, City crews, Police and Fire Departments, businesses, and field crews. Prevention of future isolated pollution episodes will rely upon implementation of the public education and public involvement programs.

2. The second category is pollutants from sources that have a chronic or frequently repeating discharge that can be traced through stream channels and the MS4 system using visual inspections, field screening test kits, and laboratory monitoring. Pollutants from these sources may be dispersed downstream as a detectable odor, visual color, increased turbidity, excessive algae growth, or changes in water chemistry (e.g. pH, conductivity, etc.) when compared to uncontaminated water in the stream or MS4. These chronic pollutants are amenable to “source tracking” inspections, and the sources are more likely to be found and mitigated.

Searching for illicit discharge problems consists of detective work and involves field screening of subwatersheds to locate outfalls and identify suspect illicit discharges. The primary field screening tool that will be used is the Outfall Reconnaissance Inventory (ORI). This recommended method is very effective for finding chronic

illicit discharge problems and developing an outfall inventory of the MS4. If suspect discharges are encountered during the field screening, the ORI may be supplemented with indicator monitoring methods to test suspect illicit discharges.

### 5.9.1. Field Activities

Field activities associated with the outfall reconnaissance inventory shall be performed when there has been a prolonged dry period with a minimum of 72 hours from the previous measurable (greater than 0.10-inch rainfall) storm event.

### 5.9.2. Outfall Inventory Schedule

The City has been divided into 36 watersheds that correspond to major drainage ditches located within the City. Boundaries of each major watershed are shown in Figure 5.1.

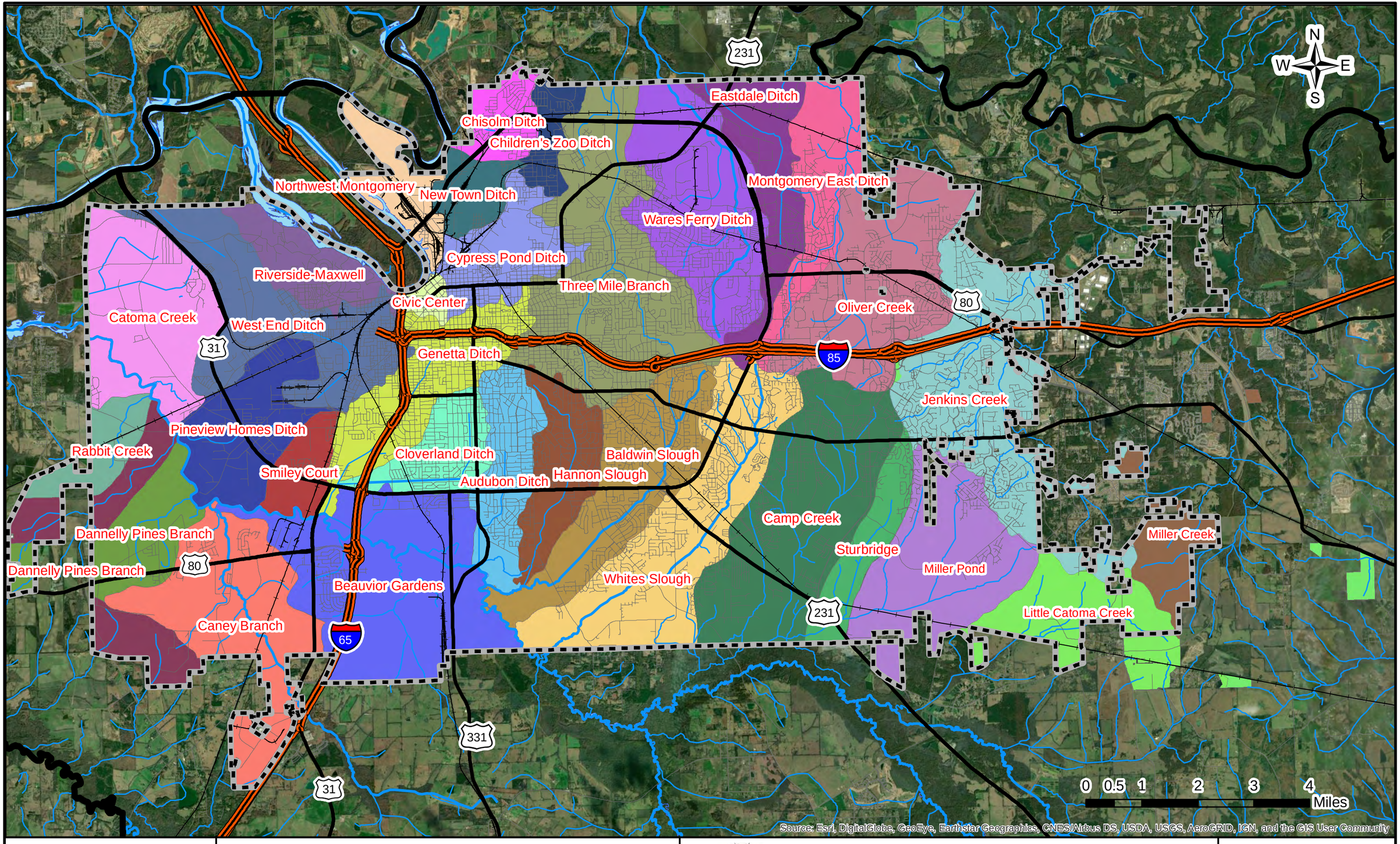
The City has developed a schedule to screen each major watershed by September 2023. A Watershed Screening Schedule is provided in Figure 5.2. If all known major outfalls are screened in less than a five-year period, the City may not perform any subsequent major outfall screening activities until the next five-year period.

### 5.9.3. Priority Areas

Based on the small number of suspect non-stormwater discharges observed during the major outfall screening activities performed over the past 9 years, the City has not identified any priority areas that require more frequent screening.

## 5.10. Outfall Reconnaissance Inventory

The outfall reconnaissance inventory is designed to locate and record basic characteristics of each outfall. During the inventory process, each outfall shall be screened for the presence of illicit discharge(s). The City's outfall reconnaissance inventory methodology and procedures have been developed using Chapter 11 of the IDDE Guidance Manual.




HYDRO ENGINEERING SOLUTIONS

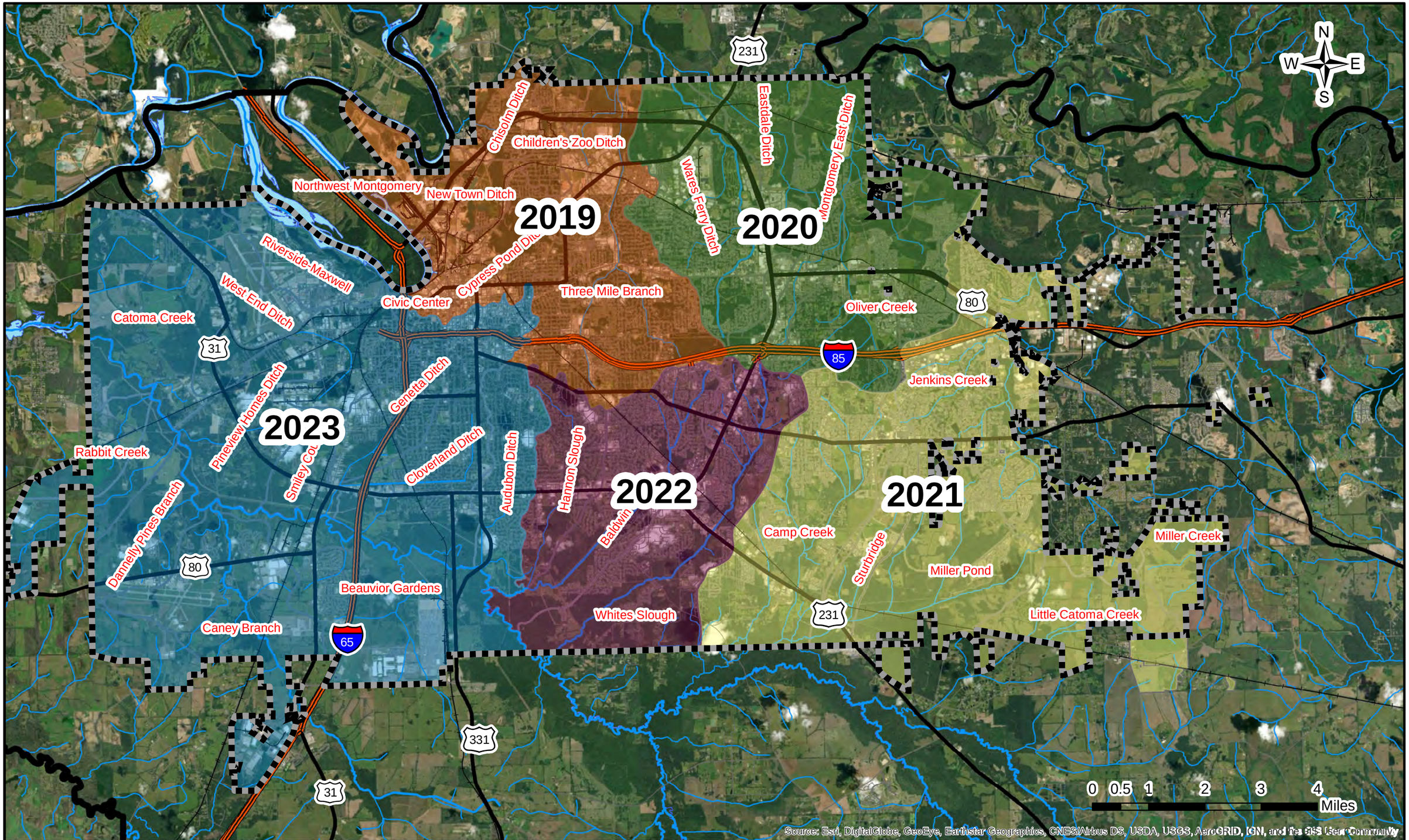
City of Montgomery

**CITY OF MONTGOMERY**

Major Watersheds

Figure 5-1

October 2020




HYDRO ENGINEERING SOLUTIONS

City Limits

**CITY OF MONTGOMERY**

Watershed Screening Schedule

Figure 5-2

September 2019

### 5.10.1. Field Sheets

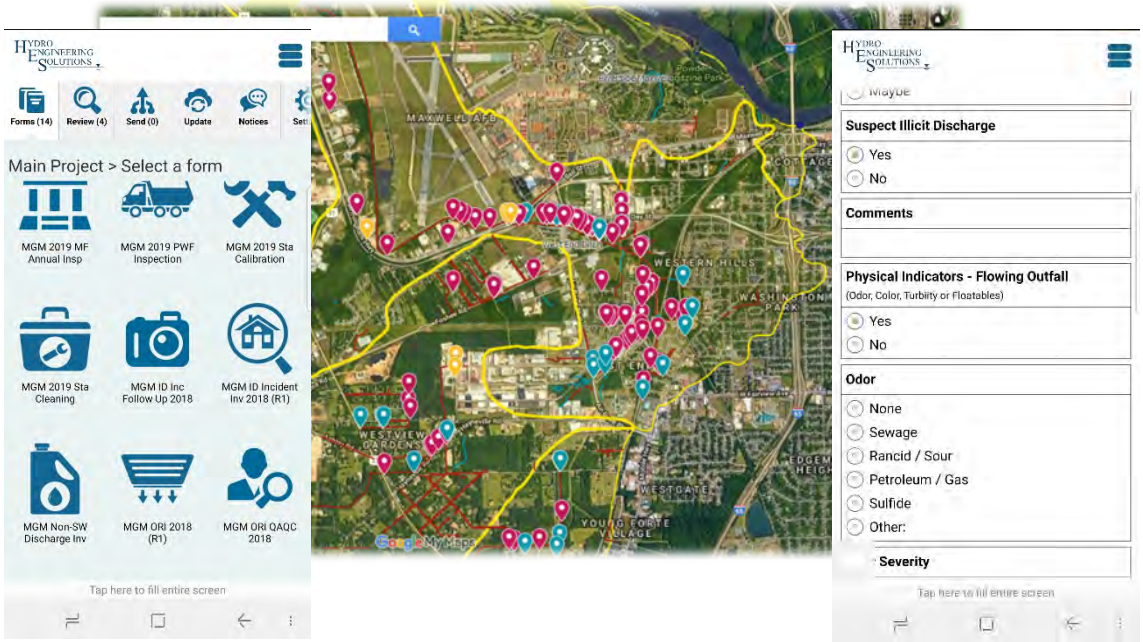
The City may utilize the Outfall Reconnaissance Inventory / Sample Collection Field Sheet provided with the IDDE Guidance Manual to document each outfall located and screened. An example of the Outfall Reconnaissance Inventory / Sample Collection Field Sheet is provided in the Appendix E.

The City's IDDE Program describes the approach and use of best available technology for completing an ORI to map and screen outfalls. A mobile application was used to convert the ORI form into an electronic format. This mobile application provides field crews with the following enhanced capabilities:

- GPS mapping to facilitate outfall location;
- Electronic data collection;
- Minimize the types of equipment needed for field work;
- Ability to report a problem immediately when it is discovered;
- Ability to automatically create an outfall screening report; and,
- Data collected is easily converted to a format for ArcGIS.

Data collected during the ORI is maintained in the City's GIS dataset for illicit discharges. Screen shots of the mobile application are provided in Figure 5.3.

**Figure 5.3 Mobile Application Screen Shots**



### 5.10.2. Screening Data

Information and data collected for each outfall is summarized on Outfall Reconnaissance Inventory / Sample Collection Field Sheet. Information and data that will be collected for each major outfall includes the following:

Section 1 – Background Data
- Coordinates
- Photograph

Section 2 – Outfall Description
- Location
- Material
- Shape
- Dimensions
- Submerged

Section 3 – Quantitative Characterization
- Parameter
- Result
- Unit
- Equipment

Section 4 – Physical Indicators for flowing outfalls only
- Indicator
- Description
- Relative Severity Index

Section 5 – Physical Indicators for both flow and non-flowing outfalls.
- Indicator
- Description

Chapter 11 of the Outfall Reconnaissance Inventory of the Illicit Discharge Detection and Elimination Guidance Manual provides direction in completing the Outfall Reconnaissance Inventory / Sample Collection Field Sheet information.

## 5.11. Outfalls Screened

Outfalls within each watershed have been located and mapped are summarized in Table 5.2.

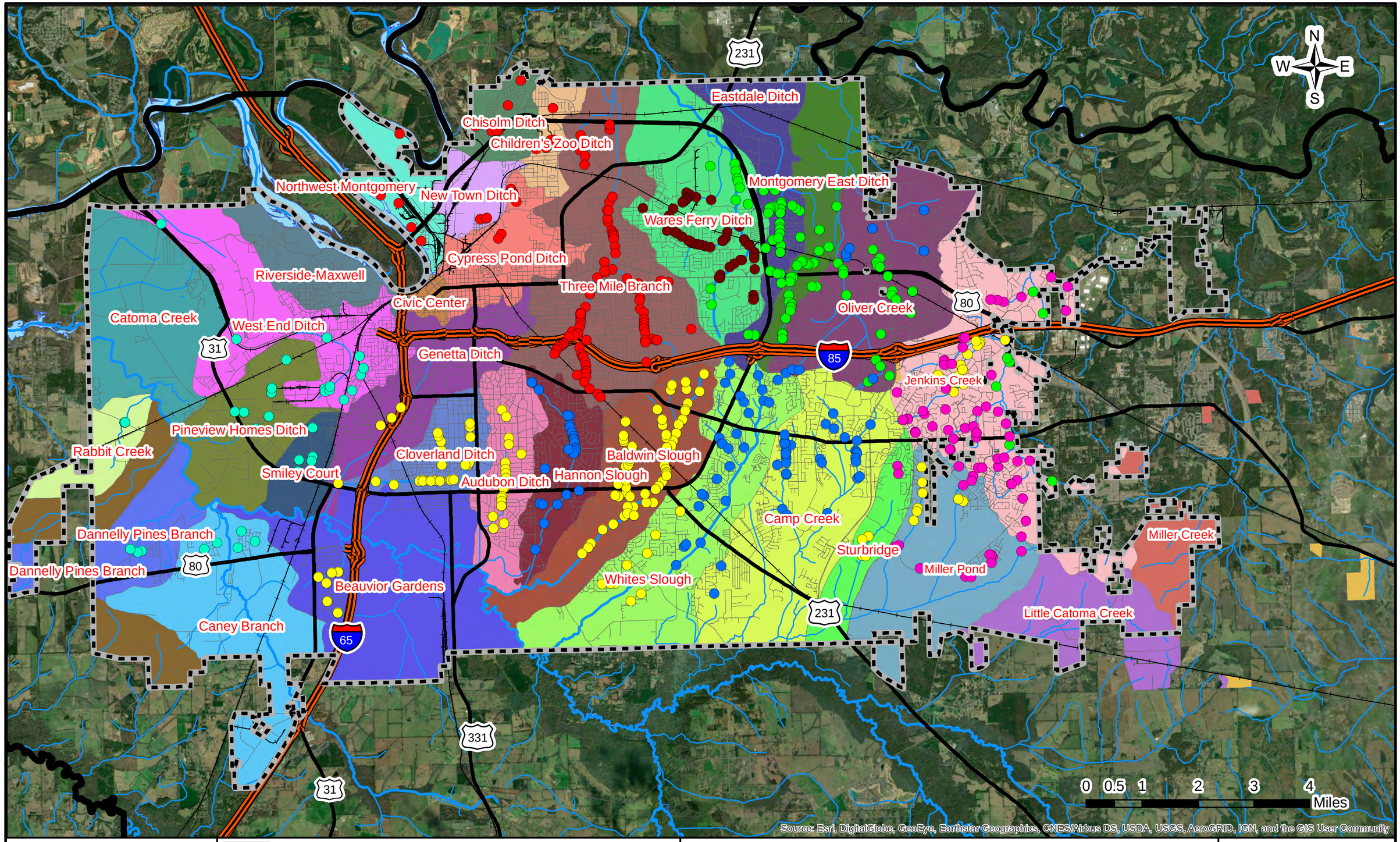
**Table 5.2 Total Major Outfall Inventory by Watershed**

