CITY OF AUBURN, ALABAMA

Stormwater Management Plan

July 2011

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1.0 INTRODUCTION

1.1 Permit History

In response to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Regulations, the City of Auburn (City) applied for and received a NPDES permit for stormwater discharges from the Alabama Department of Environmental Management (ADEM) on May 14, 2003. This five-year permit expired in March 2008.

The City submitted a timely NPDES permit renewal application to ADEM in August 2007. On September 10, 2009, ADEM released the proposed NPDES Phase II Stormwater Permit to Municipal Separate Storm Sewer System (MS4) permittees in draft form for review and comment. ADEM, realizing that significant changes were going to occur with the new Phase II permit, elected to host a series of public involvement workshops and hearings for the Phase II permittees beginning in October 2009. These workshops and hearings provided an opportunity for ADEM to go through the changes in the new permit with the permittees and provided an opportunity for permittees to ask questions of ADEM regarding the permit. Formal comments provided by the permittees were reviewed and addressed in the draft Phase II Stormwater General Permit for MS4s released for public comment on January 14, 2010. Additional comments were received on the January 2010 draft permit during the public comment period. ADEM issued a revised draft permit addressing these comments in May 2010. The United States Environmental Protection Agency (EPA) filed a formal objection to the May 2010 draft permit issued by ADEM in August 2010. ADEM addressed EPA's additional comments in a draft permit issued in November 2010 and EPA approved the November 2010 draft permit in December 2010. ADEM issued the final permit to the Phase II permittees, including the City, effective February 1, 2011. This permit requires that the City submit an updated Stormwater Management Plan (SWMP) to ADEM by August 1, 2011.

1.2 Site Description

The City of Auburn is located in east central Alabama. A map of the City is provided in Appendix A. The city limits encompass an area of approximately 53 square miles (37,446 acres) as of January 2011. This area calculation does not include Auburn University property. The population of the City of Auburn is approximately 55,000 as of January 2011. From the most recent City stormwater infrastructure inventory, the storm drainage system contains approximately 86 miles of storm pipe with 4,500 inlets and 3,000 stormwater manholes/junction boxes. The City is currently updating its stormwater infrastructure inventory.

1.3 Known or Suspected Water Quality Concerns

There are three "major" watersheds that encompass the surrounding areas, of which Auburn lies at or near the headwaters of each. Each of these "major" watersheds is categorized under the United States Geological Survey (USGS) system of drainage basin cataloging known as a Hydrologic Unit Code (HUC). More specifically, these three watersheds are categorized as 10-digit HUC's. These three watersheds are the Chewacla Creek Watershed (HUC 0315011003), the Saugahatchee Creek Watershed (HUC 0315011002), and the Uphapee Creek Watershed (HUC 0315011004), all of which ultimately drain to the Tallapoosa River. Contributing to these "major" watersheds are numerous smaller 1st, 2nd, 3rd, and 4th order streams which are scattered throughout the City limits. Of these "smaller" streams, four are named USGS waterbodies. These are Choctafaula Creek, Moore's Mill Creek (303(d) listed), Parkerson Mill Creek (303(d) listed), and Town Creek. All together, the above referenced water features, within the Auburn area, make up a network of more than 825 miles of stream, more than 1,000 lakes/ponds, and more than 2,500 acres of wetland. A detailed map of these features can be found at:

http://www.auburnalabama.org/WRMDir/WaterShed/11x17%20Watersheds%20Map.pdf.

Moore's Mill Creek was placed on the draft 303(d) list in 1998 and was listed on the final 303(d) list in 2002, 2004, 2006, 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as stream siltation resulting from sedimentation deriving from local development within the Moore's Mill Creek watershed. Remediation work has been completed within the Moore's Mill Creek Watershed including a recently completed streambank stabilization project in the Moore's Mill Golf Course. Routine water quality monitoring within the Moore's Mill Creek Watershed shows improving water quality. ADEM has indicated that a Total Maximum Daily Load (TMDL) for Moore's Mill Creek will be issued in 2012.

The Saugahatchee Embayment, where Saugahatchee Creek discharges into Yates Lake, was placed on the final 303(d) list in 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The Embayment was placed on the 303(d) list primarily for nutrient enrichment. ADEM and EPA issued the final TMDL for nutrients (Total Phosphorus) and organic enrichment/dissolved oxygen for Pepperell Branch and the Saugahatchee Embayment in April 2008. Implementation of the stormwater TMDL for Total Phosphorus will be addressed through this SWMP.

Parkerson's Mill Creek, from its source to Chewacla Creek, was placed on the final 303(d) list in 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as pathogens resulting from urban runoff and storm sewers. ADEM has indicated that a TMDL for Parkerson's Mill Creek will be issued in 2011.

1.4 Responsible Party

When the City began its Phase II Stormwater Program, coordination and implementation of the individual SWMP was the responsibility of the Public Works Department. In October 2005, management of the stormwater program was transferred from the Public Works Department to the Water Resource Management Department, under a newly created Watershed Division. The intent of the move was to progressively manage water supply operations, wastewater operations and stormwater operations from a watershed perspective for all components that impact water quality within the City.

The City's SWMP is composed of several programs operating under various departments within the City's organization. Components of the SWMP are as follows:

- Water Resource Management Department – Manages overall SWMP and compliance with Phase II Stormwater Permit; Monitors residential and commercial construction and conducts erosion and sediment control inspections; Manages water quality sampling program; Manages public education and outreach program; Assists the Public Works Department with annual detention pond inspections;

- Public Works Department – Performs maintenance of stormwater infrastructure and assists with inspections of residential and commercial construction; Performs annual detention pond inspections;

- Environmental Services Department – Operates and manages the recycling and composting program; Operates and manages the street sweeping program; Coordinates the annual Household Hazardous Waste Collection Day;

- Parks and Recreation Department – Coordinates the annual Earth Day activities and City Fest; Responsible for managing the City's greenspace/greenway program;

- Public Safety Department – Monitors residential and commercial construction.

The person responsible for the coordination and implementation of the individual SWMP is as follows:

Matthew R. Dunn, P.E., Watershed Division Manager
Water Resource Management Department
City of Auburn
1501 West Samford Avenue
Auburn, AL 36832
(334) 501-3077
mdunn@auburnalabama.org

1.5 Stormwater Management Program Components

The Phase II stormwater regulations require operators of small MS4s in urbanized areas to develop and implement stormwater management programs employing best management practices (BMPs) to adequately address the six minimum control measures. The control measures include:

- Public Education and Outreach;
- Public Involvement/Participation;
- Illicit Discharge Detection and Elimination;
- Construction Site Stormwater Runoff Control;
- Post Construction Stormwater Management, and;
- Pollution Prevention/Good Housekeeping for Municipal Operations.

2.0 PUBLIC EDUCATION AND OUTREACH

2.1 Rationale Statement

The City's goal is to have an aggressive, innovative and fiscally responsible public education and outreach program that aims to inform all target audiences within the City on the steps that they can take to reduce stormwater pollution in their daily routine. In addition to this informative stormwater pollution prevention strategy, the City will work to educate these target audiences on how to become involved in the City's stormwater program through the best management practices (BMPs) detailed below.

The primary target audiences within the City and the rationale for selecting these audiences are listed below:

- General Public (homeowners and citizens)
    - Potential contributors of stormwater pollution through activities such as illicit discharges and over-fertilization of lawns. The primary pollutants potentially contributed by this target audience are nutrients and pathogens.
- Engineers, Developers and Contractors
    - Potential contributors of stormwater pollution through development and construction activities as well as engineering design of stormwater pollution prevention best management practices. The primary pollutants potentially contributed by this target audience are sediment and nutrients.
- Landscape companies
    - Potential contributors of stormwater pollution primarily through lawn maintenance activities. The primary pollutants potentially contributed by this target audience are excess nutrients.
- Golf courses
    - Potential contributors of stormwater pollution primarily through golf course maintenance activities. The primary pollutants potentially contributed by this target audience are excess nutrients.
- Local businesses
    - Potential contributors of stormwater pollution through activities such as illicit discharges and daily business activities. The primary pollutants contributed by this target audience are excess nutrients and pathogens.

The City's public education and outreach program is designed to address all stormwater pollutants of concern, but generally focuses on the pollutants for which waterbodies within the City are currently listed as impaired. These specific pollutants include:

- Nutrients (primarily Total Phosphorus)
- Sediment
- Pathogens

The public education and outreach strategy for each target audience will vary depending on the type of audience, type of pollutant contribution, potential risk and impact of pollutant contribution and current level of education of each target audience on the City's stormwater management program.

Overall management and implementation of the City's stormwater public education and outreach program is detailed in Section 1.4

Overall success of our public education and outreach program will ultimately be gauged by the results from our water quality monitoring program as well as the level of awareness in the community regarding their role in the City's stormwater management program.

Specific components and measureable goals within our public education and outreach program will consist of, but not be limited to, the following best management practices (BMPs):

2.2 Open Line Articles

Open Line is a monthly newsletter mailed to Auburn citizens each month through their utility bill. Articles and messages contained in the newsletter reach a large and diverse group of citizens. The City's goal is to publish a minimum of five (5) stormwater-related articles in Open Line per year. Open Line articles will reach a general public target audience.