| Watershed | Major Outfalls | Watershed | Major Outfalls |
|---|---|---|---|
| Audubon Ditch | 20 | Miller's Pond | 18 |
| Baldwin Slough | 68 | Montgomery East Ditch | 26 |
| Beauvior Gardens Ditch | 7 | Newtown Ditch | 3 |
| Camp Creek | 32 | Northwest Montgomery | 5 |
| Caney Branch | 5 | Oliver Creek | 37 |
| Chestnut Ditch | 1 | Pineview Homes Ditch | 10 |
| Children's Zoo Ditch | 7 | Rabbit Creek | 4 |
| Chisholm Ditch | 6 | Riverside Maxwell | 0 |
| Civic Center Ditch | 0 | Seibels Road Ditch | 0 |
| Cloverland Ditch | 23 | Sherwood Ditch | 22 |
| Coca Cola Road Ditch | 0 | Smiley Court Ditch | 5 |
| Cypress Pond Ditch | 9 | Southlawn Ditch | 0 |
| Dannelly Pines Branch | 3 | Sturbridge Creek | 8 |
| Eastdale Ditch | 39 | Three Mile Branch | 61 |
| Genetta Ditch | 4 | Village West Ditch | 0 |
| Hannon Slough | 25 | Wares Ferry Ditch | 63 |
| Jenkins Creek | 79 | West End Ditch | 12 |
| Kilby Ditch | 5 | White's Slough | 36 |
| | | **Total** | **643** |

## 5.12. Suspect Illicit Discharges

If a suspect illicit discharge is encountered during the outfall reconnaissance inventory at a major outfall, field personnel may take the following steps to identify and locate a suspect illicit discharge.

- Evaluate physical indicators of the suspect illicit discharge;
- Evaluate indicator parameters of the suspect illicit discharge;
- Try to identify the source of the suspect illicit discharge; and/or,
- Collect a sample of the suspect illicit discharge.




HYDRO ENGINEERING SOLUTIONS

City of Montgomery

2013 2014 2015 2016 2017 2018 2019

**CITY OF MONTGOMERY**

Major Outfall Inventory

Figure 5-4

October 2020

### 5.12.1. Field Screening

If a suspect illicit discharge is encountered, field personnel may evaluate the physical indicators of the suspect illicit discharge and document the findings on an ORI Field Sheet. Field personnel may also estimate the flow and/or volume of the suspect illicit discharge. If the initial screening observations and/or data indicate a suspect illicit discharge, field personnel may evaluate the indicator parameters listed in Table 5.3 using a field screening kit.

**Table 5.3 Field Screening Parameters**

- Ammonia
- Potassium
- Nitrate
- Conductivity
- Chlorine
- Conductivity
- Nitrite
- TDS
- Phosphate
- Detergents
- Temperature
- pH

Results of indicator parameters shall be recorded on the ORI form. If the physical indicators and/or indicator parameters indicate a suspect illicit discharge, field personnel may proceed in locating the source of the suspect illicit discharge.

### 5.12.2. Sample Collection

If a discharge from a major outfall exhibits a physical characteristic of an illicit discharge and/or the source of the suspect illicit discharge cannot be easily identified, field personnel may collect a grab sample of the discharge. The sample shall be shipped to an independent laboratory and analyzed for the following parameters.

**Table 5.4 Screening Parameters**

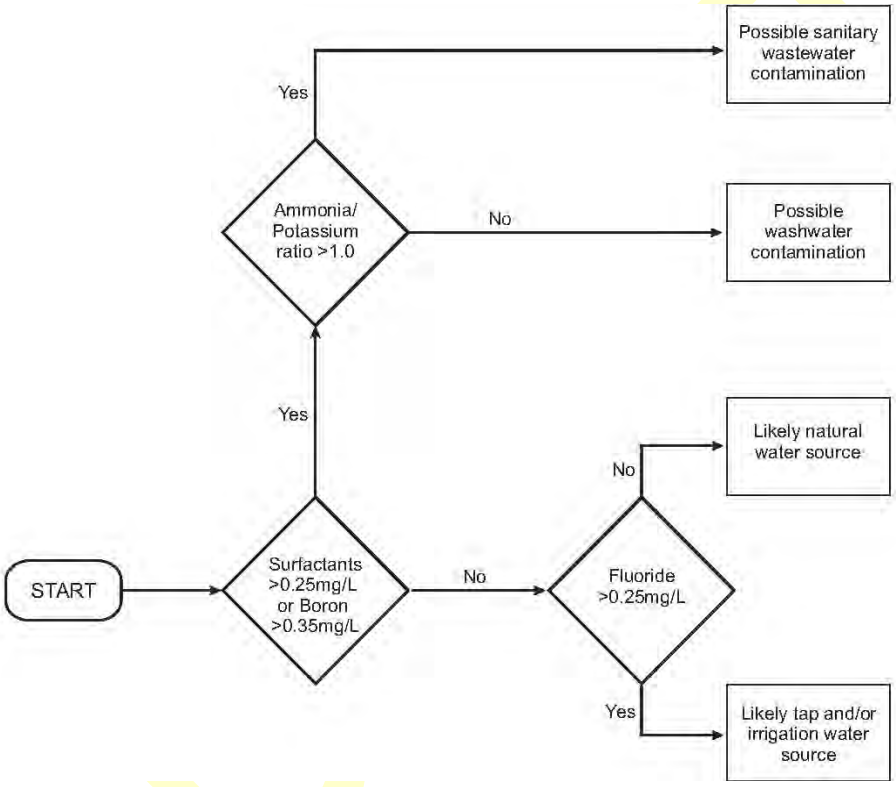
- Ammonia
- Turbidity
- E. Coli
- Hardness
- Chlorine
- Conductivity
- Total Coliform
- Potassium
- Surfactants
- Detergents
- Fluoride

The City shall use the sample collection protocol provided in Appendix G of the IDDE Guidance Manual. Analytical methods for samples submitted to an independent laboratory shall be in accordance with 40 CFR 136.

### 5.12.3. Evaluation of Results

The IDDE Guidance Manual recommends the use of the Flow Chart Method for identifying the type of illicit discharge. The Flow Chart Method is recommended because it is a relatively simple technique that analyzes four or five indicator parameters that are safe, reliable, and inexpensive to measure. The basic decision points involved in the Flow Chart Method for a residential area are shown in Figure 5.5.

**Figure 5.5 Flow Chart to Identify Illicit Discharges in Residential Areas**




## 5.13. Locating and Removing Illicit Discharges

When episodic incidental pollution is reported to the City (e.g. motor oil dumped into a storm drain), the City shall record the date, location, information source, and description of the event. If necessary, field personnel shall be sent to investigate and to determine if the site should be cleaned (e.g. removal of yard waste, containment of oil, etc.). After inspection and/or cleanup, the City shall keep a record of all actions taken regarding the incident.

### 5.13.1. Locating Illicit Discharges

If a suspect illicit discharge is identified during the outfall reconnaissance inventory, field personnel may try to locate the source of the illicit discharge before proceeding to the next outfall. Field personnel may employ the following techniques to locate the suspect illicit discharge.

- Storm Sewer System Evaluation – Field personnel shall attempt to follow the suspect illicit discharge up the storm sewer system to identify its source.
- Drainage Area Evaluation – Field personnel shall conduct a "windshield" survey of the drainage area to identify its source.
- If the source of an illicit discharge is located, field personnel shall report the location and source of the illicit discharge to the City Engineer.

Upon receipt of the analytical results from samples collected of the suspect illicit discharge, the City Engineer or his designee shall coordinate and/or perform a more detailed investigation to identify the source of a suspect illicit discharge.

- Analytical Results Evaluation – Evaluate the analytical results to characterize the type of illicit discharge.
- Detailed Storm Sewer System Evaluation – Using best available maps and data, attempt to follow the suspect illicit discharge up the storm sewer system to identify its source. Investigation methods may include dye tracing, video inspection of storm sewer system, specialized contractors and other methods as appropriate.
- Drainage Area Evaluation – Review the land used and types of facilities located within the drainage area. Conduct a survey of potential generating sites to identify the source of the illicit discharge.

### 5.13.2. Removing Illicit Discharges

After the source of an illicit discharge has been identified, the City Engineer or his designee shall take appropriate actions to abate the illicit discharge.

### 5.13.3. Sanitary Sewer System

The majority of the City is serviced by a sanitary sewer system operated by Montgomery Water Works and Sanitary Sewer Board (MWWSSB). If the City

observes any problems with the sanitary sewer system, the City shall report the problem to:

**MWWSSB**
116 Coosa Street
Montgomery, Alabama 36104
Phone (334) 206-1600

### 5.13.4. On-Site Wastewater Treatment Systems

Some residents utilize an on-site sewage disposal system. The Alabama Department of Public Health has the regulatory authority for the design, permitting, construction and maintenance of individual on-site sewage disposal systems.

If the City observes any problems with an on-site sewage disposal system, the City shall report the problem to:

**Montgomery County Health Department**
3060 Mobile Highway
Montgomery, Alabama 36108
Environmental
Phone (334) 293-6452

### 5.13.5. Spill Response

The City's Fire Department and/or Emergency Management Agency (EMA) is responsible for responding to any type of spill that may occur within the City. If a spill enters the MS4, the Fire Department and/or EMA shall notify the City Engineer. The City Engineer and/or his designee shall evaluate the impacts of the spill on the MS4 and ensure appropriate corrective measures are taken to abate the spill. Follow up inspections of the affected area shall be performed as needed.

## 5.14. Enforcement

An effective illicit discharge and detection program uses an escalating scale of enforcement action to abate illicit discharges. Enforcement actions provided by the IDDE Ordinance is described below:

### 5.14.1. Warning Notice

When the City Official determines that any person has violated or continues to violate any provision of the IDDE Ordinance, the City Official may serve upon that

person a Warning Notice specifying the particular violation to have occurred and requesting that the discharger immediately seek to cease any offending discharge.

If the violation is not corrected immediately, the City Official shall determine if the enforcement action should be escalated to a Compliance Order.

### 5.14.2. Compliance Order

When the City Official finds that any person has violated, or continues to violate, the IDDE Ordinance, he may issue a compliance order to the violator, directing that, within a specified time period, adequate structures and devices be installed, or procedures implemented, and properly operated or other action be taken to remedy such violation.

If the violation is not corrected immediately, the City Official shall determine if the enforcement action should be escalated to a Notice of Violation.

### 5.14.3. Notice of Violation

Whenever the City Official finds that any person is in violation of any provision of the IDDE Ordinance, permit, or any order issued hereunder, the City Official or his agent may serve upon such person written notice of the violation by a Uniform Non-Traffic Citation and Complaint. This Notice of Violation shall contain:

1. The name and address of the alleged violator;
2. The address of the Premises (when available) or a description of the building, structure or land upon which the violation is occurring or has occurred;
3. A statement specifying the nature of the violation; and
4. Scheduled court date and/or pay date.

The City Official or agent may require without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of illicit connections and/or illicit discharges;
3. That violating discharges, practices, or operations shall cease and desist;
4. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
5. Payment of an amount equal to administrative and remediation; and/or
6. The implementation of source control or treatment BMPs.

Upon issuance of a written Notice of Violation, the City Official shall notify ADEM regarding status of the illicit discharge.

If the violation is not corrected within the time frame specified in the Notice of Violation, the City Official shall determine if the enforcement action should be escalated to Judicial Proceedings.

### 5.14.4. Fines

Fines provided by the IDDE Ordinance include the following:

1. First Violation - The fine of sixty dollars ($60.00) shall be assessed for a first violation of this ordinance.

2. Second Violation - The fine of one hundred and fifty dollars ($150.00) shall be assessed for a second violation of this ordinance within a 30-day period.

3. Third or Subsequent Violation - For a third or subsequent violation committed by the owner during a 30-day period or longer, the violation will be adjudicated and the penalty determined by the municipal judge.

4. If after a ninety (90) day period, all violations of this ordinance have been rectified and no additional violations have occurred during that ninety (90) day period, then any further violations of this ordinance will be assessed as a first violation.

## 5.15. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the IDDE Program. Program goals are summarized in Table 5.5.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of IDDE Program. Results of the program evaluation shall be summarized in the Annual Report.

## Table 5.5
## Illicit Discharge Detection and Elimination – Program Goals

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Legal Authority | Illicit Discharge Detection and Elimination Ordinance | Update as needed | 30 September 2021 | Engineering |
| Outfall Inventory | SOPs | Update as needed | 30 September 2021 | Engineering |
| | Major Outfall inventory and evaluation schedule | Annually | 30 September 2021 | |
| | Major Outfall evaluation inspection form | Update as needed | 30 September 2021 | |
| | Major Outfall map | Annually | 30 September 2021 | |
| | Major Outfall evaluation and screening | Once / 5 years | 30 September 2023 | |
| | Evaluate priority areas for additional screening | Update as needed | 30 September 2021 | |
| Illicit Discharges | Complaint tracking system | Track | 30 September 2021 | Public Works |
| | SOPs | Update as needed | 30 September 2021 | Engineering |
| | Illicit discharge inspection form | Update as needed | 30 September 2021 | |
| | Illicit discharge investigations | Track | 30 September 2021 | |
| Program Evaluation | Evaluate program effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 6

## Construction Site Storm Water Runoff

# 6. Construction Site Stormwater Runoff

## 6.1. Introduction

The variety of pollutants present at a construction site and the severity of their potential effects to receiving waters are dependent upon several factors.

- Nature of construction activity – During clearing and grading activities, the primary pollutant of concern is sediment. As the construction activity progress in the building phase other potential pollutants of concern include concrete wash, paints, stucco, pesticides, herbicides, fertilizers, cleaning solvents, asphalt products, scrap wood, metal, glass, trash debris, etc.

- Physical characteristics of the construction site – Potential pollutants at a construction site are carried off in stormwater runoff. Construction sites can potentially increase the intensity and volume of stormwater runoff resulting in an increase of pollutant loadings.

- Proximity of surface waters – The closer the construction activity is to a surface water increase the potential impacts to surface waters.

The City has implemented a Construction Site Runoff Program to monitor and control pollutants in stormwater discharges to the MS4 from the following land disturbing activities.

- Qualifying Construction Site – Land disturbance activity equal to or greater than one (1) acre or land disturbance involving less than one (1) acre that is part of a larger common plan of development; and,

- All other land disturbance activities that is not exempted from obtaining a grading permit.

This Construction Site Runoff Program has been developed using the following guidance materials:

- Developing Your Stormwater Pollution Prevention Plan, A Guide for Construction Sites, Environmental Protection Agency, EPA 833-R-06-004, May 2007; and,

- Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, Alabama Soil and Water Conservation Committee, July 2018.

These documents are incorporated into the SWMP Plan by reference and are available in the office of the City Engineer.

The City's Construction Site Stormwater Runoff Control Program includes the activities described in Part II.B.4 of the NPDES Permit.

## 6.2. Program Administration

Public Works is responsible for the development and implementation of the Construction Site Runoff Program. Specific responsibilities associated with each department are summarized below:

- Engineering Department is responsible for construction projects associated with developments that require the construction of infrastructure (roads, water, storm sewer, sanitary sewer, mass grading, etc.).

- Building Department is responsible for construction projects associated with the construction of industrial, commercial, and residential buildings.

## 6.3. Legal Authority

On 15 October 2013, the City of Montgomery adopted an Erosion and Sedimentation Control Ordinance (Ordinance No. 56-2013). A copy of the ordinance is provided electronically in Appendix B and is available online at the following link:

https://library.municode.com/al/montgomery/codes/code_of_ordinances.

## 6.4. Report an Issue - 311

The City of Montgomery has implemented a hotline and web reporting system for the general public to report suspect issues with construction sites and/or to report incidents that may potentially impact the City's MS4. A citizen can report an issue of concern by using one of the following:

- Hotline: 311 or 240-INFO
- Webpage: http:///www.montgomeryal.gov
- Mobile App: AccessMontgomery

## 6.5. Standard Operating Procedures

The City has developed SOPs for the various activities required for implementing the Construction Site Runoff Program. SOPs include but are not limited to the following:

- SOP# CSR-01 – Building Inspectors – Construction Site Inspections;
- SOP# CSR-02 – Development Inspectors – Construction Site Inspections; and,
- SOP# CSR-03 – Development Project Process.

SOPs are provided in Appendix F.

## 6.6. Requirements and Control Measures

City of Montgomery's Construction Site Runoff Program requires owners and/or operators of construction sites to select, design, install, implement, inspect, and maintain effective BMPs to minimize the discharge of pollutants into the MS4 to the MEP.

### 6.6.1. Erosion and Sediment Controls

The owner and/or operator shall select, design, install, implement, inspect, and maintain BMPs appropriate to specific site conditions to, at a minimum:

1. Control stormwater volume and velocity within the site to minimize soil erosion;
2. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
3. Minimize the amount of soil exposed during construction activity through the use of project phasing;
4. Minimize the disturbance of steep slopes;
5. Minimize sediment discharges from the site;
6. Minimize the generation of dust and off-site tracking of sediment from vehicles;
7. Stabilize all construction entrances and exits;
8. Minimize soil compaction and preserve topsoil;

9. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible; and,
10. Implement measures or requirements to achieve the pollutant reductions consistent with a TMDL finalized or approved by EPA.

The City has developed some standard details for typical BMPs used for residential construction. A copy of the details is provided in Appendix F.

### 6.6.2. Soil Stabilization

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 13 calendar days.

### 6.6.3. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations are prohibited unless managed by appropriate BMPs.

### 6.6.4. Pollution Prevention Measures

The owner and/or operator shall select, design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and,

3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

### 6.6.5. Prohibited Discharges

The following discharges are prohibited:

1. Wastewater from washout of concrete, unless managed by an appropriate BMP;
2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Soaps or solvents used in vehicle and equipment washing;
5. Discharges where the turbidity of such discharge will cause or contribute to a substantial visible contrast with the natural appearance of the receiving water; and,
6. Discharges where the turbidity of such discharge will cause or contribute an increase in the turbidity of the receiving water by more than 50 NTUs above background.

### 6.6.6. Surface Outlets

When discharging from basins and impoundments the owner and/or operator shall utilize outlet structures that withdraw water from the surface, unless infeasible.

## 6.7. Training and Education

All inspectors shall maintain current certification as a Qualified Credentialed Inspector (QCI). To further support this program element, additional staff may obtain and maintain either a QCP or QCI certification. Staff shall receive annual refresher training. Copies of the current QCI training certificates shall be included in the Annual Report.

To assist educating private construction operators, the City has placed materials and links on its website to provide information about the appropriate application and maintenance of erosion and sediment controls.

## 6.8. Permitting

The City has a process for owners of a development project to obtain a grading permit and guarantee a performance bond for erosion and sediment control activities. The City's grading permit package includes the following:

- Instructions for owners;
- Grading Permit fee schedule and required bond amounts;
- Grading Permit application;
- ADEM requirements for NPDES permits;
- Priority watershed maps;
- Standard BMP details;
- Typical narrative for single family residence construction;
- Checklist for reviewing erosion and sediment control plans; and,
- Bond assurance.

A technical memorandum was issued to clarify instances where a grading permit can be issued without a building permit. This technical memorandum required owners and/or contractors to meet the following minimum requirements until a building permit is issued:

- An onsite pre-construction conference with the owner/contractor and Building Inspections inspector;
- Notification from owner/contractor to inspector of grading activities at least 24 hours prior to commencing;
- Inspector shall conduct a site inspection within 72 hours of being notified of grading activities; and,
- The inspector shall perform monthly inspections at a minimum until a Building Permit is issued for the site.

Copies of the grading permit package and technical memorandum are provided in Appendix F of the SWMP Plan.

Depending upon the type of construction project, either a Building Permit or Development Permit will also be required. Projects utilizing the Smart Code are reviewed by the Consolidated Review Committed for review and approval before going through the Development Permit process. Copies of the permit applications and submittal checklists are provided in Appendix F. The permitting and plan review process are provided in Figure 6.1 and Figure 6.2.

**Figure 6.1 Building Permit and Plan Review Flow Chart**

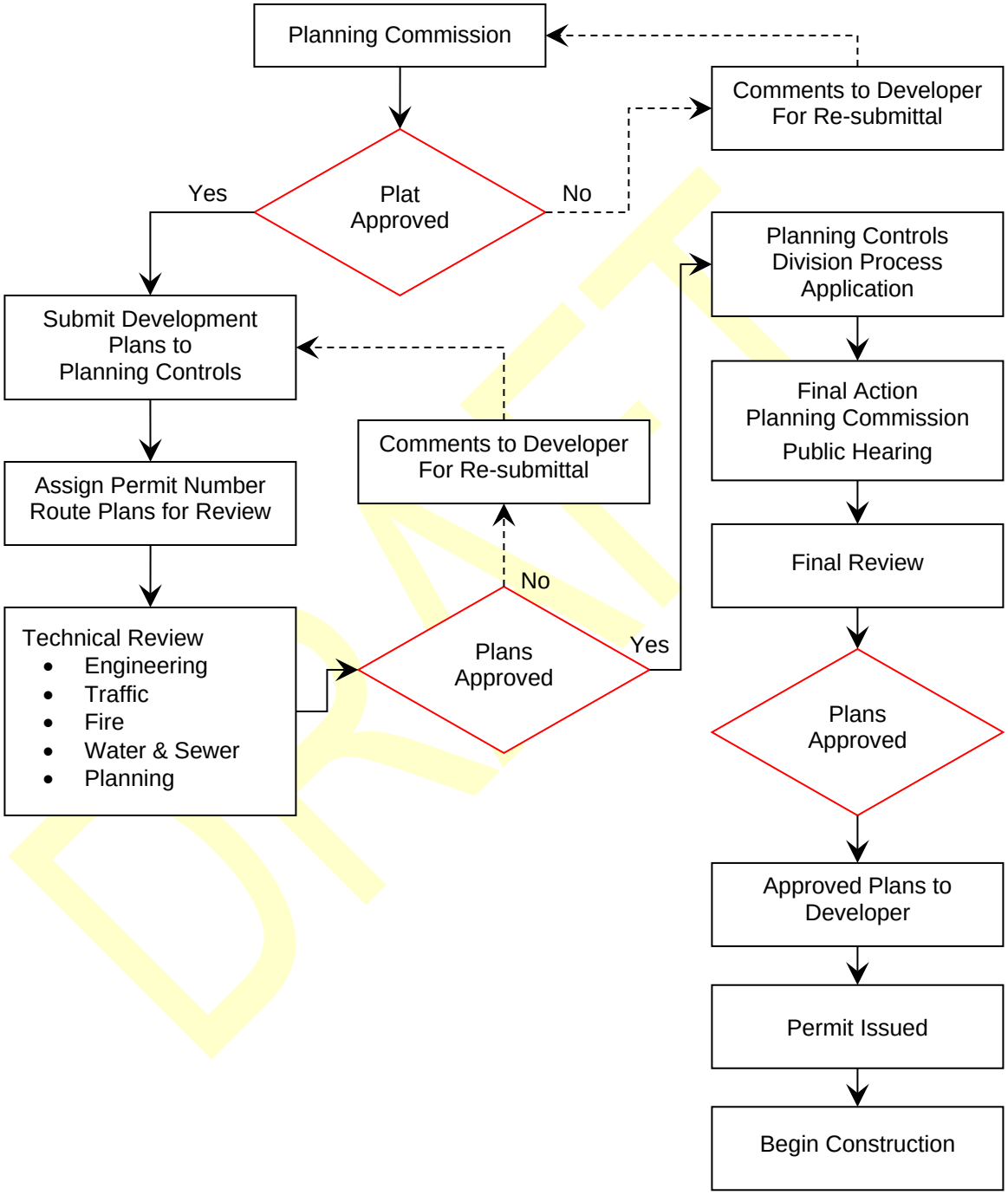
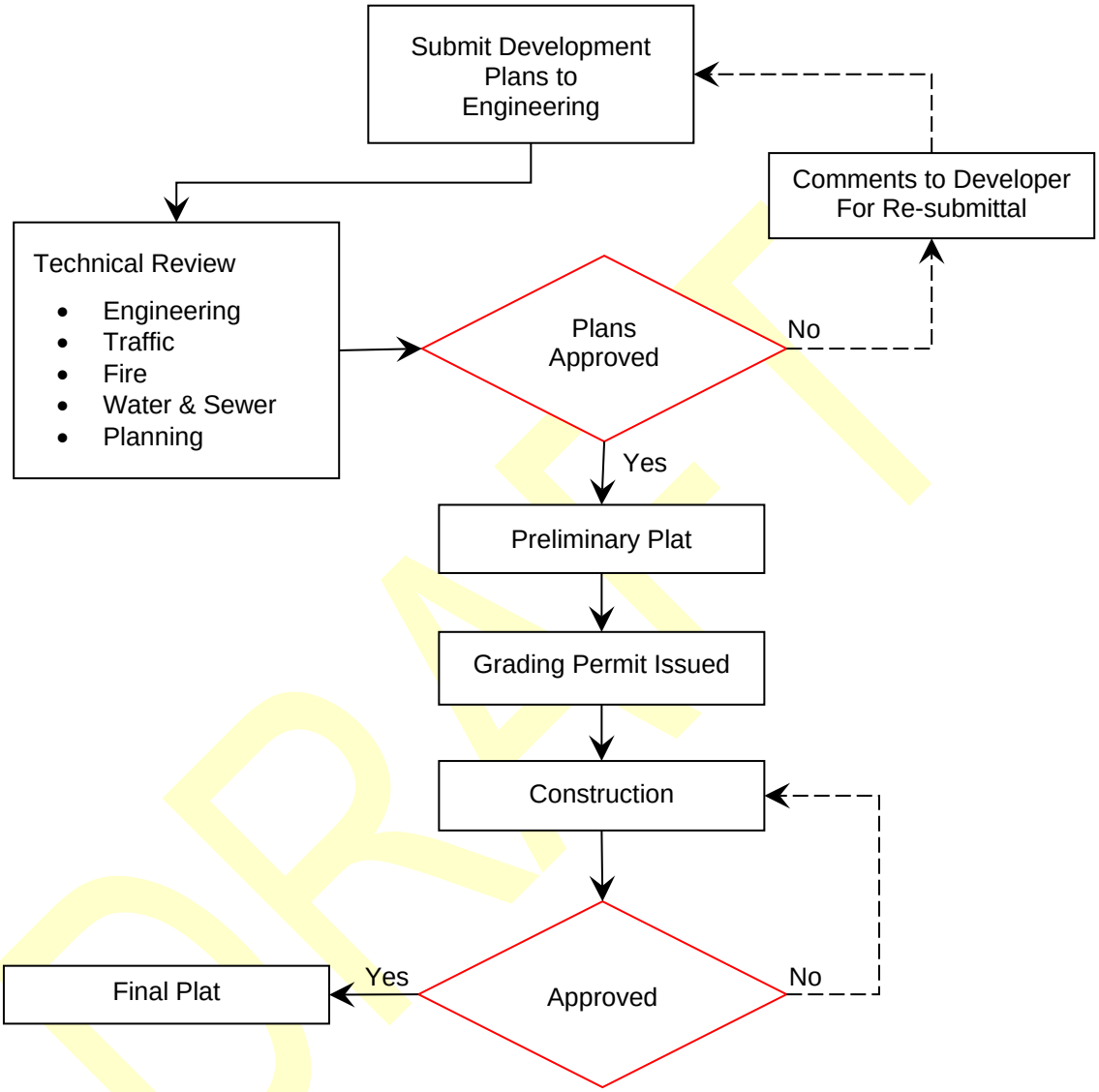


**Figure 6.2 Development Permit and Plan Review Flow Chart**




## 6.9. Plan Review

Before the commencement of any land disturbing activity that is not exempted from obtaining a permit, the owner and/or operator of the construction site is required to submit a permit application for approval of the CBMP Plan. BMPs selected for the site shall be designed, sized, and/or maintained in accordance with the following references:

- Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, Alabama Soil and Water Conservation Committee, July 2018.

- Developing Your Stormwater Pollution Prevention Plan, A Guide for Construction Sites, Environmental Protection Agency, EPA 833-R-06-004, May 2007; and,

- National Pollutant Discharge Elimination System General Permit ALR100000 for discharges from construction activities.

Review of the CBMP Plan shall be performed by personnel that are knowledgeable in the many facets of design, stormwater management, erosion and sediment control, and construction. The City has developed a Standard Operating Procedure (SOP) for CBMP Plan review which is provided in Appendix F.

## 6.10. Construction Site Inventory

The City continuously maintains an updated inventory of all active construction sites within the City's MS4 area. The City may develop a map of active construction sites as of the end of the previous permit year.

## 6.11. Inspections

After the CBMP Plan has been approved, a copy of the approved CBMP Plan shall be provided to the Developer and the project shall be assigned to one of the City's inspectors. The inspector shall review the CBMP Plan, design plans and all applicable project documents. All inspections and activities associated with the project will be tracked by the permit number.

### 6.11.1. Initial Inspection (Optional)

The City may require an initial inspection on development projects. If an initial inspection is required, The Developer shall contact the inspector to schedule an initial inspection after perimeter BMPs have been installed. The Developer and/or their representatives shall accompany the inspector during the initial inspection. The initial inspection shall address the following:

- Inspect all discharge points from the site;
- Inspect perimeter controls; and,
- Compare installed BMPs with the CBMP Plan.

If all BMPs have been installed in accordance with the CBMP Plan and to the satisfaction of the inspector, the inspector shall approve the initial inspection and allow the Developer to proceed with construction of the project. The inspector shall document the results of the initial inspection.

If deficiencies are noted during the initial inspection, the inspector shall discuss the nature of the deficiencies with the Developer during the initial inspection. After all deficiencies have been corrected, the Developer shall contact the inspector to reschedule the initial inspection. If all deficiencies have been corrected, the inspector shall approve the initial inspection and allow the Developer to proceed with construction of the project. The inspector shall document the results of the initial inspection.

### 6.11.2. Routine Inspection

The inspector performs routine inspections throughout the construction process. Routine inspections are typically performed before foundation, framing and final inspections.

Since all of the City's inspectors will be QCI certified, the inspector shall evaluate BMPs before inspecting any other activities at the site. The inspection shall address the following:

- Inspect all discharge points from the site;
- Inspect perimeter controls;
- Compare installed BMPs with the CBMP Plan;
- Inspect disturbed areas not currently being worked;
- Inspect areas with final stabilization;
- Inspect perimeter areas; and
- Request copies of the Developer's inspection reports.

If deficiencies are noted during the inspection, the inspector shall discuss the nature of the deficiencies with the Developer. The Developer shall be given 48 hours to correct all deficiencies noted by the inspector. Other inspections associated with foundations, framing and final will not be performed until all BMP deficiencies have been corrected. The inspector shall document the results of the inspection and schedule the site for re-inspection.

Inspections of priority construction sites shall be performed at a minimum frequency of monthly. All other qualifying construction sites shall be inspected at a minimum frequency of every two months. The inspection frequency may be increased depending upon the following:

- Status of construction;
- Site conditions;
- Site size;
- Site location;
- Site proximity to sensitive waters and/or areas;
- Type of construction;
- Historical performance and/or issues with the Developer; and
- Significant storm events.

### 6.11.3. Re-Inspection

If a site fails the routine inspection, the site shall be scheduled for a re-inspection. The re-inspection shall focus on areas that were determined deficient during the routine inspection. If all deficiencies have been corrected to the satisfaction of the inspector, the inspector shall continue with routine inspections. The inspector shall document the results of the inspection.

### 6.11.4. Final Inspection

Upon completion of all construction activity, the Developer shall request a final inspection. The inspection shall address the following:

- Inspect all discharge points from the site;
- Inspect areas with final stabilization;
- Inspect perimeter areas;
- Request copies of the Developer's inspection reports; and,
- Request copy of the Termination of Registration letter from ADEM.

If deficiencies are noted during the inspection, the inspector shall discuss the nature of the deficiencies with the Developer and the Developer shall be asked to reschedule the final inspection. The inspector shall document the results of the inspection and schedule the site for re-inspection.

If the site passes the final inspection, a certificate of occupancy shall be provided. The inspector shall document the results of the inspection.