2.3 Brochure Publications

Pamphlets and brochures are an effective way to present and explain stormwater issues. Unlike other communication vehicles, pamphlets and brochures can be distributed in many locations without requiring staffing and the location of distribution can specifically target the audience of interest. The City's goal is to publish a minimum of two (2) stormwater brochures per year and to make those brochures available to the public at City facilities, City functions and the City's Phase II Stormwater website. Brochures will primarily reach a general public target audience.

2.4 Phase II Stormwater Website

Citizens often go to the City's website to obtain information on items of local interest. The website is accessible 24 hours per day and can serve citizens that do not have the time or the ability to physically meet with staff during normal working hours. The City created a Phase II Stormwater website in March 2003. City stormwater policies, ordinances, water quality sampling data, design manuals and links to related sites have been posted and are available to the public. The City's Phase II Stormwater website can be accessed at http://www/auburnalabama.org/wrm-watershed. The City will continue to update the Phase II Stormwater website on a monthly basis to provide new or updated information, such as monthly water quality sampling reports. The Phase II Stormwater website will reach a general public target audience.

2.5 Public Presentations

The City provides staff and/or resources to develop presentations for public meetings, conferences and workshops upon request. Presentations are typically offered in PowerPoint format and the topics are chosen by the organization requesting the information. The City's goal will be to prepare and conduct a minimum of two (2) presentations per year. The target

audience for public presentations will vary depending upon the organization requesting the presentation. Target audiences for presentations could include schools, environmental stakeholder groups, local Civic groups, City Council, developers, contractors, engineers, homeowners or other interested Phase II programs.

2.6 Workshops

In an effort to educate contractors, developers, engineers and City staff, the City has initiated a series of workshops. The content of these workshops focuses on local stormwater issues of concern. The City's goal is to conduct a minimum of two (2) workshops per year. Examples of these workshops include the annual Erosion and Sediment Control workshop and the annual Spill Prevention Control and Countermeasure (SPCC) workshop. Other workshops will be planned as needed and as budget allows. Workshops will reach a diverse target audience group including developers, contractors, engineers and City staff. For example, the Erosion and Sediment Control workshop targets developers, contractors and engineers, while the SPCC workshop primarily targets City staff who are involved with chemicals and petroleum products on a daily basis.

2.7 Earth Week Activities

Earth Day is a week-long event in the City. The City has created and implemented a week of environmental activities and events aimed at educating citizens of all ages on the importance of protecting our environment. Examples of events included during Earth Week include the City's annual household hazardous waste collection day and Earth Week activities for school children at the local elementary schools. The City will continue to provide Earth Week activities during the course of this permit cycle. Earth Week activities primarily reach a general public and school children target audience.

2.8 Newspaper Articles

Newspaper articles covering local stormwater/environmental issues are a means for disseminating information to a large and diverse group of residents most directly impacted by these issues. Informative articles can provide the reader with an independent point of view. The reader is not forced to rely on information generated by a single source (i.e. the City through the Open Line newsletter or brochures). The City is fortunate to have a local daily publication. The Opelika-Auburn News is a regional daily newspaper that covers local events and is widely read by residents in Lee County. The City also has a weekly newspaper publication, The Auburn Villager, that began circulation in 2007. The City tracks these articles in an electronic database and will continue to provide listings of these articles with submission of the City's annual stormwater report. The City will provide information on the stormwater program to the local

newspapers that needs to be disseminated at the discretion of the Water Resource Management Department. Newspaper articles will reach a general public target audience.

3.0 PUBLIC INVOLVEMENT/PARTICIPATION

3.1 Rationale Statement

The City intends to involve the general public in the development and implementation of its stormwater management program by soliciting public input, by facilitating the *ALOA* (**A**uburn, **L**ee County, **O**pelika and **A**uburn University) Citizen Advisory Group (discussed in Section 3.2) and by providing activities and opportunities to engage the general public in our stormwater program. In addition, the City has involved the general public in the development of the City's SWMP by conducting a survey in July 2011 to solicit comments and feedback during development of the SWMP.

The primary target audiences for the City's public involvement/participation program and the rationale for selecting these audiences are listed below:

- General Public (homeowners and citizens)
  - Potential contributors of stormwater pollution through activities such as illicit discharges and over-fertilization of lawns. The primary pollutants potentially contributed by this target audience are nutrients and pathogens.
- Engineers, Developers and Contractors
  - Potential contributors of stormwater pollution through development and construction activities. Engineers can provide water resource protection through engineering design of proper stormwater pollution prevention best management practices. The primary pollutants potentially contributed by this target audience are sediment and nutrients.
- Landscape Companies
  - Potential contributors of stormwater pollution primarily through lawn maintenance activities. The primary pollutants potentially contributed by this target audience are excess nutrients.
- Golf Courses
  - Potential contributors of stormwater pollution primarily through golf course maintenance activities. The primary pollutants potentially contributed by this target audience are excess nutrients.
- Local Businesses
  - Potential contributors of stormwater pollution through activities such as illicit discharges and daily business activities. The primary pollutants contributed by this target audience are excess nutrients and pathogens.

The City's public involvement/participation program is designed to address all stormwater pollutants of concern, but also focuses on the pollutants for which waterbodies within the City of Auburn are currently listed as impaired. These specific pollutants include:

- Nutrients (primarily Total Phosphorus)
- Sediment
- Pathogens

The public involvement/participation strategy for each target audience will vary depending on the type of audience, type of pollutant contribution, potential risk and impact of pollutant contribution and current level of education and involvement of each target audience in the City's stormwater management program.

Overall management and implementation of the City's stormwater public involvement/participation program is detailed in Section 1.4.

Overall success of the public involvement/participation program will ultimately be gauged by the public's support for the City's stormwater management program, the level of community involvement in the City's stormwater management program and the level of awareness in the community regarding their role in the City's stormwater management program.

Specific components and measureable goals within the public involvement/participation program will consist of the following best management practices (BMPs):

3.2 *ALOA* Citizens Advisory Committee

Both the EPA and ADEM recommend that the public be included in developing, implementing and reviewing stormwater management programs. One method for initiating this involvement is through the use of a citizens advisory committee. Communities that allow citizens representing diverse backgrounds and interests to participate in such a committee are far more likely to gain community support through implementation.

ALOA is a Citizens Advisory Committee that serves Auburn, Lee County, Opelika and Auburn University. ALOA was formed in 2002 and meets on a quarterly basis to review and provide public input on current policies, brochure content, educational material and proposed ordinances.

The City will continue to actively participate in the *ALOA* Citizens Advisory Committee. The *ALOA* committee reaches all of the target audiences discussed in Section 3.1.

3.3 Watershed Organizations

Watershed organizations bring together representatives from utilities, private industry, environmental awareness groups, farmers and branches of government to coordinate individual efforts, share information and plan for water resource and aquatic life protection. These organizations allow participating entities to coordinate individual efforts in order to maximize limited resources.

The City actively participates in, and works closely with, many local and regional watershed organizations. Specific examples of these organizations include the Lower Tallapoosa Clean Water Partnership (LTCWP), Save Our Saugahatchee (SOS), Friends of Chewacla (CHEWUP), Alabama Water Watch, the Saugahatchee Watershed Management Plan (SWaMP) group and the Parkerson Mill Watershed Management Plan group.

The City will continue to participate in, support, and work closely with, these organizations. Watershed organizations reach all of the target audiences discussed in Section 3.1.

3.4 Recycling Program

The City has been operating a curbside recycling program since 1987. In addition to curbside recycling, the City maintains a drop-off center for recyclables across from the Fleet Services Complex located at 365-A North Donahue Drive. These operations allow citizens of Auburn to recycle waste instead of disposing of it in a landfill or improperly disposing of it in our local water resources.

The City initiated a Household Grease Recycling Program in 2009, with containers and bins located at the recycling center. This program provides citizens with a method to properly dispose of household grease and is targeted at reducing illicit discharges and preventing sanitary sewer oveflows. The City plans to begin a pilot curbside household grease collection program in August 2011. For more information on the City's household grease recycling program, please visit http://www.auburnalabama.org/wrm-sewer/FOG.asp.

The City will continue to implement a recycling program in the City of Auburn throughout this permit cycle. The recycling program will generally reach a general public target audience.

3.5 Storm Drain Marking Program

In cooperation with the Auburn University Sustainability Initiative, the City initiated a storm drain marking program in 2007. School children within the City were asked to submit designs for the original storm drain markers that were to be placed in the Saugahatchee Creek, Town Creek and Moore's Mill Creek watersheds. In 2010, the City of Auburn solicited new marker designs from children in the Auburn City School System. In 2009, the City developed a storm drain

marking kit that allows citizens to pick up a kit of materials containing all of the items needed to mark storm drains in their neighborhoods. Once the drains are marked, the citizen returns any unused materials to the Water Resource Management Department as well as a map showing the storm drains that were marked.

This program has been very successful for the City and the City will continue this program throughout the next permit cycle. This program has been utilized by Boy Scout troops, student organizations, environmental groups and private citizens. The Storm Drain Marking program primarily engages the general public, local schools, and local civic and environmental stakeholder groups.

3.6 Website Hotline

In an effort to provide the general public with an additional means of reporting potential stormwater concerns, the City launched the "On-Line Hotline" in March 2003. Citizens now have the ability to log on to the website 24 hours per day and provide information on suspected violations. The information is forwarded to the Water Resource Management Department and an investigation is initiated. The website hotline has proven to be a valuable tool over the course of the past eight years by assisting City personnel in responding to citizen concerns. The website hotline will continue to be available during this permit cycle and will primarily engage a general public target audience.