## 6.12. Enforcement

The Erosion and Sediment Control (ESC) Ordinance will provide the inspector with an escalating scale of enforcement action for violation of any provision in the

ordinance. Enforcement actions provided by the ESC Ordinance is described below:

### 6.12.1. Warning Notice

When the City Official determines that any person has violated or continues to violate any provision of the ESC Ordinance, the City Official may serve upon that person a Warning Notice specifying the particular violation to have occurred and requesting that the discharger immediately seek to cease any offending discharge.

If the violation is not corrected immediately, the City Official shall determine if the enforcement action should be escalated to a Compliance Order.

### 6.12.2. Compliance Order

When the City Official finds that any person has violated, or continues to violate, the ESC Ordinance, he may issue a compliance order to the violator, directing that, within a specified time period, adequate structures and devices be installed, or procedures implemented, and properly operated or other action be taken to remedy such violation.

If the violation is not corrected immediately, the City Official shall determine if the enforcement action should be escalated to a Notice of Violation.

### 6.12.3. Stop Work Order

In the event that any person holding a grading permit or building permit pursuant to the ESC Ordinance violates the terms of the grading permit or implements site development in such a manner as to materially adversely affect the health, welfare, or safety of persons residing or working in the neighborhood or development site so as to be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood, the City Official may immediately suspend or revoke the grading permit.

### 6.12.4. Notice of Violation

Whenever the City Official finds that any person is in violation of any provision of the ESC Ordinance, permit, or any order issued hereunder, the City Official or his agent may serve upon such person written notice of the violation by a Uniform Non-Traffic Citation and Complaint. This Notice of Violation shall contain:

- The name and address of the alleged violator;

- The address of the Premises (when available) or a description of the building, structure or land upon which the violation is occurring or has occurred;
- A statement specifying the nature of the violation; and
- Scheduled court date and/or pay date.

The City Official or agent may require without limitation:

- The performance of monitoring, analyses, and reporting;
- The elimination of illicit connections and/or illicit discharges;
- That violating discharges, practices, or operations shall cease and desist;
- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
- Payment of an amount equal to administrative and remediation; and/or
- The implementation of source control or treatment BMPs.

Upon issuance of a written Notice of Violation, the City Official shall notify ADEM regarding status of the illicit discharge.

### 6.12.5. Fines

Fines provided by the ESC Ordinance include the following:

1. First Violation - The fine of sixty dollars ($60.00) shall be assessed for a first violation of this ordinance.

2. Second Violation - The fine of one hundred and fifty dollars ($150.00) shall be assessed for a second violation of this ordinance within a 30-day period.

3. Third or Subsequent Violation - For a third or subsequent violation committed by the owner during a 30-day period or longer, the violation will be adjudicated and the penalty determined by the municipal judge.

4. If after a ninety (90) day period, all violations of this ordinance have been rectified and no additional violations have occurred during that ninety (90) day period, then any further violations of this ordinance will be assessed as a first violation.

## 6.13. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Construction Site Runoff Program. Program goals are summarized in Table 6.1.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of Construction Site Runoff Program. Results of the program evaluation shall be summarized in the Annual Report.

## Table 6.1
## Construction Site Stormwater Runoff – Program Goals

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Legal Authority | Erosion and Sedimentation Control Ordinance | Update as needed | 30 September 2021 | Engineering |
| | Subdivision Regulations | Update as needed | 30 September 2021 | Planning |
| Permitting | SOPs | Update as needed | 30 September 2021 | Engineering & Building |
| | Building Permit Application Form | Update as needed | 30 September 2021 | Engineering<br>Building |
| | Grading Permit Application Form | Update as needed | 30 September 2021 | |
| | Tracking System | Update as needed | 30 September 2021 | |
| | Permit Review Checklist | Update as needed | 30 September 2021 | Engineering |
| Plan Review | SOPs | Update as needed | 30 September 2021 | Engineering<br>Building<br>Planning |
| | Review Checklist | Update as needed | 30 September 2021 | |
| | CBMP Plan Requirements | Update as needed | 30 September 2021 | |
| | Plans Reviewed | Track | 30 September 2021 | |
| Inventory | Construction Site Inventory | Track | 30 September 2021 | Engineering & Building |
| Inspections | SOPs | Update as needed | 30 September 2021 | Engineering<br>Building |
| | Inspection Form | Update as needed | 30 September 2021 | |
| | Inspections | Track | 30 September 2021 | |
| Enforcement Actions | Enforcement Actions | Track | 30 September 2021 | Engineering |
| Training & Education | QCI Training | Annually | 30 September 2021 | Engineering |
| | Website Education Materials | Update as needed | 30 September 2021 | |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
| | | | | |

# SECTION 7

## Post Construction Storm Water Management

# 7. Post-construction Stormwater Management

## 7.1. Introduction

Post-construction runoff generally has two types of impacts. First, developed areas will increase the type and quantity of pollutants in stormwater runoff. When stormwater flows over areas altered by development it has a potential to pick up a variety of pollutants including but not limited to trash, debris, sediment, oil, grease, pesticides, heavy metals and/or nutrients, and carry these pollutants to the streams and lakes. Second, development increases the impervious surfaces of an area resulting in a quantity increase of stormwater runoff. Increased impervious surfaces like buildings and parking lots interrupt the natural cycle of gradual percolation of stormwater through the vegetation and soil. Instead, stormwater is collected on the impervious surface and conveyed to drainage systems where increase volumes of stormwater runoff enter the stream quickly. As a result, stream banks are more susceptible to scouring and the downstream areas have a higher potential of flooding.

The NPDES permit requires the City to develop, implement and enforce a program to address stormwater discharges from qualifying new development and redevelopment projects. Goals of this program are to:

- Retain the pre-disturbance hydrological conditions;
- Remove suspended solids and associated pollutants entrained in stormwater runoff that result from activities occurring during and after development;
- Decrease the erosive potential of increased runoff volumes and velocities associated with development;
- Preserve natural systems including in-stream habitat, riparian areas and wetlands; and,
- Reduce the thermal impacts that result from impervious surfaces and treatment devices with large amounts of surface exposed to sunlight such as wet ponds.

The City's Post-Construction Stormwater Management in New Development and Re-Development Program includes the activities described in Part II.B.5 of the NPDES Permit.

## 7.2. Program Administration

The Planning Department shall be responsible for the planning activities and documents. The Engineering Department shall be responsible for design standards, plan review, as-built certification, inspection, and maintenance requirements for post-construction structural BMPs.

## 7.3. Legal Authority

The City has reviewed existing ordinances and determined that the City already has the authority to implement a post-construction stormwater management program.

## 7.4. Planning and Regulations

Post-construction stormwater management involves the implementation of structural and/or non-structural BMPs to provide permanent stormwater management over the life of a property's use. It is important to recognize that many BMPs are climate dependent and not all BMPs are suitable for every site. The City shall evaluate and identify BMPs that are suitable for this area and are within the City's regulatory control. The following sections will generally describe BMPs that have been or shall be considered.

### 7.4.1. Development Regulations

The City has developed regional and localized master development plans that evaluate the existing land uses, development patterns, redevelopment patterns, and natural resources within the City. The City's SmartCode, zoning ordinance, and subdivision regulations provide a mechanism to implement a post-construction stormwater management program. Non-structural BMPs include but not limited to the following:

- Design standards;
- Plan review and approval procedures;
- Post-construction BMP evaluation and inspection procedures; and,
- BMP maintenance requirements.

The subdivision regulations already contain a provision to address the quantity of post developed stormwater runoff.

### 7.4.2. SmartCode Manual

The City of Montgomery adopted the SmartCode Manual in 2006 with the latest revision published on 6 August 2019. The SmartCode Manual discusses the following:

- General Provision for All Plans;
- New Community Plans;
- Infill Plans;
- Building Plans;
- Standards and Tables; and
- Definitions of Terms.

The SmartCode establishes requirements for seven different "Transect Zones," including Environmental Standards. These standards include landscape species requirements, maximum impermeable surface lot coverage ratio, and type of stormwater management system. For example, for the Sub-Urban Zone (T3), impermeable surfaces can only cover a maximum of 60% of the individual lot size and stormwater is managed through retention and percolation on the individual lot or through swales in the public frontage. The SmartCode establishes the following Transect Zones:

- T1 – the Natural Zone – consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology, or vegetation.

- T2 – the Rural Zone – consists of lands in open or cultivated state or sparsely settled. These may include woodland, agricultural lands, grasslands, and irrigable deserts.

- T3 – the Sub-Urban Zone – though similar to conventional low-density suburban house areas, differs by allowing home occupations. Planting is naturalistic with deep setbacks. Blocks may be large and the roads irregular to accommodate natural conditions.

- T4 – the General Urban Zone – is a denser and primarily residential urban fabric. Mixed-use is usually confined to corner locations. It has a wide range of building types: single, side yard, and row houses. Setbacks and landscaping are variable. Streets typically define medium-sized blocks.

- T5 – the Urban Center Zone – is the equivalent of a main street, including building types that accommodate retail, offices, row houses and apartments. It is usually a light network of streets, with wide sidewalks, steady street tree planting and buildings set close to the frontages.

- T6 – the Urban Core Zone – is the equivalent of a downtown. It contains the tallest buildings, the greatest variety, and unique civic buildings in particular. It is the least naturalistic; street trees are steadily planted and sometimes absent.

- SD – Specialized Districts – are those areas with buildings that by their intrinsic function, disposition, or configuration, cannot conform to one of the six normative Transect Zones. Typical Districts may include institutional campuses, refinery sites, airports, etc.

The SmartCode Manual is provided in Appendix B and is available on the City's website at the following link:

https://www.montgomeryal.gov/home/showdocument?id=11074.

### 7.4.3. Envision Montgomery 2040 Comprehensive Plan

The City is in the process of developing a comprehensive plan for the first time since 1963 called the Envision Montgomery 2040 Comprehensive Plan. The Plan is currently in draft form with potential adoption scheduled for 2020. The draft Plan describes the City currently and outlines goals related to the following:

- Land Use and Development;
- Community Character;
- Parks and Recreation;
- Military;
- Community Development;
- Public Health;
- Historic Preservation;
- Education;
- Cultural Assets;
- Mobility;
- Economic Development;
- Community Facilities; and,
- Infrastructure.

Environmental principles and action items mentioned in the draft Plan include:

- Regulations ensure preservation and resiliency of the natural environment:
  - Amend tree preservation and replacement requirements for private development;
  - Explore adopting an Urban Farm Ordinance;
  - Evaluate policies pertaining to natural resource buffering (rivers, streams, floodplains, wetlands, etc.); and,
  - Adopt a Green Building Policy to support green building practices.
- Community health is enhanced through improved access to the natural environment:
  - Support and encourage the continued remediation of brownfield areas;
  - Evaluate the feasibility of daylighting stream corridors;
  - Develop a citywide tree planting campaign;
  - Monitor and assess the conditions of the Capital City and Coliseum Boulevard Plumes; and,
  - Create a Cypress Creek Preserve.
- Long-term sustainability is supported by logical environmental policy:
  - Conduct a citywide Climate Resiliency Assessment;
  - Join the National Flood Insurance Programs (NFIP) Community Rating System;
  - Develop a long-term floodplain management strategy; and,
  - Support continued refinement of recycling programs.

A copy of the draft Envision Montgomery 2040 Comprehensive Plan is incorporated into the SWMP Plan by reference and is available on a dedicated City website for the plan development at the following link:

https://envisionmontgomery2040.org/.

### 7.4.4. Montgomery Strategic Development Concept

The City adopted the Strategic Development Concept in 2008, which applies to the entire City. The Strategic Development Concept has five major policy themes:

- Protect Montgomery's Green Infrastructure;
  - Conserve green infrastructure and landscape form
  - Organize development around open spaces and civic uses
- Protect and Reinvest in the Community;
- Build a City of Neighborhoods Supported by Activity Centers;

- Expand Transportation and Accessibility Opportunities; and,
- Maintain and Enhance Community Character.

The Strategic Development Plan includes a list of action items suggested to the City of Montgomery that include:

- Revise the Zoning Ordinance and Subdivision Regulations to reflect and incorporate the new land development policies; and
- Establish additional plan review guidelines and checklists for each type of development.

The latest version of the Montgomery Strategic Development Concept is incorporated into the SWMP Plan by reference and is available online at the following link:

https://www.montgomeryal.gov/home/showdocument?id=2264.

### 7.4.5. Downtown Montgomery Master Plan

The Downtown Montgomery Master Plan was developed in 2007 to update, continue upon, and expand the Riverfront & Downtown Master Plan. The Plan listed 20 specific projects and also suggested adopting the SmartCode, Transect Map and the International Existing Building Code.

The latest version of the Downtown Montgomery Master Plan is incorporated into the SWMP Plan by reference and is available online at the following link:

https://www.montgomeryal.gov/home/showdocument?id=2262.

### 7.4.6. Montgomery Street Tree Master Plan

The City of Montgomery adopted the Street Tree Master Plan in 2007. The Street Tree Master Plan follows both the SmartCode and Downtown Master Plan when determining street tree locations and required spacing. The plan lists short-range priorities for downtown areas and long-range priorities for outlying areas and maintenance.

The City has been very proactive in expanding the tree canopy not only in the urban areas of the City, but throughout the City. Previously, the City evaluated the benefits of expanding its tree canopy. As noted in this evaluation, benefits include but are not limited to the following:

- Reduce the heat island effect;
- Reduce flooding;
- Improve stormwater quality;
- Improve air quality; and,
- Provide an aesthetical streetscape.

Implementation of the City's Street Tree Master Plan has produced an extensive tree canopy throughout the City. The extents of this tree canopy is shown in Figure 7.1**Error! Reference source not found.** and an inventory of City owned trees is provided in Appendix G.

The latest version of the Montgomery Street Tree Master Plan is incorporated into the SWMP Plan by reference and is available on the City's website at the following link:

https://www.montgomeryal.gov/home/showdocument?id=270.

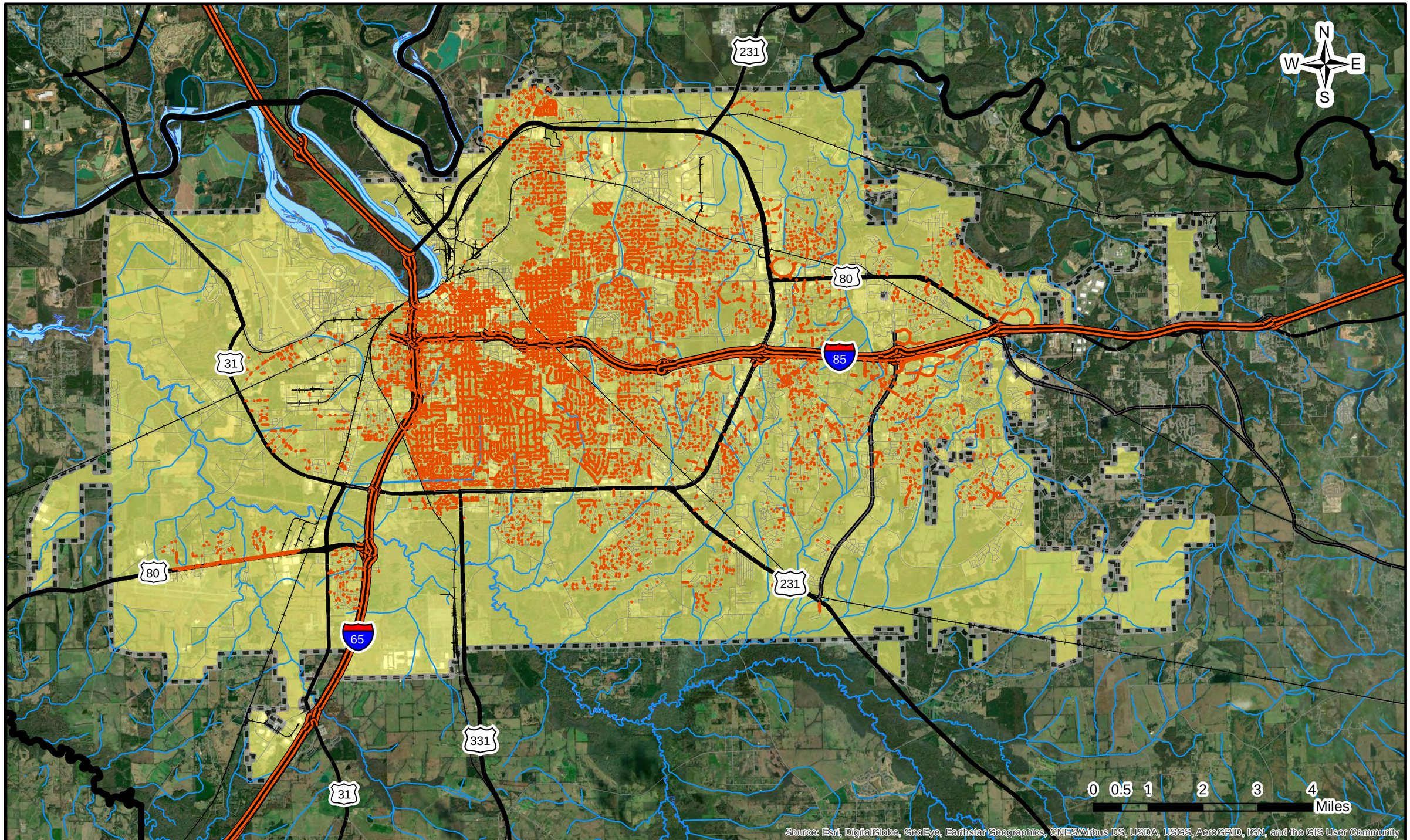
### 7.4.7. Development District Plans

The City has several redevelopment plans approved for downtown and surrounding area neighborhoods which involve and adhere to the SmartCode Manual. These areas will be considered Traditional Neighborhood Districts (TNDs) or Transit Oriented Districts (TODs), which follow guidelines for higher density development and conservation of green space. The following areas have been planned:

- Bell Street Neighborhood;
- Bellingrath-Cloverdale Neighborhood;
- Capitol Heights Neighborhood;
- Centennial Hill Neighborhood;
- Cypress Creek Neighborhood;
- Forest to Zelda Road Area;
- Maxwell Boulevard Area;
- Oak Park and Centennial Hill Neighborhood;
- Rosa Parks Combined Communities and Five Points; and,
- South Montgomery Community Plan; and, West Fairview Avenue Area and Amendment.