3.7 City of Auburn Citizen Survey

The Citizen Survey is an annual City survey of a statistical cross section of randomly selected members of the community. The survey asks questions on issues of governmental performance and community priorities and is a means of encouraging citizens to participate in local government. Generally, the survey contains several questions that directly correlate to stormwater quality issues. The questions typically cover such items as storm drainage system adequacy, stormwater quality, trash collection and yard waste disposal, recycling, natural resource protection, greenspace initiatives and future growth planning.

3.8 Other Public Involvement Initiatives and Special Projects

The City implemented and/or participated in a number of additional public involvement/participation programs during the first permit cycle that will be continued if interest is sustained and the City deems it beneficial for these programs to continue. Examples of these programs include: the Streamside Classroom, Rain Barrel Workshops, CityFest, Greenspace/Greenway Master Plan and the Lee County Water Festival. More information on these programs can be found in the City's annual Phase II Stormwater Reports, which can be downloaded at: http://www.auburnalabama.org/wrm-watershed.

The City will actively pursue new and innovative programs to involve the public during this permit cycle and will work to implement programs that are likely to be successful in the community.

The City will continue to engage the public in other special projects that may be initiated by the City or through coordination with watershed stakeholder groups (example: SWaMP, Parkerson Mill Watershed Management Plan Group, and the LTCWP). Specific examples of these projects during the first permit cycle included the Moore's Mill Stream Restoration Project and the Town Creek Park Stream Restoration Project. SWaMP received a Phase II implementation grant in early 2011 which may provide potential opportunities for additional projects.

4.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION

4.1 Rationale Statement

The City implemented an aggressive illicit discharge detection and elimination (IDDE) program to actively locate, identify and correct illicit discharges to the MS4 during the first permit cycle. The City will continue to manage, enforce and expand its IDDE program during this next permit cycle.

The primary target audiences within the City for the IDDE program and the rationale for selecting these audiences are listed below:

- General Public (homeowners and citizens)
    - Potential contributors of illicit discharges through activities such as dumping grass clippings, or dumping paint or motor oil, into a storm drain. The primary pollutants potentially contributed by this target audience are based on the material being improperly disposed of.
- Developers, Contractors and Homebuilders
    - Potential contributors of illicit discharges through activities such as sediment being released from a construction site into a waterbody and dumping paint or concrete washwater into a storm drain. The primary pollutants potentially contributed by this target audience are specific to the material being improperly disposed of and could include sediment, petroleum-based products, or other chemicals.
- Food Service Facilities
    - Potential contributors of illicit discharges through improper disposal of fats, oils and greases (FOG). The primary pollutant potentially contributed by this target audience is FOG waste.
- Local Businesses such as Pest Control Companies and Dry Cleaners

- Potential contributors of illicit discharges through improper disposal of materials used at their business. The primary pollutants contributed by this target audience are specific in nature to the type of business and the material being disposed of.

The City's IDDE program is designed to address all stormwater pollutants of concern, and also is specific to the nature of the discharge. Examples of these pollutants could include:

- Nutrients (primarily Total Phosphorus)
- Sediment
- Pathogens
- FOG waste
- Petroleum-based products
- Paints, concrete, grass clippings
- Other business-specific chemicals

The IDDE strategy for each target audience will vary depending on the type of audience, type of pollutant contribution, potential risk and impact of pollutant contribution and current level of education of each target audience on the City's IDDE program and previous IDDE issues with the target audience.

Overall management and implementation of the City's stormwater IDDE program is detailed in Section 1.4.

Overall success of our IDDE program will ultimately be gauged by having accurate and updated storm sewer system maps, reduction in illicit discharges, and the level of public awareness to potential illicit discharges.

Specific components and measureable goals within our IDDE program will consist of the following best management practices (BMPs):

4.2 Storm Sewer System Map

The City completed the initial mapping of its storm sewer system in 2003. The mapping is maintained in a Geographical Information Systems (GIS) Database. Detailed information on pipe size, pipe material, flow direction, inlets, manholes, bridges, box culverts, detention ponds and headwalls are provided on the map. The City will be working to update the storm sewer system maps during this next permit cycle.

4.3 Illicit Discharge Ordinance

Section 3(B), Paragraph 3(a)(iii) of the NPDES General Permit Number ALR04003 states "*To the extent allowable under State and local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system…….and implement appropriate enforcement procedures and actions.*" In the City's Notice of Intent for the initial Phase II Stormwater permit cycle, submitted to ADEM in March 2003, the stated goal was to develop and implement an Illicit Discharge Ordinance by December 2005. This goal was met nearly two years ahead of schedule. A draft copy of the Illicit Discharge Ordinance was reviewed by the *ALOA* Citizens Advisory Committee in November 2003. The Auburn City Council adopted the Illicit Discharge Ordinance on January 20, 2004.

The City's Illicit Discharge Ordinance prohibits any material from being placed into the City's MS4 that is not composed entirely of stormwater, except for discharges that are pursuant to a NPDES permit or discharges from firefighting or emergency management activities.

The City's Illicit Discharge Ordinance provides escalating enforcement procedures for violators of the ordinance. First-time violators are notified of the violation and the provisions in the City's Ordinance through a notification letter that is sent to the violator. For repeat violators, the City has the authority to issue a citation to appear in the City's Municipal Court where fines are set forth in Alabama Code 11-45-9 and are generally set at $500 per day per offense.

As recommended in Permit Number ALR04003, the City will evaluate its Illicit Discharge Ordinance on a yearly basis to see what modifications or changes may be needed. The City will continue to aggressively pursue, identify and correct illicit discharges that are found within the MS4. The City's Illicit Discharge Ordinance affects all of the target audiences discussed in Section 4.1.

4.4 Stormwater Outfall Reconnaissance Inventory

In 2009, the Water Resource Management Department began a stormwater outfall reconnaissance inventory (ORI) program. The purpose of the ORI program is to walk each watershed in the City's MS4 (six total), conduct an inspection of each stormwater outfall and prepare detailed documentation of each stormwater outfall in the basin being inspected. City staff document illicit discharges as well as potential, likely and possible illicit discharges. The City's ORI program is patterned on recommendations outlined in a manual titled *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (Center for Watershed Protection and Dr. Robert Pitt, October 2004). The City's goal is to prioritize each watershed for inspection based on the methodology outlined in Dr. Pitt's manual, and to inspect each watershed in the City's MS4 as timely and efficiently as possible. The City's ORI program affects all of the target audiences discussed in Section 4.1.

4.5 Illicit Discharge Reporting Form

In 2008, the Water Resource Management Department developed an illicit discharge reporting form that residents can download, complete and e-mail back to the Department upon discovering a potential illicit discharge. Residents have 24-hour access to this form through the City's website. This form assists the City in tracking and responding to illicit discharges. The City will continue to use this reporting form during this permit cycle. The Illicit Discharge Reporting Form generally affects all of the target audiences discussed in Section 4.1.

4.6 Grease Trap Inspection Program

The City's Water Resource Management Department has initiated a program to inspect food service facility (FSF) grease traps on a quarterly or as-needed basis. This program ensures that FSF grease traps are being properly serviced, thereby minimizing the potential for FOG to accumulate in the City's sanitary sewer collection system. This in turn, diminishes the potential for sanitary sewer overflows (SSOs) and potential illicit discharges as a result of these SSOs. The City plans to continue and expand its grease trap inspection program in the future. The grease trap inspection program primarily affects the FSF target audience.

4.7 Household Hazardous Waste Collection Day

The City has hosted an annual Household Hazardous Waste Collection Day for the last several years. During this event, the City allows its customers to drop off hazardous household chemicals at a collection site, free of charge. The items are then disposed of in a safe manner, eliminating the possibility of these items being improperly dumped into local streams. The City plans to continue this program for the foreseeable future as long as the public interest in this program continues. This program primarily affects the general public target audience.

4.8 Hazardous Waste Emergency Response Team

Several years ago, the City entered into an agreement with the City of Opelika to share some of the cost of operating an emergency response vehicle equipped to handle hazardous waste spills. This agreement provides the City with the ability to properly identify and address hazardous or potentially hazardous spills.

4.9 Other IDDE Initiatives

The City will actively pursue new and innovative programs to detect and eliminate illicit discharges during this permit cycle and will work to implement programs that are likely to be successful in the community.

5.0 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

5.1 Rationale Statement

The City implemented an aggressive construction site stormwater runoff control program during the first permit cycle to effectively manage construction site stormwater. The City will continue to manage, enforce and expand its construction site stormwater runoff control program during this next permit cycle.

The primary target audiences within the City for our construction site stormwater runoff control program and the rationale for selecting these audiences are listed below:

- Developers, Contractors and Homebuilders
  - Potential contributors of stormwater pollution through development and construction activities. The primary pollutant contributed by this target audience, as it relates to construction site stormwater runoff, is sediment.
- Engineers
  - Responsible for designing effective construction site best management practices plans (CBMPPs) to minimize the potential for sediment runoff during development or construction activities.

The City's construction site stormwater runoff control program is primarily designed to address stormwater pollution from sediments.

The strategy for the target audiences described above will vary depending on the type of audience, potential risk and impact of pollutant contribution and current level of education of each target audience on the City's construction site stormwater runoff control program.

Overall management and implementation of the City's stormwater construction site stormwater runoff control program will be the responsibility of the City's Water Resource Management Department as detailed in Section 1.4.

Overall success of the construction site stormwater runoff control program will ultimately be gauged through water quality monitoring, and more specifically turbidity monitoring as described in the Comprehensive Stormwater Quality Monitoring Plan (see Appendix D) as well as through the design and implementation of effective CBMPPs and timely response from contractors and developers regarding deficiencies found on-site.

Specific components and measureable goals within our construction site stormwater runoff control program will consist of the following best management practices (BMPs):

5.2 Erosion and Sediment Control Ordinance

The City adopted the Erosion and Sediment Control Policy drafted by the *ALOA* Citizens Advisory Committee in 2003 as a City Ordinance. The Ordinance established rules and regulations for erosion and sediment control that applies to contractors, developers and engineers performing work in the City. A copy of this Ordinance can be found in Appendix B.

5.3 Erosion and Sediment Control Inspections and Enforcement Procedures

The City, in an effort to patrol the management of erosion and sediment control measures on active construction sites, initiated a construction site inspection program in 2003. The inspection program is designed to identify deficiencies in erosion and sediment control and initiate corrective actions. All construction sites in the City are inspected after each ¾-inch, 24-hour rainfall event, or a minimum of once per month. Inspections are conducted using an Erosion Control Checklist that was developed by the City in 2004. Copies of all inspection reports and other documentation are maintained in an electronic format by the City's Water Resource Management Department.

The Auburn City Council approved additions to the City's Erosion and Sediment Control Ordinance in 2005 to establish protocol for enforcement of the Ordinance and to enable City personnel to issue citations and/or stop work orders to developers/contractors in violation of the Ordinance.

For additional information concerning the City's Erosion and Sediment Control Inspection and Enforcement Program, please refer to the *City of Auburn – Erosion and Sediment Control Inspection and Enforcement Program- July 2010* document included in Appendix C as well as the *Erosion and Sediment Control Process Flow Chart* included in Appendix C.

5.4 Erosion and Sediment Control Plan Review Procedures and Permitting Process

Plan review procedures, as well as the construction site permitting process, for developments in the City are outlined in the Water Resource Management Design and Construction Manual (http://www.auburnalabama.org/wrm-watershed/Default.aspx?PageID=216).

5.5 Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas (Alabama Handbook)

The City has standardized on the use of the Alabama Handbook for the design, construction and installation of proper erosion and sediment control best management practices on developments within the City. All standard erosion and sediment control details in the Water Resource Management Design and Construction Manual are reflective of the Alabama Handbook.

5.6 Rainfall Data Collection

In 2005, the City began maintaining historical rainfall data records. The data is obtained through a subscription to the Agricultural Weather Information System (AWIS) website. AWIS records daily weather data from the NOAA weather station at the Auburn University Regional Airport. Daily rainfall data is also collected at the City's two water pollution control facilities, as well as at Lake Ogletree and the James Estes Water Treatment Plant. In 2008, the City contracted with RainWave® (www.rainwave.org) to provide real-time rainfall data utilizing Doppler radar imagery at five predetermined locations selected by the City. In 2008, working in cooperation with the City's Information Technology Department, staff created a Geographic Information Systems (GIS) rainfall distribution analysis tool that allows staff to map rainfall patterns across the City. This, in turn, allows staff to perform erosion and sediment control inspections more efficiently by concentrating the inspections in areas where qualifying rain events occurred.

5.7 Qualified Credentialed Inspector (QCI) Program

All inspectors performing erosion and sediment control inspections in the City of Auburn go through the QCI training program to receive the QCI certification. Inspectors also take the refresher course each year to maintain their QCI certification. This allows staff to be aware of any changes occurring in the state's program from year to year and also provides an opportunity to educate the City's inspectors on proper erosion and sediment control BMPs. The City will continue to invest the time and resources to ensure that inspectors receive the proper training to receive and annually renew their QCI certification during this permit cycle.

5.8 Procedures for Notifying ADEM of Non-Compliant Sites

The City will notify ADEM, either by phone or email, of any construction sites where a possible violation of the Clean Water Act has occurred. Possible violations could include, but are not limited to: releases of sediment to a Water of the State/U.S. and/or failure to adhere to the City's corrective action request following an inspection.

5.9 Procedures for Receipt of Information Submitted by the Public

The website hotline, detailed in Section 3.6 of the Stormwater Management Plan, provides a mechanism in which the general public can provide information regarding potential erosion and sediment control concerns. The general public can also report potential concerns by contacting the City's Watershed Division either by phone (334-501-3060) or e-mail (webwtrswr@auburnalabama.org). The City will respond to each concern in a timely and efficient manner.

6.0 POST-CONSTRUCTION STORMWATER MANAGEMENT

6.1 Rationale Statement

The City implemented a program to control and improve post-construction stormwater runoff from new development and redevelopment during the first permit cycle. The City will continue to expand upon and improve this program during the next permit cycle. Potential benefits of effectively controlling post-construction stormwater runoff include: water quality improvements, minimization of stream erosion and effective control of potential flooding impacts.

The primary target audiences within the City for our post-construction stormwater management program and the rationale for selecting these audiences are listed below:

- Developers, Contractors and Homebuilders
  - Responsible for development and construction activities that can potentially impact post-construction stormwater management. The primary pollutants contributed by this target audience, as it relates to post-construction stormwater management, are sediments and nutrients. In addition, development and construction activities can have potential flooding impacts.
- Engineers
  - Responsible for designing post-construction stormwater management plans to effectively manage post-construction stormwater from new developments and redevelopments.

The City's post-construction stormwater management program is primarily designed to address stormwater pollution from nutrients, sediments, pathogens and other various pollutants.

The strategy for the target audiences described above will vary depending on the type of audience and the potential risk and impact of pollutant contribution from post-construction stormwater runoff.

Overall management and implementation of the City's post-construction stormwater management program will be the responsibility of the City's Water Resource Management Department as detailed in Section 1.4.

Overall success of our post-construction stormwater management program will primarily be gauged through water quality monitoring as well as visual observations of stream erosion and flooding impacts.

Specific components and measureable goals within our post-construction stormwater management program will consist of the following best management practices (BMPs):

6.2 Non-Structural BMPs

6.2.1 Engineering Design and Construction Manuals

In April 2003, the City published a Stormwater Design Manual that effectively addressed stormwater runoff controls required for sites greater than one acre. The manual identified project requirements and specifications for new stormwater infrastructure. During the first eight years of implementation, the manual proved to be a very successful tool for the City and engineers.

The Water Resource Management Department developed a Design and Construction Manual that includes engineering design criteria for sewer and water infrastructure, as well as stormwater BMPs for water quality protection such as rain gardens and stormwater wetlands. The Public Works Department also developed a comprehensive Engineering Design Manual during this time period. The 2003 Stormwater Design Manual was updated during this process and included as an appendix in the Public Works Manual. Both the Public Works and Water Resource Management Design and Construction Manuals were adopted by the City Council in November 2010 and became effective January 1, 2011.

The City will continue to use these manuals as guides for the design and construction of appropriate BMPs to effectively manage post-construction stormwater runoff during this permit cycle. The City will update these manuals as necessary as new technologies present themselves or as changes need to be made to design or construction procedures of existing BMPs. The Public Works and Water Resource Management Design and Construction Manuals primarily affect a target audience of engineers, developers, contractors and homebuilders.

6.2.2 Stream Buffer Regulations

As part of the Erosion and Sediment Control Ordinance adopted by the City Council in July 2002, a minimum 25-foot non-disturbed vegetative buffer zone was required for new developments on “blue line” streams and creeks identified on USGS 7.5 minute topographic maps. In May 2006, the Auburn City Council adopted new stream buffer regulations. The 2006 buffer regulations were based on a managed-use type buffer rather than a strict non-disturbed buffer approach. The 2006 regulations implemented a 3-zoned buffer (streamside, managed use and upland zones) with the width of the buffer being based on the drainage area of the stream. The City’s stream buffer requirements can be found in Section 4.4.7 of the Water Resource Management Design and Construction Manual.

Stream buffers have been proven to reduce stormwater pollution and decrease the potential for streambank erosion. The City will continue to implement these stream buffer regulations during this next permit cycle. The stream buffer regulations primarily affect a target audience of

engineers, developers, contractors, homebuilders and citizens. The amount of riparian buffer acreage being protected each year will be contingent upon the number of developments occurring where a stream is located.

6.2.3 Water Quality Plan Requirements

The City requires that a water quality plan be submitted for all developments in the City that are located in an impaired watershed (303(d) listed or TMDL listed), as well as any development located in the City's source watershed, Lake Ogletree. These plans have to be prepared by a professional engineer registered in the State of Alabama and are required to be submitted for review prior to development during the plan review process.

These water quality plans must effectively address post construction stormwater runoff, and specifically the pollutant of concern for which the watershed is listed (i.e. nutrients, sediments, pathogens, etc.).

The City will continue to implement water quality plan requirements during this next permit cycle. These requirements primarily affect a target audience of engineers, developers, contractors and homebuilders.

6.2.4 Conservation Subdivision Regulations

In 2006, staff members from the Planning Department, Water Resource Management Department, Public Works Department and Parks and Recreation Department began developing conservation subdivision regulations to aid in the protection of local water resources. These regulations were approved by the Auburn City Council in 2007. The regulations promote water resource protection through the setting aside of open space, concentrating development away from water resources and promoting low impact development concepts. These regulations can be downloaded from the City's website at http://www.auburnalabama.org/pl/.