The latest version of the Development District Plans is incorporated into the SWMP Plan by reference and is available on the City's website at the following link:

https://www.montgomeryal.gov/city-government/departments/planning/long-range-planning.




HYDRO ENGINEERING SOLUTIONS

City of Montgomery

City Tree

**CITY OF MONTGOMERY**

Tree Inventory

Figure 7-1

October 2020

## 7.5. Program Components

There are a variety of structural BMPs capable of not only managing the volume and velocity of stormwater runoff, but also provides very effective treatment of stormwater runoff. Structural BMPs may include but are not limited to the following:

- Stormwater retention / detention basins;
- Underground detention and infiltration;
- Hydrodynamic separators;
- Infiltration basins / trenches;
- Pervious pavement;
- Grass swales;
- Filter strips;
- Constructed wetlands;
- Rain barrels; and,
- Rain gardens.

As the City's post-construction stormwater management program continues to evolve, the City may evaluate and identify the most appropriate BMPs to ensure, to the maximum extent practicable, that post-construction runoff mimics pre-construction hydrology. A 1.1 inches 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.

### 7.5.1. Post-construction Technical Memorandum

The City maintains a technical memorandum describing how the City will implement a post-construction stormwater management program for qualifying new development or redevelopment. Components of the technical memorandum include the following:

- Overview;
- Applicable Developments;
- Implementation;
- Waiver Requests;
- Water Quality Requirements;
- Low Impact Development;
- Design Standards and Requirements;
- As-Built Certification;
- Annual Inspections; and,
- Operation and Maintenance.

The technical memorandum became effective on 1 October 2015 and was last updated on 1 March 2020. The current Technical Memorandum clarified frequently

asked questions, updated design, as-built and inspection forms, and created new forms for additional BMPs.

Copies of the Technical Memorandum and Forms discussed in the following sections are provided in Appendix G and available on the City's website at the following link:

https://www.montgomeryal.gov/city-government/departments/engineering-environmental-services/stormwater-management/post-construction-stormwater-management

### 7.5.2. Waiver Request

The City recognizes that there are existing project sites that have been constructed or previously approved, prior to the effective date of the Technical Memorandum, that may qualify for a waiver from the updated post-construction stormwater management requirements. Also, there may be projects which reduce the existing impervious area within the development. As a result, the City has developed two Post-Construction Stormwater Management Waiver Request Forms to address existing project sites and sites with impervious area reductions. For a project site to be considered for a waiver, the waiver request form must be completed and submitted to the City for review and approval. If a waiver has been submitted for a development that has not been completed and the density of the development is increased and/or modified, the developer may be required to resubmit a waiver request for this development.

### 7.5.3. Water Quality Requirements

Post-construction stormwater runoff quality is an important component of the City's SWMP. For all qualifying new development or redevelopment, post-construction stormwater management shall include water quality BMPs to detain and treat the first 1.1 inches of rainfall that occurs on the project site.

### 7.5.4. Low Impact Development

The City shall encourage landowners and developers to incorporate the use of low impact development (LID) into development plans. The City has reviewed and adopted the latest version of the *Low Impact Development (LID) Handbook for the State of Alabama*.

### 7.5.5. Post-construction BMP Plan Review

The City already has a permitting and plan review process that is shown in Figure 6.2. During the development of the Post-Construction Stormwater Management Program, the City has incorporated the post-construction BMP plan review into the existing process.

### 7.5.6. As-built Certification

As a part of the NPDES permit, the City must insure the BMPs that have been designed and approved are constructed and operated in accordance with their original design and intent. To confirm that the constructed BMPs meet the designer's intent, an As-Built Certification Form has been developed.

It is the Owner's responsibility to have as-built information, such as pond volume, embankment size and elevations, invert size and elevations, and spillway elevations field surveyed by a Professional Land Surveyor. It is the Engineer-of-Record's responsibility to utilize the field surveyed information to fill out the As-Built Certification Form.

### 7.5.7. Annual Inspection

For post-construction BMPs to continue to function in accordance with their original design and installation, annual inspections are required by the City's NPDES permit. The Owner of the project is required to have annual inspections performed and must then submit the required Annual Inspection Form to the City. The Annual Inspection Form shall provide documentation concerning the condition of each facility in terms of vegetative cover, erosion that may be occurring, the condition of inlets into the pond and the pond outlet, embankment conditions, and any maintenance required and/or performed. The City shall evaluate the documentation submitted to confirm that the stormwater management facilities are continuing to function as designed.

### 7.5.8. Operation and Maintenance

It is the responsibility of the Owner to operate and maintain the stormwater management facility and/or BMPs in accordance with the original design intent and approval. If the original Owner or Developer has sold the project or passed ownership on to a Homeowner's Association, then it is the new Owner’s or HOA's responsibility to maintain the facility and provide any required inspection and maintenance.

Should maintenance be needed at a facility as a result of the Annual Inspection, the Owner is required to provide the City with documentation describing the maintenance required and a schedule for completing all maintenance activities. Once all maintenance activities are completed, the Owner is required to provide documentation to the City of the maintenance performed and that the BMP operates as it was designed.

## 7.6. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing a Post-construction Stormwater Management Program. Program goals are summarized in Table 7.1.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of Post-construction Stormwater Management Program. The results of the program evaluation shall be summarized in the Annual Report.

**Table 7.1**
**Post Construction Stormwater Management – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Legal Authority | Post Construction Ordinance | Develop as needed | 30 September 2021 | Engineering Planning |
| | Landscape Ordinance | Update as needed | 30 September 2021 | |
| | Zoning Regulation | Update as needed | 30 September 2021 | |
| | Subdivision Regulations | Update as needed | 30 September 2021 | |
| Post Construction BMPs | Technical Memorandum and Design Standards | Update as needed | 30 September 2021 | Engineering |
| | Plan Review Procedures and Checklist | Update as needed | 30 September 2021 | |
| | Inventory of Post Construction BMPs | Annually | 30 September 2021 | |
| Waiver Request | Waiver Request Forms | Update as needed | 30 September 2021 | Engineering |
| | Waiver Request | Track | 30 September 2021 | |
| As-Built Certifications | As-Built Certification Forms | Update as needed | 30 September 2021 | Engineering |
| | As-Built Certifications | Track | 30 September 2021 | |
| Annual Inspections | Annual Inspection Forms | Update as needed | 30 September 2021 | Engineering |
| | Annual Inspections | Track | 30 September 2021 | |
| Maintenance | Maintenance Activities | Track | 30 September 2021 | Engineering |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
| | | | | |
| | | | | |
| | | | | |

# SECTION 8

## Spill Prevention and Response

# 8. Spill Prevention and Response

## 8.1. Introduction

The MS4 NPDES permit requires the City to develop a program that will prevent, contain, and respond to spills which might discharge pollutants into the MS4. There are many types of activities, facilities and/or operations that have a potential to cause an accidental or illegal spill. Potential discharges of pollutants into the MS4 resulting from spills can be minimized by implementing proper training, reporting and response systems.

The spill prevention and response program has been divided into two major categories.

- Spill Prevention requires the implementation of programs, activities, and BMPs that prevent a spill from occurring. This aspect of the program will be focused on City facilities where materials are stored in significant quantities; and,

- Spill Response requires immediate action once a spill has occurred. Historically, spill response has been coordinated either through the City's Fire Department and/or Emergency Management Agency (EMA).

The City's Spill Prevention and Response Program includes the activities described in Part II.B.6 of the NPDES Permit.

## 8.2. Program Administration

Spill prevention is primarily applicable to City facilities where vehicles, equipment and materials are stored. These operations are performed under the supervision of the Fleet Maintenance Department.

Spill response associated with spills from vehicle accidents, industrial and/or commercial facilities are the responsibility of the Fire Department.

## 8.3. Program Components

Since spills and leaks can be one of the largest contributors of stormwater pollutants, the City has implemented a spill prevention and response program to

actively prevent and/or control spills. The City has also developed partnerships with other local agencies to help respond to spills that occur within the City.

### 8.3.1. Facility Inventory

To provide the most efficient services to the residents, the City has strategically located support facilities throughout the City. Some of the support facilities include fueling stations and/or the storage of petroleum products. An inventory of support facilities that handle petroleum products is provided in Table 8.1.

**Table 8.1 Petroleum Storage Facilities**

| Facility | SPCC Plan Required | SPCC Plan Developed | SPCC Plan Current |
|---|---|---|---|
| Driver Training Academy | Yes | Yes | Yes |
| Fain Park | Yes | Yes | Yes |
| Fire Station #15 – Taylor Road | Yes | Yes | Yes |
| Fire Station #16 – Ray Thorington Road | Yes | Yes | Yes |
| Montgomery Mall Fire Station | Yes | Yes | Yes |
| Gateway Park | Yes | Yes | Yes |
| Harriott II Riverboat | No | | |
| Lagoon Park | Yes | Yes | Yes |
| Landfill | Yes | Yes | Yes |
| Montgomery Zoo | Yes | Yes | Yes |
| Oak Park | Yes | Yes | Yes |
| Public Works Facility | Yes | Yes | Yes |
| Police Department (Ripley Street) | No | | |
| Shakespeare Park | Yes | Yes | Yes |

An inventory of petroleum products stored at each facility and the SPCC Plans for each facility are provided in Appendix H.

### 8.3.2. Spill Prevention

As part of the Industrial Stormwater Runoff Program, the City has developed an inventory of industrial and City facilities that have a potential to contribute pollutants to stormwater runoff. Facilities that store significant quantities of petroleum products are required to have a Spill Prevention Control and Countermeasures (SPCC) Plan. A SPCC Plan typically includes the following components:

- Location of storage areas, storm sewers, surface waters on or near the site;
- Spill prevention controls, equipment and procedures;
- Spill response procedures;
- Training and inspection requirements; and,
- Contact information and notification procedures.

Spills from other non-petroleum-based products like pesticides, herbicides and fertilizers can also contribute pollutants to stormwater runoff.

### 8.3.3. Spill Response

The City is implementing a very effective program to contain and respond to all hazardous and non-hazardous spills. Currently, the City maintains hazardous response personnel and equipment at Fire Station 3. If a spill occurs, the Fire Department is responsible for responding to and controlling the spill. Depending upon the magnitude of the spill, the Fire Department may utilize other City resources and/or private contractors to respond, contain and clean up the spill.

The Fire Department has developed a Petroleum Leaks and Spill Guideline that describes various activities associated with spill response that includes:

- Personal Protective Equipment;
- Safety;
- Mitigation methods for fuel spills;
- Notifications;
- Hazardous Waste Cleanup; and,
- Termination.

The Fire Department has a progressive training and response program. Training is provided for a variety of topics to applicable personnel. Supporting documents for spill response are provided in Appendix H.

## 8.4. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Spill Prevention and Response Program. Program goals are summarized in Table 8.2.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City shall evaluate the program goals and overall effectiveness of the Spill Prevention

and Response Program. Results of the program evaluation shall be summarized in the Annual Report.

**Table 8.2**
**Spill Prevention and Response – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Spill Prevention | Facility Inventory | Update as needed | 30 September 2021 | Engineering<br>Maintenance |
| | Facility Inspections | Annually | 30 September 2021 | |
| | Training | Annually | 30 September 2021 | |
| Spill Response | Petroleum Leaks and Spill Guideline | Update as needed | 30 September 2021 | Fire<br>EMA |
| | Non Hazardous Spill Response | Track | 30 September 2021 | |
| | Hazardous Spill Response | Track | 30 September 2021 | |
| | Spills Entering MS4 | Track | 30 September 2021 | |
| | Training | Annually | 30 September 2021 | |
| | Map of spill locations | Annually | 30 September 2021 | Engineering |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 9

## Pollution Prevention and Good Housekeeping

# 9. Pollution Prevention and Good Housekeeping

## 9.1. Introduction

Pollution prevention / good housekeeping for municipal operations is a control measure designed to emphasize the operation and maintenance of the MS4 and proper training of City employees. Performing activities in a careful and proper manner prevents and/or reduces the potential of polluting stormwater runoff. City operations may include the following:

- Park and open space;
- Fleet and building maintenance;
- New construction and land disturbances;
- Storm sewer system maintenance;
- Roads and highways;
- Municipal parking lots;
- Maintenance and storage yards;
- Waste transfer stations; and,
- Recycling centers.

The City's Pollution Prevention and Good Housekeeping Program includes the activities described in Part II.B.7 of the NPDES Permit.

## 9.2. Program Administration

Pollution prevention and good housekeeping basically involves all of the City's departments. Departments that are most directly involved include the following:

- Maintenance Department;
- Engineering Department;
- Fleet Management; and,
- Parks and Recreation.

## 9.3. Municipal Facility Inventory

The City provides a wide range of services to its citizens by various City Departments and facilities located throughout the City. The City maintains approximately 91 facilities that consist of parks, ball fields and building grounds

that occupies approximately 1,538 acres (2.40 square miles). Since an inventory of the City's facilities have been provided as part of the Pesticides, Herbicides and Fertilizers Program and the Industrial Stormwater Runoff Program, a facility inventory will not be duplicated in this section. The locations of City Parks are shown in Figure 10.1. Facility operations where maintenance activities are performed and/or chemicals are stored are summarized in Table 12.3 and shown in Figure 12.3.

## 9.4. Standard Operating Procedures

The City has developed SOPs for the various activities required for implementing the Pollution Prevention and Good Housekeeping Program. SOPs the City currently maintains include the following:

- Equipment washing;
- Storage and disposal of chemicals and waste materials; and,
- Vehicle fleets / equipment maintenance and repair.

The City may develop additional SOPs and/or update existing SOPs on an as needed basis. Existing SOPs and newly developed SOPs shall be included in Appendix I.

## 9.5. Municipal Facility Inspections

Most municipal properties consist of parks and athletic fields which are actively utilized by the public throughout the year. Maintenance and upkeep of these facilities are performed on a routine basis. Additional inspections of parks and athletic fields will not be performed.

As part of the City's Industrial Stormwater Runoff Program, the City has identified municipal facilities that are used for small equipment maintenance and chemical storage. Municipal facilities listed in Table 12.3 shall be inspected on an annual basis.

The Public Works Facility has an NPDES Permit that requires facility inspections be performed two times per week. Inspection reports for this facility shall be included in the MS4 Annual Report.

## 9.6. Roads

Motor vehicles can generate runoff pollutants through emissions, deposition of exhaust, discharges of fluids and solid particles while traveling and braking. Although the runoff constituents and concentration levels vary with highway type and location, the sources of roadway runoff pollutants typically fall into one of three basic categories:

1. Vehicle traffic;
2. Deicing activities; and,
3. Vegetation management.

Potential pollutant sources from roadways that may affect water quality include:

- Solids generated from pavement wear, tire wear, engine and brake wear can increase turbidity and transport other pollutants that adhere to the particle surfaces;
- Heavy metals from lubricating oil and grease, bearing wear, tire wear, vehicle wear, break lining wear and moving engine parts;
- Nutrients from roadside fertilizer application can expedite algae growth and lower dissolved oxygen levels in streams, rivers and lakes;
- Polycyclic aromatic hydrocarbons (PAHs) such as petroleum and ethylene glycol, resulting from spills and leaks of oil, gas, antifreeze, and hydraulic fluids; and,
- Litter and trash from vehicle traffic.

The City has implemented and maintained BMPs to provide a means of mitigating the negative impacts of various pollutants that can be carried off by rainfall to receiving waters. A description of the BMPs being implemented by the City for its road infrastructure is described in the following sections.