The City will continue to promote these conservation subdivision regulations during the next permit cycle. These conservation subdivision regulations primarily affect a target audience that includes engineers, developers, contractors and homebuilders.

6.2.5 Site Development Review Tool

In 2006, the Water Resource Management Department developed a Site Development Review Tool (Tool) that could be utilized by local engineers when designing stormwater BMPs on developments within the City.

The Tool is based on a Microsoft Excel platform and can be used by engineers and developers to design and incorporate structural stormwater BMPs for developments within the City.

The Tool provides pollutant removal estimates for site specific conditions based on removal efficiencies for a variety of stormwater BMPs including, but not limited to, detention ponds, bioretention cells and stormwater wetlands. The Tool analyzes a variety of stormwater pollutants including nutrients (phosphorus and nitrogen) and total suspended solids. This Tool can be used to meet the water quality plan requirements discussed in Section 6.2.3. A copy of the Tool can be downloaded at http://www.auburnalabama.org/wrm-watershed.

The City will continue to utilize and promote the use of the Tool for post-construction stormwater runoff water quality protection during the next permit cycle. The Tool primarily affects a target audience of engineers and developers.

6.3 Structural BMPs

6.3.1 Detention Pond Inspections

Existing detention ponds need periodic inspections to evaluate the maintenance and operation of these vital components of the City's drainage system and can often identify potential problems. The Public Works Department and the Water Resource Management Department conduct annual inspections of all detention ponds (public and private) listed in the City's stormwater inventory. Upon inspection, the owner of the pond is notified of any corrective actions needed. Enforcement measures are taken if the owner does not address the items listed in the report.

The City will continue to inspect detention ponds within the City on an annual basis during the next permit cycle. These inspections primarily affect the owner of the facilities.

6.3.2 Design Guidelines for Structural BMPs

The City has in place guidelines for the design, construction, installation and maintenance of stormwater BMPs. These guidelines can be found in the Public Works and Water Resource Management Design and Construction Manuals detailed in Section 6.2.1. These guidelines primarily affect a target audience of engineers, developers and contractors.

6.4 Ordinances/Regulations for Post-Construction Stormwater Management

The City has a variety of ordinances and regulations in place for managing post construction stormwater runoff. A brief description of those ordinances/regulations is below:

- Chapter 7 of the Auburn City Code – Provides regulations for stormwater drainage and flood control in the City of Auburn, as well as illicit `1 discharges and erosion and sediment control; Currently being revised;
- Design and Construction Manuals – Detailed in Section 6.2.1;

- Zoning Ordinance – Establishes development criteria and guidelines for developments within the City.

6.5 Long-Term Maintenance of BMPs

Long-term maintenance of structural BMPs is a critical component to ensure that these BMPs continue to function as originally designed. Maintenance guidelines for detention ponds can be found in Chapter 7 of the Auburn City Code, while maintenance guidelines for other structural water quality BMPs can be found in the Water Resource Management Design and Construction Manual. The Public Works Design and Construction Manual also provides requirements for a maintenance agreement that ensures the long term maintenance of these structures.

During this next permit cycle, the City will continue working to issue and update standard agreements or other mechanisms for developers, homeowner associations, and other groups to ensure the long-term maintenance of these structural BMPs.

7.0 POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

7.1 Rationale Statement

The City implemented a program intended to reduce stormwater pollution and promote good housekeeping measures in municipal operations during the first permit cycle. The City will continue to expand upon and improve this program during the next permit cycle.

Potential benefits from an effective pollution prevention/good housekeeping program for municipal operations include: reduced stormwater pollution from municipal operations and increased employee awareness regarding the effect of their daily activities on stormwater management.

The primary target audiences within the City for our pollution prevention/good housekeeping program for municipal operations and the rationale for selecting these audiences are listed below:

- City Employees
    - Responsible for daily municipal operations. City employees need to be trained and made aware of proper stormwater management and the role their daily activities could potentially have on stormwater management. Examples of impacts could include: how to properly dispose of waste, petroleum products, paints, chemicals and other potentially hazardous products.

The City's pollution prevention/good housekeeping program for municipal operations is primarily designed to address stormwater pollution from nutrients, sediments, pathogens and other various pollutants.

The strategy for the target audience described above will vary depending on the type of audience, the potential risk and impact of pollutant contribution from their daily activities and the current level of education of the target audience.

Overall management and implementation of the City's pollution prevention/good housekeeping program for municipal operations will be the responsibility of the City's Water Resource Management Department as detailed in Section 1.4.

Overall success of our pollution prevention/good housekeeping program for municipal operations will primarily be gauged through city employee awareness and appropriate pollution prevention and good housekeeping measures for municipal operations.

Specific components and measureable goals within our pollution prevention/good housekeeping program for municipal operations will consist of the following best management practices (BMPs):

7.2 Stormwater Management Training

The City has developed a training program that provides the Water Resource Management Department and other City departments with information on the proper methods for implementing site control measures on all municipal projects. City personnel also attend a variety of stormwater/water quality related conferences, workshops and seminars annually. Examples of these training opportunities include ADEM conferences and workshops, national conferences and regional conferences.

One specific example of in-house training provided by the City is the City's spill prevention, control and countermeasure (SPCC) training program. The Water Resource Management Department developed a SPCC training workshop in 2008. This workshop targets City employees who deal with fuels and chemicals on a daily basis and provides basic information on the proper management, handling and disposal of potentially hazardous chemicals.

The City will continue to create, offer and encourage stormwater management training for City employees during the next permit cycle.

7.3 Municipal Operations Recycling

The City's recycling program is managed by the Environmental Services Department. Recycling containers are placed at City facilities by the Environmental Services Department for use by the

various City departments. The City encourages all individual City departments to participate in the City's recycling program. Recyclable waste generated through City activities is collected and processed through the City's recycling center located on Donahue Drive. The City plans to continue this municipal operations recycling program during the next permit cycle.

7.4 Street Sweeping Program

Regular street sweeping has been proven to be an effective means for reducing overall pollutant loading from roads and storm sewer systems. The Environmental Services Department performs street sweeping on numerous roads within the City on a monthly basis. Regular street sweeping measures such as these have been shown to reduce total phosphorus loading from roads by 1.4 to 20 percent and total suspended solids by 4 to 45 percent, with variability seen in frequency of sweeping and machine type (Breault et. al., 2003). The City will continue to implement a street sweeping program during the next permit cycle.

7.5 Risk Management Manual

In 2006 the City developed and adopted a Risk Management Manual that contains specific requirements for dealing with hazardous chemicals. Topic 12 (titled Hazard Communication Program) of the Risk Management Manual specifically requires City personnel to receive training on any hazardous chemicals that may be used during their daily activities. Material Safety Data Sheets (MSDS) identifying personal protective equipment, permissible exposure limits (PEL) and Threshold Limit Values (TLV) are required for all hazardous chemicals used. The City will continue to use this Risk Management Manual as a guide for municipal operations during the next permit cycle.

7.6 Certified Pesticide Applicators

The City's Parks and Recreation Department maintains trained and certified personnel in the application of pesticides, including both restricted use and non-restricted use pesticides. City personnel attend various training events to maintain their certification. By obtaining certification, applicators become knowledgeable of the proper use and application of fertilizers and other chemicals typically used to maintain athletic fields, and best management practices that are intended to reduce the need for pesticides, fertilizers and water. The City will continue to maintain certified personnel in the application of pesticides during the next permit cycle.

8.0 SUMMARY

In summary, the City strives to implement a stormwater management program to protect the City's water resources that is effective, innovative and economically responsible. The City will review this SWMP on an annual basis to analyze the effectiveness of the program and to determine any areas where the program may need to be enhanced or changed.

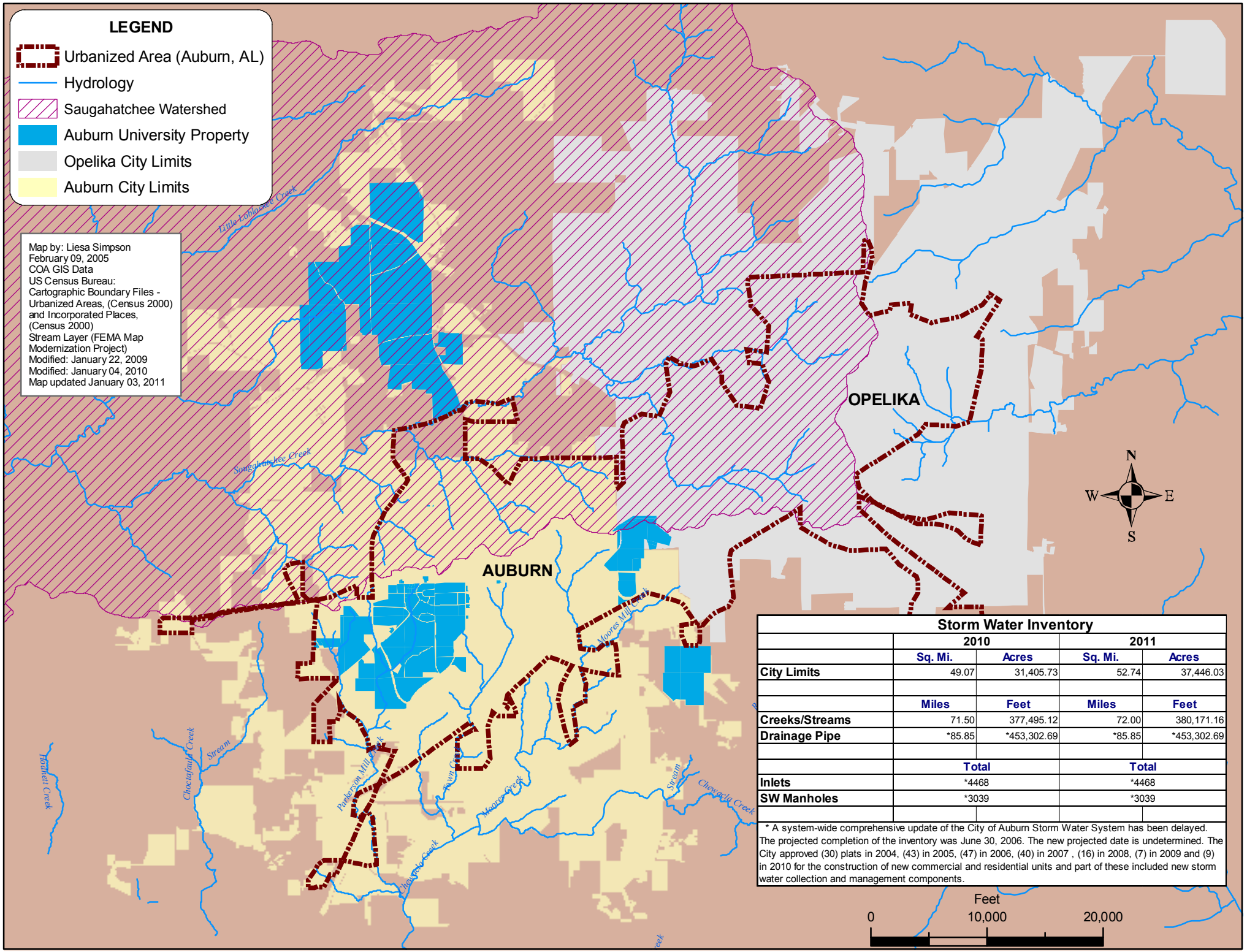
The City will continue to implement a comprehensive water quality monitoring program as detailed in Appendix D of this SWMP to monitor the effectiveness of this program on protecting water resources within the City.

Any comments or questions concerning this SWMP may be directed to:

Matt R. Dunn, P.E.
Watershed Division Manager
Water Resource Management Department
City of Auburn
1501 West Samford Avenue
Auburn, AL 36832
PH: 334-501-3077
e-mail: mdunn@auburnalabama.org

APPENDIX A

CITY OF AUBURN MAP



Storm Water Inventory				
	2010		2011	
	Sq. Mi.	Acres	Sq. Mi.	Acres
City Limits	49.07	31,405.73	52.74	37,446.03
	Miles	Feet	Miles	Feet
Creeks/Streams	71.50	377,495.12	72.00	380,171.16
Drainage Pipe	*85.85	*453,302.69	*85.85	*453,302.69
	Total		Total	
Inlets	*4468		*4468	
SW Manholes	*3039		*3039	

* A system-wide comprehensive update of the City of Auburn Storm Water System has been delayed. The projected completion of the inventory was June 30, 2006. The new projected date is undetermined. The City approved (30) plats in 2004, (43) in 2005, (47) in 2006, (40) in 2007 , (16) in 2008, (7) in 2009 and (9) in 2010 for the construction of new commercial and residential units and part of these included new storm water collection and management components.

APPENDIX B

EROSION AND SEDIMENT CONTROL ORDINANCE

Chapter 7

DRAINAGE AND FLOOD CONTROL*

* **Cross References:** Buildings and building regulations, Ch. 5; sewers and sewage disposal, Ch. 19; sewer construction plan to show location of storm sewers, § 19-21; certain discharges to be exclusively to storm sewer, § 19-107; streets and sidewalks, Ch. 21; grading of streets for drainage, § 21-45; drainage structures for street construction, § 21-51.

State Law References: Power of city to provide for drainage, Code of Ala., § 11-50-50.

Art. I. In General, §§ 7-1--7-17

Art. II. Flood Damage Prevention, §§ 7-18--7-69

Div. 1. Generally, §§ 7-18--7-30

Div. 2. Administration, §§ 7-31--7-35

Div. 3. Provisions for Flood Hazard Reduction, §§ 7-36--7-69

Art. III. Erosion and Sedimentation Control, §§ 7-70--7-100

Art. IV. Illicit Discharge, §§ 7-101--7-118

ARTICLE I.

IN GENERAL

Sec. 7-1. Postdevelopment runoff rate.

(a) Except as otherwise provided by the subdivision regulations and/or the City of Auburn Stormwater Management Manual, the rate of stormwater runoff from any development resulting from the twenty-five-year rainfall occurring within the space of one hour shall not exceed the predevelopment stormwater runoff rate for a twenty-five-year rainfall occurring within the space of one hour.

(b) Except as otherwise provided by the subdivision regulations and/or the City of Auburn Stormwater Management Manual, the provisions of subsection (a) shall not apply to developments of less than one acre.

(Ord. No. 2107, § 1, 4-1-03)

Sec. 7-2. Permit for construction of drainage facilities.

(a) No person shall lay or construct any storm drainage facility, stream enclosure, dam, culvert or spillway in or near any street or avenue within the city which might adversely or otherwise affect that street or avenue without first obtaining a permit therefor from the city engineer.

(b) No such permit shall be granted unless an application shall be made in writing therefor, setting

forth the kind of material to be used, the time for the construction and the limits within which such improvement is to be constructed, and unless the person applying therefor shall agree that such work shall be done under the supervision of the city engineer and according to the plans submitted which will be kept on file in such official's office.

(c) The city engineer shall grant such a permit if the work for which the permit is requested will comply with the city's subdivision regulations. Any person aggrieved by the decision to grant or deny the permit may appeal to the governing body.

(d) The written application and the granting of a permit may be waived upon the discretion of the city engineer in matters of a minor nature.
(Code 1956, §§ 18-14--18-16)

Sec. 7-3. Building floor elevations; ground level; slope.

All building floor elevations, garages and carports will be one foot or higher above the expected one hundred-year flood level. Ground level ten (10) feet from a building will be six (6) inches or more below floor level and slope away from the building. Impervious surfaces should have a slope of one-half of one (0.5) per cent or greater and pervious surfaces of two (2.0) per cent or greater.
(Ord. No. 1218, § 2, 6-17-86; Ord. No. 1458, 12-1-92)

Sec. 7-4. Site drainage plans required.

A site drainage plan will be submitted and approved before a building permit will be issued.
(Ord. No. 1218, § 3, 6-17-86)

Sec. 7-5. Detention ponds.

(a) All existing and any future storm drain detention ponds approved by the city will have complete design data on file with the city engineer and will be subject to at least an annual inspection to ensure that they are functioning to their original design criteria. Specific items to be inspected and approved by the city engineer, or his designee, shall include, but not be limited to, the following: Vegetation cover, sediment, debris, fencing (if required), outlet structure and inlets.

(b) Any defects discovered by the city engineer during such inspection shall be furnished to the owner of the detention pond in writing and the owner shall have fifteen (15) business days from the mailing of said notice to perform the maintenance and any corrective action specified by the city engineer. The city engineer may, at his discretion, allow the owner additional time as the city engineer deems appropriate for the corrective work.
(Ord. No. 1344, § 1, 2-6-90)

Secs. 7-6--7-17. Reserved.

ARTICLE II.

FLOOD DAMAGE PREVENTION*

* **Editors Note:** Ord. No. 1911, adopted Apr. 4, 2000, amended Ord. No. 1266, adopted Dec. 1, 1987, by replacing Art. II with similar provisions, set out herein.

DIVISION 1.

GENERALLY

Sec. 7-18. Definitions.

Unless specifically defined below, words or phrases used in this article shall be interpreted so as to give them the meaning they have in common usage and to give this article its most reasonable application:

Addition (to an existing building) means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by independent perimeter load-bearing wall shall be considered new construction.

AO means areas of 100-year shallow flooding where depths are between one and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.

AH means areas of 100-year shallow flooding where depths are between one and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.

Appeal means a request for a review of the city engineer's interpretation of any provision of this article.

Area of shallow flooding means a designated AO or AH zone on a community's flood insurance rate map (FIRM) with base flood depths from one to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard means the land in the floodplain within a community subject to a one per cent or greater chance of flooding in any given year. In the absence of official designation by the Federal Emergency Management Agency, areas of special flood hazard shall be those designated by the local community and referenced in section 7-20.

Base flood means the flood having a one per cent chance of being equalled or exceeded in any given year.

Basement means that portion of a building having its floor subgrade (below ground level) on all sides.

Building means any structure built for support, shelter, or enclosure for any occupancy or storage.

Development means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, and permanent storage of materials.

Elevated building means a non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

Existing construction means any structure for which the "start of construction" commenced before September 16, 1981.

Existing manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads) is completed before September 16, 1981.

Expansion to an existing manufactured home park or *subdivision* means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

Flood or *flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(a) The overflow of inland or tidal waters; or

(b) The unusual and rapid accumulation or runoff of surface waters from any source.

Flood hazard boundary map (FHBM) means an official map of a community, issued by the Federal Insurance Administration where the boundaries of areas of special flood hazard have been designated as Zone A.