### 9.6.1. Street Sweeping

The Sanitation Department has eight street sweepers and one front end loader dedicated for street sweeping. Streets scheduled for resurfacing are swept and cleaned prior to resurfacing. Routine sweeping schedules have been developed to maximize the use of street sweepers and include the following:

- Daily Schedule;
- Tuesday and Friday Night Schedule;
- Wednesday Night Schedule;
- Thursday Night Schedule;
- Sweeping List #1 (optional);
- Sweeping List #2 (optional);
- Sweeping List #3 (optional);
- Sweeping List #4 (optional);
- Intersection Sweeping Schedule;
- City Parks and Community Centers Schedule; and,
- Bridges Schedule.

A table summarizing curb length of routine and optional sweeping routes is provided in Table 9.1.

**Table 9.1 Street Sweeping Curb Lengths**

| Sweeping List | Curb Length (mi) |
|---|---|
| **Weekly Routes** | |
| Tuesday and Friday Night Schedule | 24.2 |
| Wednesday Night Schedule | 12.8 |
| Thursday Night Schedule | 11.9 |
| Total | 48.9 |
| **Optional Routes** | |
| Sweeping List #1 (optional) | 58.7 |
| Sweeping List #2 (optional) | 89.7 |
| Sweeping List #3 (optional) | 65.7 |
| Sweeping List #4 (optional) | 78.3 |
| Total | 292.5 |

Sweeping activities are summarized in a daily report. A copy of the sweeping schedules and an example of a daily report is provided in Appendix I.

### 9.6.1. Litter Control

Roadside litter control BMPs implemented by the City to address health and aesthetic concerns also improve the quality of stormwater runoff by limiting trash in runoff conveyance systems. The Sanitation Department routinely collects and disposes of litter, trash and debris. The Sanitation Department maintains a daily record of litter collection activities that include areas worked, number of employees

used, number of bags used, and tonnage. Pictures of typical litter collection activities are provided in Figure 9.1.

**Figure 9.1 Litter Collection Examples**

### 9.6.2. Deicing Activities

Based upon the City's location, winter weather is infrequent. The City spreads sand on roads with snow or ice cover. After winter weather has subsided, the City removes the sand using a small front-end loader and a street sweeper. Salt is not used for any deicing activities.

## 9.7. Training

The City has implemented a pollution prevention and good housekeeping staff training program. The City sought to use widely accepted training materials that could be distributed to City Departments quickly and electronically. The City also wanted training materials which could be used every year specifically geared towards municipal employees working in environments that could potentially affect stormwater.

The City decided to purchase the "Storm Watch – Municipal Stormwater Pollution Prevention" training materials from Excal Visual. These materials include the following:

- Video presentation covering BMP practices for:
  - Good Housekeeping and Spill Prevention
  - Vehicle and Equipment Washing

  - Spill Reporting and Response
  - Street Maintenance
  - Outdoor Storage of Materials and Wastes
  - Landscaping and Lawn Care
- Trainer's Guide;
- BMP Guidebook;
- Acknowledgement of Training Signature Page; and,
- Trainee Quiz.

The City has the right to distribute the training by different methods:

- A Department has a Physical CD or USB Drive and conducts in-person training; or,
- A Department can access the training materials through the City's "CityNet" online sharing center.

## 9.8. Flood Management Projects

The National Flood Insurance Program (NFIP) provides federally backed flood insurance that encourages communities to enact and enforce floodplain regulations. To be covered by a flood insurance policy, a property must be in a community that participates in the NFIP. The City of Montgomery has been a participating community since 1982.

### 9.8.1. Flood Control Projects

The MS4 NPDES permit requires the City to evaluate flood management projects for incorporation of additional water quality protection devices and practices to help improve water quality. If flood management projects are proposed within the City, the City will evaluate the projects for the potential incorporation of water quality features.

### 9.8.2. Flood Control Structures

The City has five (5) flood control structures located within the City. Each structure is inspected on an annual basis. Table 9.2 provides a summary of the location and structure type.

Some of these flood control structures already provide a benefit to the quality of stormwater runoff. For example, a large wetland area is located upstream of

Newtown Dam located on Ferguson Street. This wetland area helps to attenuate peak discharges from storm events as well as improve water quality.

**Table 9.2 Flood Control Structures**

| Location | Structure Type |
|---|---|
| Northern Boulevard | Flood Flaps |
| Ripley Street | Flood Flaps |
| Dozier Marina Pond | Flood Flaps |
| Cypress Creek Outfall | Flood Flaps |
| Ferguson Street | Newtown Dam |

## 9.9. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Pollution Prevention and Good Housekeeping Program. Program goals are summarized in Table 9.3.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of the Pollution Prevention and Good Housekeeping Program. Results of the program evaluation shall be summarized in the Annual Report.

## Table 9.3
## Pollution Prevention and Good Housekeeping – Program Goals

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Municipal Facilities | Inventory | Update as needed | 30 September 2021 | Engineering |
| SOPs | Herbicides and Insecticides | Update as needed | 30 September 2021 | Maintenance |
| | Vehicle fleets / equipment maintenance and repair | Update as needed | 30 September 2021 | Fleet Management |
| | Material storage facilities | Update as needed | 30 September 2021 | |
| | Equipment washing | Update as needed | 30 September 2021 | |
| Facility Inspections | Municipal Facilities | Annually | 30 September 2021 | Engineering |
| Roads | Litter Control | Track | 30 September 2021 | Sanitation |
| | Street Sweeping | Track | 30 September 2021 | |
| | Deicing Events | Track | 30 September 2021 | Maintenance |
| Flood Control Structures | Inventory | Update as needed | 30 September 2021 | Engineering Maintenance |
| | Inspection | Annually | 30 September 2021 | |
| | Evaluate flood control projects | As needed | 30 September 2021 | |
| Training | Training Modules | Annually | 30 September 2021 | All Departments |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 10

## Pesticides, Herbicides and Fertilizers

# 10. Pesticides, Herbicides and Fertilizers

## 10.1. Introduction

Pesticides, herbicides, and fertilizers (PHF), when used properly, are helpful tools in maintaining grassed and landscaped areas. However, excess use can threaten natural ecosystems, particularly through runoff to streams and rivers or by infiltration to groundwater. Because of this concern for environmental health, the NPDES Permit requires the City to evaluate the use of PHF to seek opportunities to reduce the use of these materials.

When all the land occupied by parks, rights-of-way (ROW), easements, open space and City facilities is added together, the City may own or control a significant portion of the land within a watershed. Maintenance of these areas frequently includes mowing, fertilization, PHF application, and supplemental irrigation. Effective management and landscaping practices can significantly reduce the pollutants discharged in stormwater runoff.

The City's PHF Program includes the activities described in Part II.B.8 of the NPDES Permit.

## 10.2. Program Administration

The City's Parks and Recreation Department and Maintenance Department are the primary users of PHF. The Street Maintenance Department performs insecticide and occasionally herbicide treatment on City ROW.

## 10.3. Program Components

The City is continuously implementing a very effective PHF Program to prevent potential pollutants from entering the storm sewer system.

### 10.3.1. PHF General NPDES Permit

In May 2012, the City was granted authorization under ADEM's General NPDES Permit No. ALG870014 for discharges associated with the application of pesticides. Since the City sprays over 6,400 acres for mosquito control, the City was required to obtain coverage under this permit. As required by the permit, the City has developed and implemented a Pesticide Discharge Management Plan.

### 10.3.2. PHF Standard Operating Procedures

Application, storage, and disposal of PHF shall be performed in accordance with Federal and State regulations and in accordance with the manufacturer's recommendations. The City has developed SOPs for mixing, application, clean up, storage, training and record keeping. SOPs have also been developed for spraying schedules and application rates. Copies of SOPs are provided in Appendix J.

### 10.3.3. Facility Inventory

The City shall evaluate land under the control of the City to determine where pesticides, herbicides and/or fertilizers are being used. Areas of interest within the MS4 Area may include but are not limited the following:

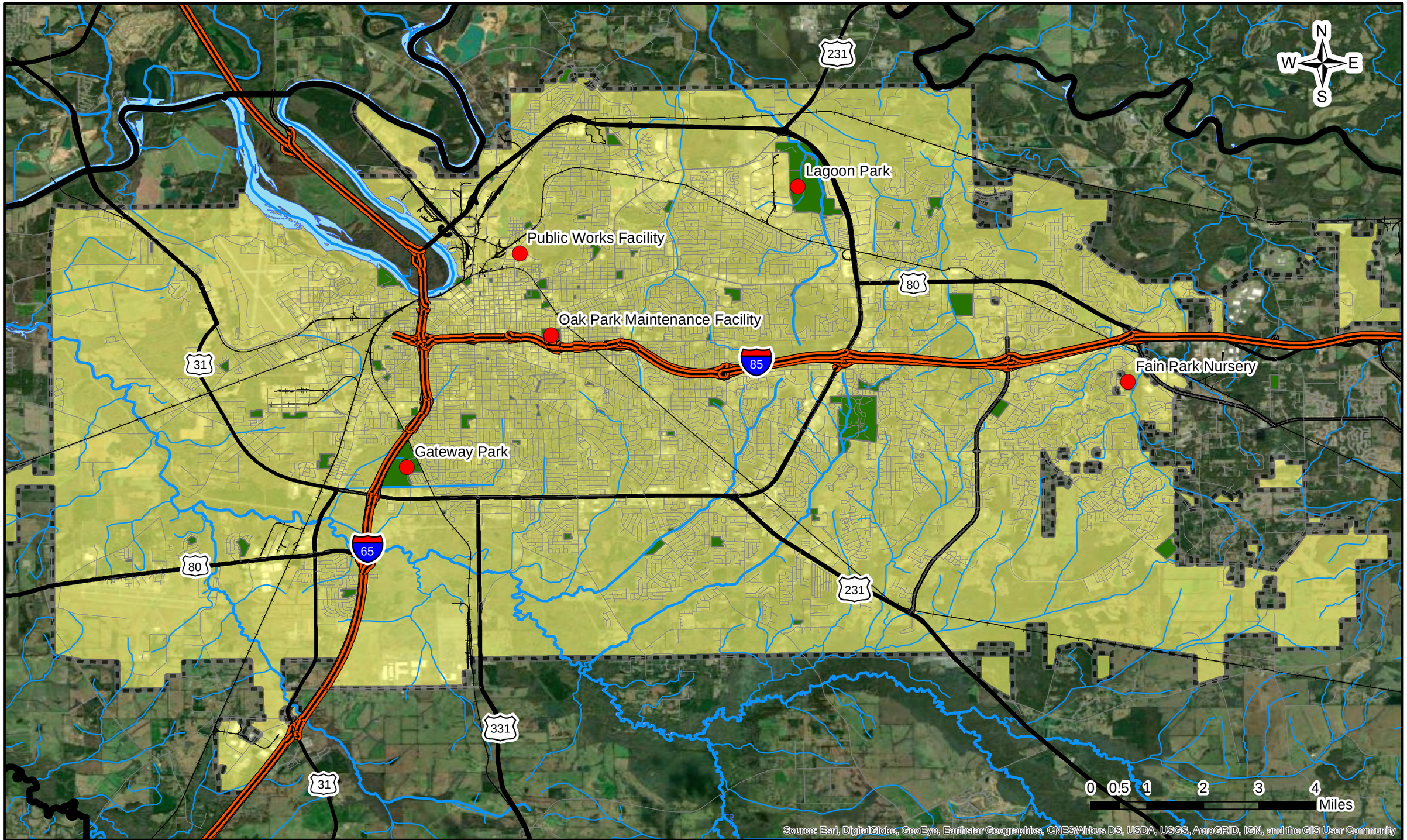
- Public parks;
- Sports complexes;
- Green space around City facilities; and,
- City rights-of-way.

The City is continuously implementing a very effective PHF Program to prevent potential pollutants from entering the storm sewer system. The City maintains approximately 91 facilities that consist of parks, ball fields and building grounds and occupies approximately 1,538 acres (2.40 square miles). The locations of City Parks are shown in Figure 10.1.

### 10.3.4. Certification and Licensing

Commercial and non-commercial application of pesticides is regulated in the State of Alabama by the Department of Agriculture and Industries (DAI). To maintain a pest control license, applicators are required to obtain routine training that covers the following topics:

- Pests;
- Pests control and pesticides;
- Labels and labeling;
- The environment;
- Applicator safety;
- Laws and regulations;

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City of Montgomery

City Parks

PHF Storage Facility

**CITY OF MONTGOMERY**

City Parks

Figure 10-1

October 2020

- Pesticide storage and disposal;
- Record keeping;
- Application equipment and calibration; and,
- Weed control.

City staff and contractors involved with the application, storage and/or disposal of PHF on City areas shall maintain current certification and training as required by DAI. The City currently has eight staff that maintains an applicators certification between the Maintenance and Parks and Recreation Departments. Their applicators certification documentation is provided in Appendix J.

### 10.3.5. PHF Storage Facilities

Due to the number and locations of facilities maintained by the City, the City has contracted with Agriliance-AFC, LLC to supply PHF and other chemicals on an as needed basis. This allows the City to optimize the use of PHF as well as minimize the quantity of chemicals stored. Chemical storage facilities are summarized in Table 10.1 and shown in Figure 10.1.

**Table 10.1 PHF Storage Facilities**

| Facility | Address |
|---|---|
| Fain Park Nursery | 8700 Minnie Brown Road |
| Oak Park Maintenance Facility | 1424 Lake Street |
| Public Works Facility | Ripley Street |
| Lagoon Park | 2855 Lagoon Park Drive |
| Gateway Park | Davenport / Bowman |

### 10.3.6. Chemical Inventory

The City may use a variety of PHF chemicals on road rights-of-way and City Areas. An inventory of PHF being stored at each City facility is provided in Appendix J.

Safety Data Sheets (SDS) for PHF used by City staff shall be maintained at each individual storage location. The SDS will provide information about the chemical that may include but not limited to the following:

- Chemical constituents;
- Product use;
- Dilution requirements;
- Mixing requirements;

- Storage instructions; and,
- Health and safety precautions.

## 10.4. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the PHF Program. Program goals are summarized in Table 10.2.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of the PHF Program. Results of the program evaluation shall be summarized in the Annual Report.

**Table 10.2**
**Pesticides, Herbicides, and Fertilizers – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Facility Inventory | Inventory of areas where PHF is applied | Update as needed | 30 September 2021 | Maintenance<br>Parks and Recreation |
| | PHF storage facility inventory | Update as needed | 30 September 2021 | |
| | Facility Map | Annually | 30 September 2021 | Engineering |
| Training | Employee Training | Update as needed | 30 September 2021 | Maintenance<br>Parks and Recreation |
| Chemical Inventory | PHF inventory at each location | Track | 30 September 2021 | Maintenance<br>Parks and Recreation |
| | SDS at each location | Update as needed | 30 September 2021 | |
| SOPs | Application | Update as needed | 30 September 2021 | Maintenance<br>Parks and Recreation |
| | Storage | Update as needed | 30 September 2021 | |
| | Disposal | Update as needed | 30 September 2021 | |
| | Equipment maintenance | Update as needed | 30 September 2021 | |
| Chemical Use | Summary by Chemical | Track | 30 September 2021 | Maintenance<br>Parks and Recreation |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 11

## Oils, Toxics and Household Hazardous Wastes

# 11. Oils, Toxics and Household Hazardous Waste

## 11.1. Introduction

The MS4 NPDES permit requires the City to develop a program that prohibits to the MEP the discharge or disposal of used motor vehicle fluids and household hazardous waste into the MS4. The sources of potential discharges to be addressed by this program element are the public and the City's fleet maintenance facilities.

The City's Oils, Toxics and Household Hazardous Waste Program includes the activities described in Part II.B.9 of the NPDES Permit.

## 11.2. Program Administration

The Engineering Department shall be responsible for maintaining the website to include materials that help educate the public. Fleet Maintenance shall be responsible for inspecting maintenance facilities and training facility personnel.

## 11.3. Program Components

Discharge of used motor vehicle fluids and household hazardous waste can be a significant contributor of pollutants to stormwater. The City has implemented a spill prevention and response program to actively prevent and/or control these types of discharges at City facilities.

### 11.3.1. Public Education

To help minimize used motor vehicle fluids and household hazardous waste from being discharged into the MS4, the City shall provide materials and information to help educated the public on the proper methods of disposal. The City's website shall be the primary mechanism to distribute materials and information to the public. This allows the City to reach a larger audience more cost effectively. Information that may be provided on the website includes but is not limited to the following:

- Locations where used oil can be recycled;
- Brochures describing the impacts of these types of discharges; and,
- If these types of discharges are observed, how to report it to the City.

Information and materials available on the City's website shall be provided in the City's annual report.