Flood insurance rate map (FIRM) means an official map of a community, issued by the Federal Insurance Administration delineated the areas of special flood hazard and/or risk premium zones applicable to the community.

Flood insurance study means the official report by the Federal Insurance Administration evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

Floodplain means any land area susceptible to flooding.

Floodway or *regulatory floodway* means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

Functionally dependent facility means a facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair facilities. The term does not include long-term storage, manufacture, sales, or service facilities.

Highest adjacent grade means the highest natural elevation of the ground surface, prior to construction, adjacent to the proposed walls of a structure.

Historic structure means any structure that is:

(a) Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

(b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the secretary to qualify as a registered historic district;

(c) Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or

(d) Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:

1. By an approved state program as determined by the Secretary of the Interior; or

2. Directly by the Secretary of the Interior in states without approved programs.

Levee means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

Levee system means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

Lowest floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this code.

Manufactured home means a building transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for one hundred eighty (180) consecutive days or longer and intended to be improved property.

Mean sea level means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of this article, the term is synonymous with National Geodetic Vertical Datum (NGVD) of 1929 or other datum.

National Geodetic Vertical Datum (NGVD) as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

New construction means any structure (see definition) for which the "start of construction" commenced after September 16, 1981.

New manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after September 16, 1981.

Repetitive loss means flood-related damages sustained by a structure on two (2) separate occasions during a ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds twenty-five (25) per cent of the market value of the structure before the damages occurred.

Recreational vehicle means a vehicle which is:

(a) Built on a single chassis;

(b) Four hundred (400) square feet or less when measured at the largest horizontal projection;

(c) Designed to be self-propelled or permanently towable by a light duty truck; and

(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Start of construction means the date the development permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within one hundred eighty (180) days of the permit date. The actual start means the first placement of permanent construction of the structure such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation and includes the placement of a manufactured home on a foundation. Permanent construction does not include initial land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure. (Note: accessory structures are not exempt from any ordinance requirements.) For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) per cent of the market value of the structure before the damage occurred. Substantial damage also means flood related damages sustained by a

structure on two (2) separate occasions during a ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds twenty-five (25) per cent of the market value of the structure before the damages occurred.

Substantial improvement means any reconstruction, addition or other improvement of a structure, the cost of which equals or exceeds fifty (50) per cent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "repetitive loss" or "substantial damage," regardless of the actual repair work performed. The market value of the building should be (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures which have incurred "substantial damage" regardless of the actual amount of repair work performed.

For the purpose of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include either:

(1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

(2) Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

Substantially improved existing manufactured home parks or subdivisions is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds fifty (50) per cent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

Variance is a grant of relief from the requirements of this article which permits construction in a manner otherwise prohibited by this article.
(Ord No. 1911, Art. 1, 4-18-2000)

Cross References: Definitions and rules of construction generally, § 1-2.

Sec. 7-19. Lands to which this article applies.

This article shall apply to all areas of special flood hazard within the jurisdiction of Auburn, Alabama.
(Ord. No. 1911, Art. 2, § A, 4-18-2000)

Sec. 7-20. Basis for area of special flood hazard.

The areas of special flood hazard identified by the Federal Emergency Management Agency in its flood insurance study (FIS) dated September 16, 1981, with accompanying maps and other supporting data, and any revision thereto, are adopted by reference and declared to be a part of this article. For those land areas acquired by a municipality through annexation, the current effective FIS and data for Lee County are hereby adopted by reference. Areas of special flood hazard may also include those areas known to have flooded historically or defined through standard engineering analysis by governmental agencies or private parties but not yet incorporated in a FIS.
(Ord. No. 1911, Art. 2, § B, 4-18-2000)

Sec. 7-21. Establishment of development permit.

A development permit shall be required in conformance with the provisions of this article prior to the commencement of any development activities.
(Ord. No. 1911, Art. 2, § C, 4-18-2000)

Sec. 7-22. Compliance.

No structure or land shall hereafter be located, extended, converted or altered without full compliance with the terms of this article and other applicable regulations.
(Ord. No. 1911, Art. 2, § D, 4-18-2000)

Sec. 7-23. Abrogation and greater restrictions.

This article is not intended to repeal, abrogate or impair any existing ordinance, easements, covenants or deed restrictions. However, where this article and another conflict or overlap, whichever imposed the more stringent restrictions shall prevail.
(Ord. No. 1911, Art. 2, § E, 4-18-2000)

Sec. 7-24. Interpretation.

In the interpretation and application of this article all provisions shall be:

(1) Considered as minimum requirements;

(2) Liberally construed in favor of the governing body; and

(3) Deemed neither to limit nor repeal any other powers granted under state statutes.
(Ord. No. 1911, Art. 2, § F, 4-18-2000)

Sec. 7-25. Warning and disclaimer of liability.

The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur; flood heights may be increased by man-made or natural causes. This article does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the city or by any officer or employee thereof for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder.
(Ord. No. 1911, Art. 2, § G, 4-18-2000)

Sec. 7-26. Penalties for violation.

Violation of the provisions of this article or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a misdemeanor. Any person who violates this article or fails to comply with any of its

requirements shall, upon conviction thereof, be fined not more than five hundred dollars ($500.00) imprisoned for not more than one hundred eighty (180) days, or both, and in addition, shall pay all costs and expenses involved in the case. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent the City of Auburn, Alabama from taking such other lawful actions as is necessary to prevent or remedy any violation.
(Ord. No. 1911, Art. 2, § H, 4-18-2000)

Secs. 7-27--7-30. Reserved.

DIVISION 2.

ADMINISTRATION

Sec. 7-31. Designation of ordinance administrator.

The city engineer is hereby appointed to administer and implement the provisions of this article.
(Ord. No. 1911, Art. 3, § A, 4-18-2000)

Sec. 7-32. Permit procedures.

Application for a development permit shall be made to the city engineer or his designee on forms furnished by community prior to any development activities in the areas of special flood hazard within the jurisdiction of Auburn, Alabama, and may include, but not be limited to the following: plans in duplicate drawn to scale showing the elevations of the area in question and the nature, location, dimensions, of existing or proposed structures, earthen fill placement, storage of materials, or equipment, and drainage facilities.

Specifically, the following information is required:

(1) *Application stage:*

a. Elevation in relation to mean sea level (or highest adjacent grade) of the regulatory lowest floor including basement of all proposed structures;

b. Elevation in relation to mean sea level to which any nonresidential structure will be floodproofed;

c. Design certification from a registered professional engineer or architect that any proposed nonresidential floodproofed structure will meet the floodproofing criteria of subsections 7-37(2) and 7-39(2);

d. Design certification from a registered professional engineer or architect that any new construction or substantial improvement placed in a coastal high hazard area will meet the criteria of subsection 7-37(1);

e. Description of the extent which any watercourse will be altered or relocated as a result of a proposed development.

(2) *Construction stage:* For all new construction and substantial improvements, the permit holder shall provide to the administrator an as-built certification of the regulatory floor elevation or floodproofing level using appropriate FEMA elevation or floodproofing certificate immediately after the lowest floor or floodproofing is completed. When floodproofing is utilized for nonresidential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.

Any work undertaken prior to submission of these certifications shall be at the permit holder's risk. The city engineer shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being allowed to proceed. Failure to submit certification or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

(Ord. No. 1911, Art. 3, § B, 4-18-2000)

Sec. 7-33. Duties and responsibilities of the administrator.

(a) Duties of the city engineer shall include, but not be limited to:

(1) Review all development permits to assure that the permit requirements of this article have been satisfied.

(2) Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by federal or state law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.

(3) When base flood elevation data or floodway data have not been provided in accordance with section 7-20, then the city engineer shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other sources in order to administer the provisions of division 3 of this article.

(4) Verify and record the actual elevation in relation to mean sea level or highest adjacent grade of the regulatory floor level (including basement) of all new construction or substantially improved structures, in accordance with subsection 7-32(2).

(5) Verify and record the actual elevation in relation to mean sea level to which any new or substantially improved structures have been floodproofed, in accordance with subsections 7-37(2) and 7-38(2).

(6) When floodproofing is utilized for a structure, the city engineer shall obtain certification of design criteria from a registered professional engineer or architect, in accordance with subsection 7-32(1)(c) and subsection 7-37(2) or 7-38(2).

(7) Notify adjacent communities and the Alabama Department of Natural Resources prior to any

alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA), and the Alabama Emergency Management Agency (AEMA).

(8) For any altered or relocated watercourse, submit engineering data/analysis within six (6) months to the FEMA and state to ensure accuracy of community flood maps through the letter of map revision process. Assure flood carrying capacity of any altered or relocated watercourse is maintained.

(9) Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the city engineer shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.

(10) All records pertaining to the provisions of this article shall be maintained in the office of the city engineer and shall be open for public inspection.

(Ord. No. 1911, Art. 3, § C, 4-18-2000)

Secs. 7-34, 7-35. Reserved.

DIVISION 3.

PROVISIONS FOR FLOOD HAZARD REDUCTION

Sec. 7-36. General standards.

In all areas of special flood hazard the following provisions are required:

(1) New construction and substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;

(2) New construction and substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;

(3) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;

(4) Elevated buildings. All new construction or substantial improvements of existing structures that include any fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished or flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters.

a. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:

1. Provide a minimum of two (2) openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;

2. The bottom of all openings shall be no higher than one foot above grade; and

3. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.

b. So as not to violate the "lowest floor" criteria of this article, the unfinished or flood resistent enclosure shall only be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area; and

c. The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.