### 11.3.2. City Facilities

As part of the Spill Prevention and Response Program, the City maintains an inventory of City facilities that require a SPCC Plan. Facility operations and maintenance are performed in accordance with the SPCC plans.

### 11.3.3. Employee Training

City staff associated with vehicle and equipment maintenance shall receive annual training on the proper management and disposal of used motor vehicle fluids.

## 11.4. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing an Oils, Toxics and Household Hazardous Waste Program. Program goals are summarized in Table 11.1.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of Oils, Toxics and Household Hazardous Waste Program. Results of the program evaluation shall be summarized in the Annual Report.

**Table 11.1**
**Oils, Toxics and Household Hazardous Waste – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Public Education | Website – locations for used oil recycling | Update as needed | 30 September 2021 | Engineering |
| | Website – Educational materials | Update as needed | 30 September 2021 | |
| | Report and Issue - 311 | Continuous | 30 September 2021 | Public Works |
| City Facilities | Facility inventory | Annually | 30 September 2021 | Engineering |
| Training | Training Modules | Annually | 30 September 2021 | Fleet Maintenance |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 12

## Industrial Storm Water Runoff

# 12. Industrial Storm Water Runoff

## 12.1. Introduction

The City has developed an Industrial Stormwater Runoff Program to monitor and control pollutants in stormwater discharges to the MS4 from industrial facilities. Due to the physical size and population of the City, there is a variety of industrial, institutional, and commercial support facilities located throughout the City. A summary of the area occupied by industrial, institutional, and commercial uses is provided in Table 12.1.

**Table 12.1 Industrial / Commercial Land Use**

| Land Use | MS4 Area | |
|---|---|---|
| | Area ($mi^2$) | Area (%) |
| Commercial | 12.41 | 7.7 |
| Industrial | 30.96 | 19.1 |
| Institutional | 10.73 | 6.6 |
| Total | 54.1 | 33.4 |

This Industrial Stormwater Runoff Program has been developed using the following guidance materials:

- Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, EPA 833-B-09-002, February 2009;
- Stormwater Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92-006, September 1992; and ,
- Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity, EPA 505/8-91-002, April 1991.

These documents are incorporated into the Industrial Stormwater Runoff Program by reference and are available in the office of the City Engineer.

The City's Industrial Stormwater Runoff Program includes the activities described in Part II.B.10 of the NPDES Permit.

## 12.2. Program Administration

The Engineering Department shall be responsible for implementing the Industrial Stormwater Runoff Program.

## 12.3. Standard Operating Procedures

The City has developed various SOPs for the Industrial Stormwater Runoff Program that include the following:

- Facility Inspections; and,
- Discharge Monitoring Report Review.

Copies of SOPs are provided in Appendix L. As additional SOPs are developed in support of this program, they shall be incorporated into Appendix L.

## 12.4. Facility Inventory

The City shall maintain an inventory of municipal, industrial, and commercial facilities that have a potential to discharge pollutants into the City's MS4. The inventory shall include the following types of facilities:

- Facilities that have a National Pollutant Discharge Elimination Systems (NPDES) permit as required by 40 CFR 122.26(b)(14);
- Facilities that are subject to Emergency Planning and Community Right to Know Act (EPCRA) Title III, Section 313;
- Municipal Facilities; and,
- Commercial facilities.

### 12.4.1. Industrial Facilities

The City has developed an inventory of industrial facilities that have either obtained a General or Individual NPDES permit for industrial activities. As of 30 September 2019, the City has 111 NPDES permitted facilities as shown in Figure 12.1. The types of facilities that have a NPDES permit and the number of facilities located within the City are summarized in Table 12.2. A detailed list of NPDES permitted facilities is provided in Appendix L.

The inventory of NPDES facilities shall be updated on an annual basis. Specific information regarding each facility may either be obtained from ADEM, EPA's ECHO Website, and/or the facility.

**Table 12.2 NPDES Permitted Facilities**

| Facility Type | No. |
|---|---|
| Asphalt | 3 |
| Concrete | 4 |
| Food | 5 |
| Industrial Minor | 6 |
| Landfill | 4 |
| Lumber & Wood | 4 |
| Metals | 15 |
| Mining | 2 |
| Municipal / Major | 1 |
| Pesticides | 2 |
| Petroleum | 16 |
| Plastic & Rubber | 5 |
| Salvage/Recycling | 13 |
| Small Mining | 3 |
| Stone, Glass, Clay | 1 |
| Textile | 1 |
| Transportation | 26 |
| Total | 111 |

### 12.4.1. Toxic Release Inventory (TRI) Facilities

Facilities regulated under the Emergency Planning and Community Right to Know Act (EPCRA) Title III, Section 3 (TRI Facilities) that manufacture, process or otherwise use listed chemicals are required to submit detailed inventory reports by 1 July for each preceding year.. These facilities must report both routine and accidental chemical releases, off-site transfers, and other waste management activities to both the EPA and the Alabama Emergency Response Commission (AERC).

Currently, the City has 21 TRI Facilities that provide this information. Of the 21 TRI Facilities, 17 have a NPDES permit. One facility is in the Maxwell Air Force Base MS4 area. Three (3) TRI Facilities do not have a NPDES permit. An updated inventory of TRI Facilities is provided in Figure 12.2 and a detailed list of the facilities are provided in Appendix L.

### 12.4.2. Municipal Facilities

The City provides a wide range of services to its citizens by various City Departments and facilities located throughout the City. The City has developed an inventory of facilities used for PHF storage, municipal shops, and equipment yards where operations may have a potential to contribute pollutants to stormwater runoff. The municipal facility inventory is summarized in Table 12.3 and shown in Figure 12.3.

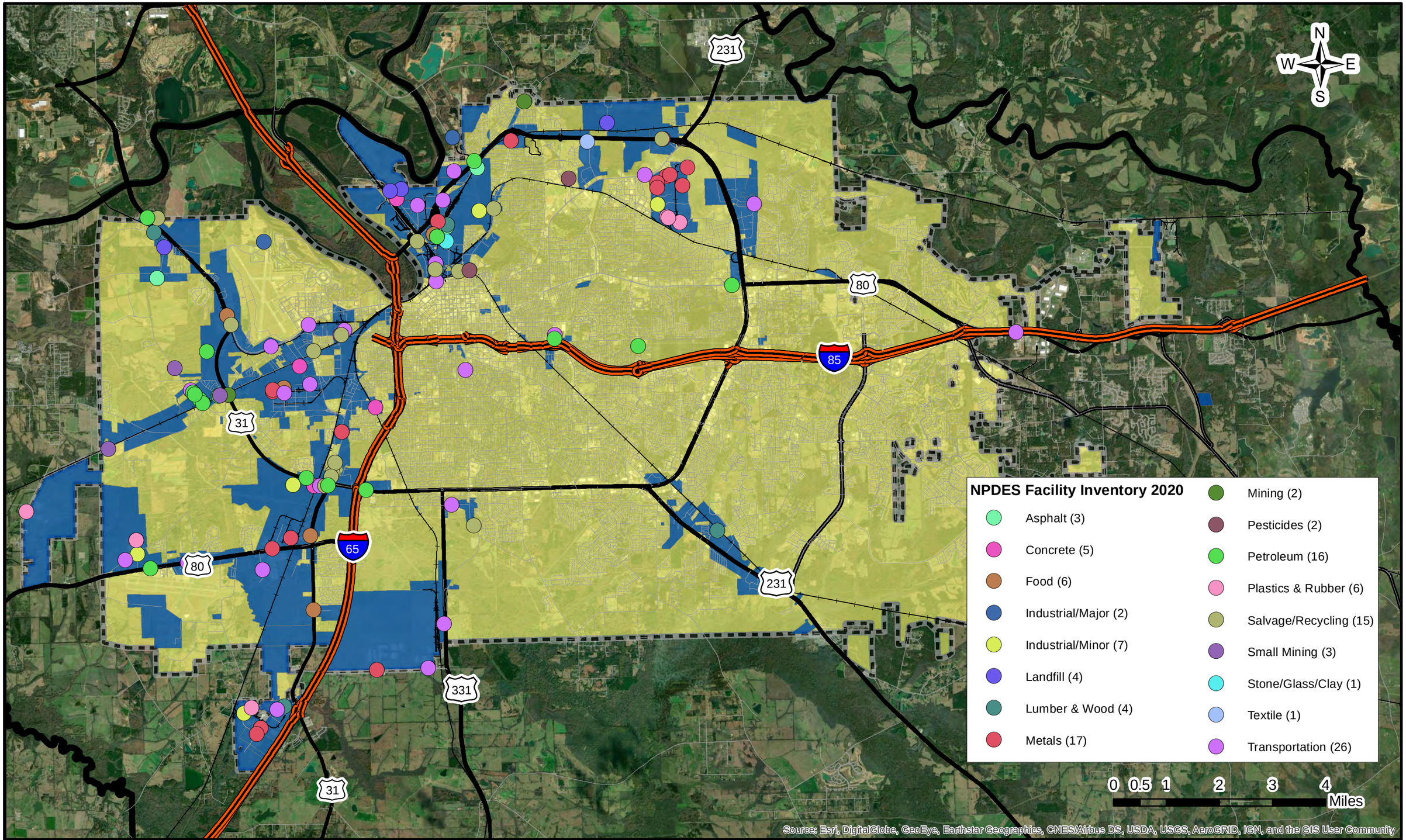
A copy of the Municipal Facility Inspection Form is provided in Appendix L.

**Table 12.3 Municipal Facilities**

| Facility Name | Department |
|---|---|
| Thompson Park | Parks and Recreation |
| AUM Baseball Park | |
| Shakespeare Park | |
| Gateway Park | |
| Lagoon Park | |
| Oak Park | |
| Fain Park | |
| Public Works Facility | Maintenance |

### 12.4.3. Commercial Facilities

There are a variety of commercial facilities located within the City. The City will maintain an inventory of complaints regarding commercial facilities with a potential to contribute pollutants in stormwater runoff. If a significant number of complaints are received for either an individual commercial facility or a specific type of commercial facility, the City shall evaluate the complaints and determine if an individual commercial facility or a specific type of commercial facility should be designated as a high-risk commercial facility. Currently, the City has not identified or designated any high-risk commercial facilities.




HYDRO ENGINEERING SOLUTIONS

City Montgomery

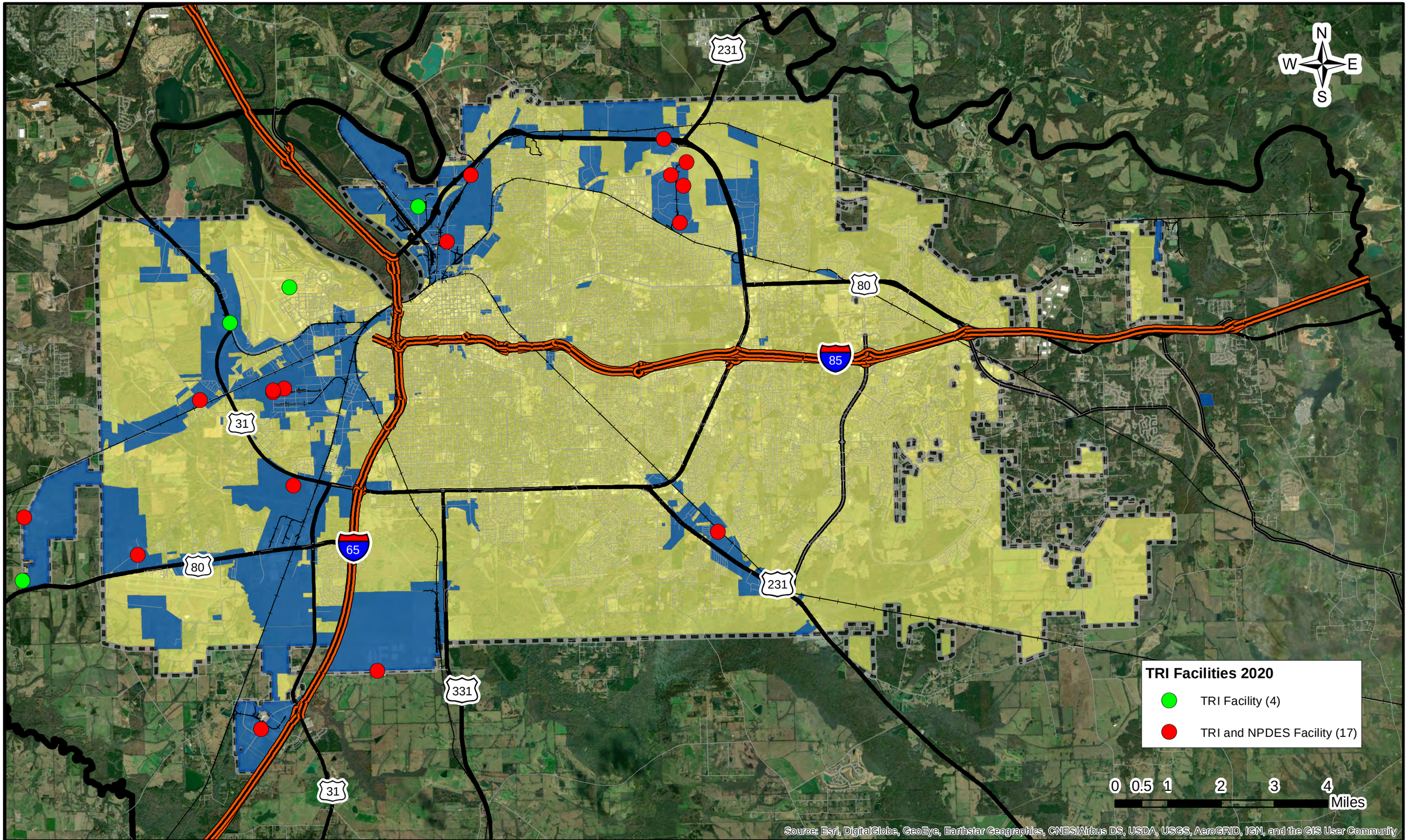
Industrial Zoning

**CITY OF MONTGOMERY**

NPDES Facility Inventory

Figure 12-1

October 2020




HYDRO ENGINEERING SOLUTIONS

City Montgomery

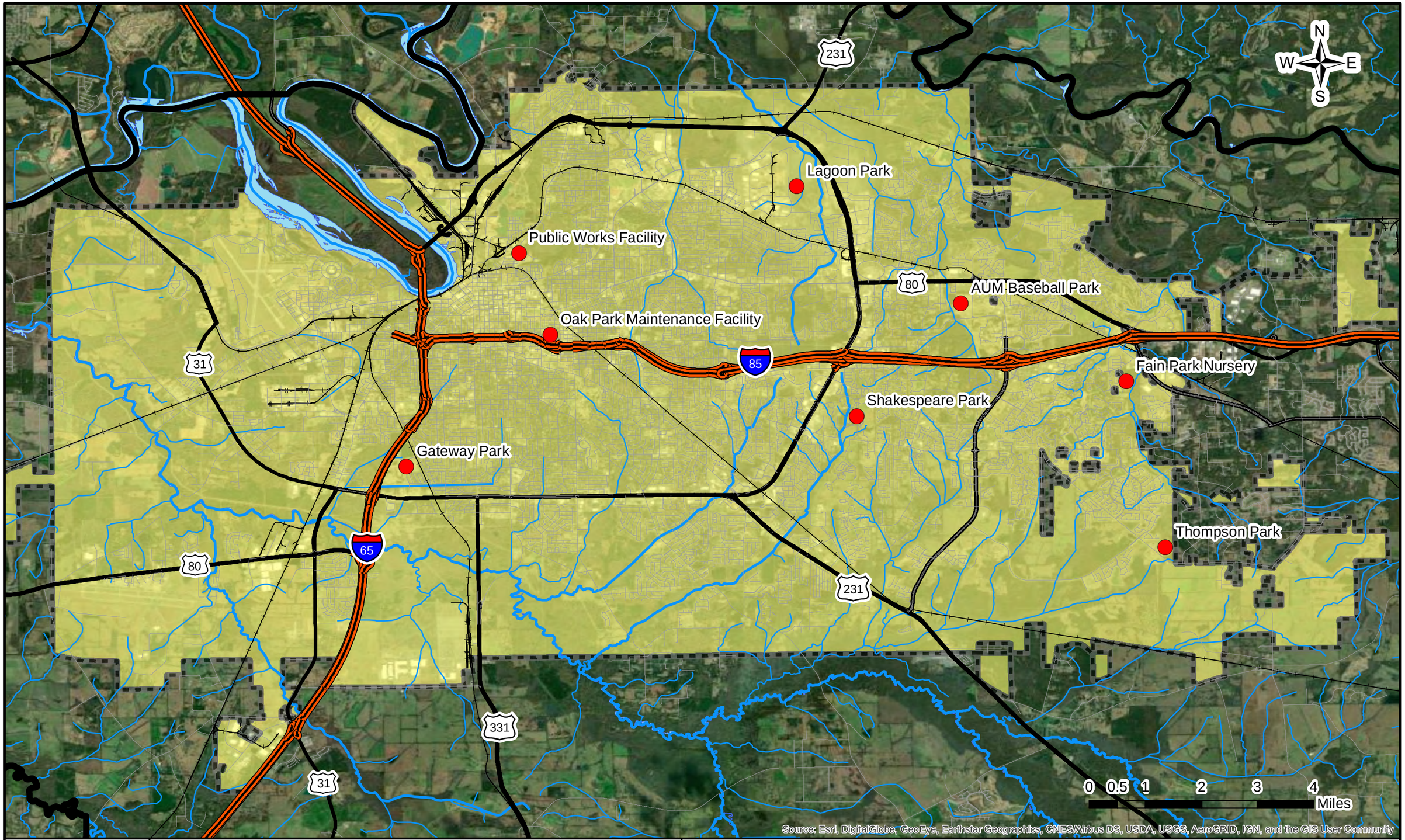
Industrial Zoning

**CITY OF MONTGOMERY**

TRI Facility Inventory

Figure 12-2

October 2020




HYDRO ENGINEERING SOLUTIONS

City of Montgomery

Municipal Facilities

**CITY OF MONTGOMERY**

Municipal Facility Inventory

Figure 12-3

September 2019

## 12.5. Facility Inspections

Part II.B.10.a. of the NPDES Permit requires the City to inspect specific industrial facilities that do not have a NPDES permit issued by ADEM. Inspections associated with the Industrial Stormwater Runoff Program are summarized in the following sections:

### 12.5.1. NPDES Facilities

For NPDES permitted facilities, Part II.B.10.a.4. of NPDES Permit allows the City to use data collected by a NPDES permitted facility to satisfy the monitoring requirements of an NPDES or State discharge permit.

The City shall review the information available on ADEM's e-file and/or EPA's Enforcement and Compliance History Online to determine if any NPDES permitted facility is or has been non-compliant with its NPDES Permit. The City may elect to conduct an inspection of a NPDES facility that has exceeded its discharge limitations and discharges into the City's MS4. Site inspections may be limited to the City's MS4 adjacent to the NPDES facility. Site inspections of any non-compliant facility shall be documented on a Facility Inspections Form. If a site inspection indicates that the NPDES facility is having an adverse impact to the City's MS4, the City shall notify ADEM and rely upon ADEM to enforce the conditions of the facility's NPDES permit. A copy of the form is included in Appendix L.

### 12.5.2. TRI Facilities

The Engineering Department shall annually inspect all TRI facilities that do not have an NPDES Permit or are regulated by the PSC. These inspections shall focus on the discharge point(s) from the TRI facility into the City's MS4. If the City determines that a TRI facility has no potential to contribute pollutants in stormwater runoff, the facility shall be identified as a "No Exposure Facility". After a facility is designated as a "No Exposure Facility", no additional inspections will be performed.

### 12.5.3. Municipal Facilities

The Public Works Facility has an NPDES Permit that requires facility inspections be performed two times per week. Inspection reports for this facility shall be included in the MS4 Annual Report.

The remaining municipal facilities listed in Table 12.3 are small facilities used for small equipment maintenance and chemical storage. These facilities shall be inspected on an annual basis. A copy of the form is included in Appendix L.

### 12.5.4. Commercial Facilities

Due to the variety of commercial facilities located throughout the City, inspections of commercial facilities shall be complaint driven. If the City receives a complaint that a non-stormwater discharge is occurring from a commercial facility, the City shall conduct an inspection to investigate the non-stormwater discharge. Depending upon the findings of the City's inspection, the City may identify an inspection frequency for follow up inspections at the facility.

## 12.6. Staff Training

The City may outsource facility inspections to a consultant. If the facility inspections are outsourced, the consultant selected shall have adequate training and experience to perform the facility inspections. If the City elects to utilize internal staff, staff selected to perform site inspections shall receive training and/or instruction on the following topics:

- Federal and State stormwater regulations;
- Industrial stormwater permit requirements;
- ADEM general NPDES permits for industrial activity;
- Stormwater Pollution Prevention Plan requirements;
- Significant materials;
- BMPs ;
- Non stormwater discharges and evaluations;
- Site inspection and documentation protocols; and,
- Enforcement procedures.

Staff shall receive refresher training and/or instruction every other year. Any new staff incorporated into the program will receive the initial training described above.

## 12.7. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Industrial Stormwater Runoff Program. Program goals are summarized in Table 12.4.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of the Industrial Stormwater Runoff Program. Results of the program evaluation shall be summarized in the Annual Report.

## Table 12.4
## Industrial Stormwater Runoff – Program Goals

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Legal Authority | Illicit Discharge Detection and Elimination Ordinance | Update as needed | 30 September 2021 | Engineering |
| SOPs | Facility Inspections | Update as needed | 30 September 2021 | Engineering |
| Facility Inventory | NPDES Permitted Facilities | Annually | 30 September 2021 | Engineering |
| | TRI Facilities | Annually | 30 September 2021 | |
| | Municipal Facilities | Annually | 30 September 2021 | |
| Facility Inspections | Facility inspection form | Update as needed | 30 September 2021 | Engineering |
| | NPDES Permitted Facilities | As needed | 30 September 2021 | |
| | TRI Facilities without a NPDES Permit | Annually | 30 September 2021 | Engineering |
| | Municipal Facilities | Annually | 30 September 2021 | Engineering |
| | Commercial Facilities | Complaint Driven | 30 September 2021 | |
| Training | Training | As needed | 30 September 2021 | Engineering |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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# SECTION 13

Monitoring

# 13. Monitoring

## 13.1. Introduction

Part III of the NPDES Permit requires the City to implement a monitoring program that provides data to assess the effectiveness of BMPs implemented under the SWMP Plan. Monitoring activities include the use of a multiparameter water quality sonde and grab samples for selected parameters.

## 13.2. Program Administration

The Engineering Department shall be responsible for the monitoring program.

## 13.3. Monitoring Locations

Part III.A of the NPDES Permit requires the City to establish a minimum of one (1) instream monitoring station in each of the watersheds listed in Table 13.1.

**Table 13.1 Monitoring Location**

| Watershed | Latitude | Longitude |
|---|---|---|
| Three-Mile Branch | 32.410847° | -86.255033° |
| Jenkins Creek | 32.364274° | -86.137537° |
| Genetta Ditch | 32.332268° | -86.339899° |

## 13.4. Continuous Monitoring

The City's monitoring stations have a multiparameter water quality monitoring sonde capable of recording measurements at a minimum time interval of hourly and capable of measuring the parameters listed in Table 13.2.

To ensure optimum operation of the multiparameter water quality sonde, the equipment may be checked and cleaned on a bi-weekly basis. Calibration of each sonde may be performed every 6 to 12 weeks as needed. Examples of cleaning and calibration forms are provided in Appendix M.

**Table 13.2 Continuous Monitoring Parameters**

| Parameters |
|---|
| Temperature |
| Turbidity |
| Conductivity |
| Dissolved Oxygen (DO) |
| Level |

If the City is unable to collect water quality data at a monitoring station location due to equipment malfunction, maintenance, and/or damage, the City shall include a description of why water quality data could not be collected and available documentation in the annual report.

## 13.5. Grab Sampling

The City shall collect a grab sample twice a year at each monitoring location listed in Table 13.1. Criteria for collecting the grab samples include:

- One grab sample shall be collected at each monitoring location between January and June;
- One grab sample shall be collected at each monitoring location between July and December;
- Grab samples shall be analyzed for the parameters presented in Table 13.3. Analysis and collection of grab samples shall be done in accordance with the methods specified at 40 CFR Part 136;
- If the City is unable to collect grab samples due to adverse conditions, the City shall provide a description of why samples could not be collected, including available documentation of the event, in the annual report. 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.).

**Table 13.3 Grab Sample Parameters**

| Parameters |
|---|
| Ammonia Nitrogen ($NH_3$-N) (mg/l) |
| Biochemical Oxygen Demand (BOD) (mg/l) |
| Carbonaceous Biochemical Oxygen Demand (CBOD) (mg/l) |
| Chemical Oxygen Demand (COD) (mg/l) |
| E.Coli |
| Fecal Coliform |
| Hardness as $CaCO_3$ (mg/l) |
| Nitrate plus Nitrite Nitrogen ($NO_3$+$NO_2$-N) (mg/l) |
| Oil and Grease (mg/l) |
| pH |
| Total Dissolved Solids (TDS) (mg/l) |
| Total Kjeldahl Nitrogen (TKN) (mg/l) |
| Total Nitrogen (TN) (mg/l) |
| Total Phosphorus (mg/l) |
| Total Suspended Solids (TSS) (mg/l) |

## 13.6. Sample Handling

To minimize the chance of sample contamination and unreliable analytical results, special measures must be taken during the collection, treatment, and handling of samples prior to analysis. For example, samples must be collected properly, stored in the appropriate containers, and preserved immediately. Samples must be analyzed within established holding times to ensure reliability of the results. Chain-of-custody procedures must be followed for sample handling and transportation to the laboratory. Each of these measures is discussed in more detail below.

### 13.6.1. Sample Collection Protocols

Water quality sampling shall employ "clean" sampling techniques to minimize potential sources of sample contamination – particularly from trace pollutants. Experience has shown that when clean sampling techniques are used, detected concentrations of constituents tend to be lower.

Clean sample collection techniques that should be followed during the collection of water samples are described below. Care must be taken during sampling to minimize exposure of the samples to human, atmospheric, and other potential

sources of contamination. Care must also be taken to avoid contamination whenever handling containers and lids. To reduce potential contamination, sampling personnel must adhere to the following rules while collecting water samples:

- Do not eat, drink, or smoke during sample collection;
- Never sample near a running vehicle;
- Do not park vehicles in immediate sample collection area (even non-running vehicles);
- Always wear clean, powder-free nitrile gloves when handling sample containers and lids;
- Never touch the inside surface of a sample container or lid, even with gloved hands;
- Never allow the inner surface of a sample container or lid to be contacted by any material other than the sample water;
- Do not overfill sample containers (preservative may be lost);
- Never allow any object or material to fall into or contact the collected sample water;
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample containers; and
- Replace and tighten sample container lids immediately after sample collection.

Sampling sites should be approached from downstream whenever possible to minimize any streambed disturbance that could influence water quality. Be careful that the flow is not concentrated to the point the channel starts to erode and increases the amount of sediment in the water. Samples shall be collected while facing upstream. When filling a sample bottle, lower the bottle slowly into the water to avoid hitting the streambed, disturbing the bottom, and stirring up sediment.

### 13.6.2. Manual Grab Sample Technique

A manual grab sample will define water quality at a distinct point in time. These samples are easily collected and are favored when the anticipated water quality of

the discharge is homogeneous, or unchanging, in nature. A manual grab sample is an individual sample of at least 100 milliliters usually collected by direct submersion of each individual sample bottle into the water to be sampled. To collect samples, the water depth will need to be at least 0.5 inch. Filling a sample bottle is difficult when the water is shallow and the bottles cannot be completely submerged. Thus, an intermediate container should be used. For example, one clean, unpreserved sample bottle can be designated as the intermediate container and used to collect multiple grab samples to fill the remaining sample bottles. Fill the bottles as full as possible without overfilling.

### 13.6.3. Sample Preservation

Chemical preservatives are added to the samples for certain analyses to prolong the stability of the parameters during transport and storage. **Table** 13-4 lists the required sample preservatives for the analytical parameters. If manual grab sampling procedures are used (i.e., monitoring personnel directly fill the containers required for each analysis), the monitoring personnel should add the appropriate preservative to each sample container immediately. All samples shall be iced immediately after collection.

### 13.6.4. Holding Times

The holding time starts when sample collection is complete and is counted until extraction/preparation or analysis of the sample at the laboratory. If a sample is not analyzed within the designated holding time, the analytical results may be suspect. Thus, it is important that the monitoring personnel meet all specified holding times and the laboratory make every effort to prepare and analyze the samples as soon as possible after they are received. Prompt analysis also allows the laboratory time to review the data and if analytical problems are found, re-analyze the affected samples.

Some holding times are short and will require the laboratory to analyze the sample promptly after receipt. For example, E. coli analyses must be performed within 8 hours after sample collection. Holding times may be a factor affecting allowable sampling times if the laboratory has not agreed to work evenings or weekends. To minimize the risk of exceeding the holding times, stormwater samples must be transferred to the analytical laboratory as soon as possible after sampling is complete. Moreover, the laboratory should be notified before the sampling begins so that it can prepare to analyze the samples immediately upon receipt.

The shortest holding time for this monitoring program is 8 hours from sample collection for E. coli. All samples will have to be to the laboratory within 8 hours of collection.

**Table 13-4 Sample Preservation and Holding Times**

| Parameter | Bottle Type[1] | Preservative | Holding Time |
|---|---|---|---|
| Ammonia Nitrogen | P, FP | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| Biochemical Oxygen Demand | P, FP, G | Cool to 6°C | 48 hours |
| Carbonaceous Biochemical Oxygen Demand | P, FP, G | Cool to 6°C | 48 hours |
| Chemical Oxygen Demand | P, FP, G | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| E.Coli | PA, G | 0.0008% $Na_2S_2O_3$ Cool to 10°C | 8 hours |
| Fecal Coliform | PA, G | 0.0008% $Na_2S_2O_3$ Cool to 10°C | 8 hours |
| Hardness as CaCO3 | P, FP, G | $H_2SO_4$ or $HNO_3$ to pH<2 | 6 months |
| Nitrate plus Nitrite Nitrogen | P, FP, G | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| Oil and Grease | G | Cool to 6°C $H_2SO_4$ or HCL to pH<2 | 28 days |
| pH / ORP | P, FP, G | None | Analyze Immediately |
| Total Dissolved Solids | P, FP, G | Cool to 6°C | 7 days |
| Total Kjeldahl Nitrogen | P, FP, G | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| Total Nitrogen | P, FP | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| Total Phosphorus | P, FP, G | Cool to 6°C $H_2SO_4$ to pH<2 | 28 days |
| Total Suspended Solids | P, FP, G | Cool to 6°C | 7 days |

[1] "FP" is for fluoropolymer (polytetrafluoroethylene); "PA" is any plastic that is made of sterilizable material; "P" is for polyethylene; and "G" is for Glass.

### 13.6.5. Chain of Custody

Chain-of-custody (COC) forms are provided by the laboratory. They are to be filled out by sampling personnel for all samples submitted to the analytical laboratory. The purpose of COC forms is to keep a record of the sample submittal information

and to document the transfer of sample custody. Sample date, sample location, and analyses requested are noted on the COC form. Any special instructions for the laboratory should also be noted on the COC form such as specifications of quality control requirements (e.g., duplicate samples). The COC form must be signed by both the person relinquishing the samples and the person receiving the samples every time the samples change hands, thus documenting the chain of custody. No sample shall ever leave the possession of the person collecting the sample until it is relinquished to the laboratory.

Custody seals are used to detect unauthorized tampering with the samples. The seals are printed on strips of adhesive-backed paper. They are affixed over the lid of a filled sample bottle in such a way that the sample bottle cannot be opened without breaking the seal. Custody seals must be completed and affixed to all sample bottles before the samples leave the custody of the monitoring personnel. Custody seals may also be used on each cooler.

### 13.6.6. Sample Analysis

Analysis of samples taken for the purpose of monitoring shall be conducted according to test procedures approved by EPA under 40 CFR Part 136.

## 13.7. Data Evaluation

The City shall review water quality data collected over the previous permit year and present a summary of the data in the Annual Report. Graphical representations of the data shall be included in the Annual Report.

## 13.8. Program Goals and Evaluation

The City has developed realistic, achievable, and measurable goals and performance milestones to measure the progress in implementing the Monitoring Program. Program goals are summarized in Table 13.5.

The most basic measure to evaluate the program effectiveness is to evaluate whether the program goals are being met. At the end of the permit year, the City will evaluate the program goals and overall effectiveness of the monitoring activities. Results of the program evaluation will be summarized in the annual report.

**Table 13.5**
**Monitoring – Program Goals**

| Program Component | BMP | | Schedule | Responsible Department |
|---|---|---|---|---|
| | Description | Frequency | | |
| Continuous Monitoring Station Maintenance | Cleaning Form | Update as needed | 30 September 2021 | Engineering |
| | Cleaning | Every 3 to 6 weeks | 30 September 2021 | |
| | Calibration Form | Update as needed | 30 September 2021 | |
| | Calibration | Every 8 to 12 weeks | 30 September 2021 | |
| Grab Sampling | Three Mile Branch | 2 / year | 30 September 2021 | Engineering |
| | Jenkins Creek | 2 / year | 30 September 2021 | |
| | Catoma Creek | 2 / year | 30 September 2021 | |
| Program Evaluation | Evaluate Program Effectiveness | Annually | 30 September 2021 | Engineering |
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