(5) All heating and air conditioning equipment and components, all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

(6) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces;

(7) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(8) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

(9) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and,

(10) Any alteration, repair, reconstruction or improvement to a structure which is not compliant with the provisions of this article shall be undertaken only if the nonconformity is not furthered, extended or replaced.

(Ord. No. 1911, Art. 4, § A, 4-18-2000)

Sec. 7-37. Specific standards.

In all areas of special flood hazard designated as A1-30, AE, AH, A (with estimated BFE), the following provisions are required:

(1) *New construction and substantial improvements.* Where base flood elevation data are available,

new construction or substantial improvement of any structure or manufactured home shall have the lowest floor, including basement, elevated no lower than one foot above the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of subsection 7-36(4).

(2) *Nonresidential construction.* New construction or substantial improvement of any nonresidential structure located in A1-30, AE or AH zones, may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to one foot above the base flood elevation, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above in subsection 7-33(c).

(3) *Standards for manufactured homes and recreational vehicles.* Where base flood elevation data are available:

a. All manufactured homes placed or substantially improved on:

1. Individual lots or parcels,

2. In new or substantially improved manufactured home parks or subdivisions,

3. In expansions to existing manufactured home parks or subdivisions, or

4. On a site in an existing manufactured home park or subdivision where a manufactured home has incurred "substantial damage" as the result of a flood, must have the lowest floor including basement elevated no lower than one foot above the base flood elevation.

b. Manufactured homes placed or substantially improved in an existing manufactured home park or subdivision may be elevated so that either:

1. The lowest floor of the manufactured home is elevated no lower than one foot above the level of the base flood elevation, or

2. The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than thirty-six (36) inches in height above grade.

c. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement (refer to section 7-36).

d. All recreational vehicles placed on sites must either:

1. Be on the site for fewer than one hundred eighty (180) consecutive days, fully licensed and ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions; or

2. The recreational vehicle must meet all the requirements for "new construction," including the anchoring and elevation requirements of subsection (a) and (c), above.

(4) *Floodway*. Located within areas of special flood hazard established in section 7-20 are areas designated as floodways. A floodway may be an extremely hazardous area due to the velocity of floodwaters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

a. Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development within the regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof.

b. Only if subsection (4)(a) above is satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of division 3 of this article.

(Ord. No. 1911, Art. 4, § B, 4-18-2000)

Sec. 7-38. Building standards for streams without established base flood elevations and/or floodway (A-zones).

Located within the areas of special flood hazard established in section 7-20, where streams exist but where no base flood data have been provided (A-zones), or where base flood data have been provided but a floodway has not been delineated, the following provisions apply:

(1) When base flood elevation data or floodway data have not been provided in accordance with section 7-20, then the city engineer shall obtain, review, and reasonably utilize any scientific or historic base flood elevation and floodway data available from a federal, state, or other source, in order to administer the provisions of division 3 of this article. Only if data are not available from these sources, then the following provisions (2) and (3) shall apply;

(2) No encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty-five (25) feet, whichever is greater, measured from the top of the stream bank, unless certification by a registered professional engineer is provided

demonstrating that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(3) In special flood hazard area without base flood elevation data, new construction and substantial improvements of existing structures shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than three (3) feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of subsection 7-36(4). The city engineer shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

(Ord. No. 1911, Art 4, § C, 4-18-2000)

Sec. 7-39. Standards for areas of shallow flooding (AO zones).

Areas of special flood hazard established in section 7-20 may include designated "AO" shallow flooding areas. These areas have base flood depths of one to three (3) feet above ground, with no clearly defined channel. The following provisions apply:

(1) All new construction and substantial improvements of residential and nonresidential structures shall have the lowest floor, including basement, elevated to the flood depth number specified on the flood insurance rate map (FIRM) above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least three (3) feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of subsection 7-36(4). The city engineer shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.

(2) New construction or the substantial improvement of a nonresidential structure may be floodproofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus two (2) feet, above highest adjacent grade, with wall substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and as required in subsections 7-37(1)(c) and 7-36(2).

(3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

(Ord. No. 1911, Art 4, § D, 4-18-2000)

Sec. 7-40. Standards for subdivision proposals.

(1) All subdivision proposals shall be consistent with the need to minimize flood damage.

(2) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.

(3) Base flood elevation data shall be provided for subdivision proposals and all other proposed development including manufactured home parks and subdivisions greater than fifty (50) lots or five (5) acres, whichever is less.
(Ord. No. 1911, Art 4, § E, 4-18-2000)

Sec. 7-41. Variance procedures.

(a) The board of zoning adjustment (BZA)* as established by the city council shall hear and decide requests for appeals or variance from the requirements of this article.

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* **Cross References:** Zoning ordinance (not printed herein) not affected by adoption of Code, § 1-3.

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(b) The board shall hear and decide appeals when it is alleged an error in any requirement, decision or determination made by the enforcement or administration of this article.

(c) Any person aggrieved by the decision of the BZA may appeal such decision to the circuit court of the county, as provided in the Code of Alabama, 1975.

(d) Variances may be issued for repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum to preserve the historic character and design of the structure.

(e) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this section are met, no reasonable alternative exists, and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

(f) Variances shall not be issued within any designated floodway if any increase in flood levels during the base discharge would result.

(g) In reviewing such requests, the BZA shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this ordinance.

(h) Conditions for variances:

(1) A variance shall be issued only when there is:

a. A finding of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship; and

c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety extraordinary public expense, create nuisance, cause

fraud on or victimization of the public, or conflict with existing local laws or ordinances.

(2) The provisions of this article are minimum standards for flood loss reduction, therefore any deviation from the standards must be weighed carefully. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of an historic structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.

(3) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed lowest floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced lowest floor elevation.

(4) The city engineer shall maintain the records of all appeal actions and report any variances to the federal and state emergency management agencies upon request.

(i) Upon consideration of the factors listed above and the purposes of this article, the BZA may attach such conditions to the granting of variances as it deems necessary to further the purpose of this article.
(Ord. No. 1911, Art 5, 4-18-2000)

Secs. 7-42--7-69. Reserved.

ARTICLE III.

EROSION AND SEDIMENTATION CONTROL*

* **Editors Note:** Ord. No. 2053, §§ 1, 2, adopted May 7, 2002, repealed the former article III, §§ 7-70--7-76, and enacted a new article III, as set out herein. The former article III pertained to similar subject matter and derived from Ord. No. 1812, § 1, adopted Feb. 16, 1999; and Ord. No. 2034, § 2, adopted Dec. 18, 2001.

Sec. 7-70. Introduction.

During the construction process, soil is highly vulnerable to erosion by wind and water. Eroded soil endangers water resources by reducing water quality and causing the siltation of aquatic habitat for fish and other desirable species. Eroded soil also necessitates repair of sewers and ditches and the dredging of lakes. In addition, clearing and grading during construction cause the loss of native vegetation necessary for terrestrial and aquatic habitat.

The purpose of this policy is to safeguard persons, protect property, and prevent damage to the environment in Lee County, Alabama. This policy will also promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any applicable activity that disturbs or breaks the topsoil or results in the movement of earth on land in Lee County. Additionally, this policy reinforces the need for those sites less than one acre in size to be classified as "Permit by Rule" construction sites required to implement and maintain best management practices until land disturbing activities have ceased and permanent stabilization has been achieved.
(Ord. No. 2053, § 2, 5-7-02)

Sec. 7-71. Definitions.

Accidental discharge: A discharge prohibited by this article into the Municipal Separate Storm Sewer System (MS4) or community water that occurs by chance and without planning or consideration prior to occurrence.

ADEM: The Alabama Department of Environmental Management. The State of Alabama's regulatory agency created under Code of Alabama 1975, § 22-22A-1, et seq., responsible for administering and enforcing the storm water laws of the United States of America and the State of Alabama.

Adverse impact: Any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, aesthetics or usefulness, for human or natural uses which are or may be potentially harmful or injurious to human health, welfare, safety or property or to biological productivity, diversity or stability, or which would unreasonably interfere with the enjoyment of life or property.

Agriculture: Activities undertaken on land for the production of plants, crops, and animals that are useful to man.

Applicant: Any person, firm, corporation or governmental agency, that executes the necessary forms to procure approval of an Erosion and Sediment Control (ESC) plan from the authority.

Authority: The definition of authority will be defined by each participating entity, i.e. the City of Auburn, the City of Opelika, Lee County and Auburn University.

Basin: (1) The surface of the area tributary to a stream or lake; and (2) space above or below ground capable of retaining or detaining water or debris.

Best Management Practices (BMP): Activities, prohibitions of practices, maintenance, procedures and management practices, designed to prevent or reduce the pollution of waters to the Municipal Separate Storm Sewer System (MS4). BMP also include treatment requirements, operating procedures, and practices, to control facility site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage and construction sites.

Best Management Practices Plan (BMP plan): A set of drawings and/or other documents submitted by the applicant as a prerequisite to obtaining a permit. The site specific BMP plan contains all of the information and specifications pertaining to that site's BMP.

Buffer: A vegetated zone adjacent to a stream, wetland, or shoreline where development is restricted or controlled to minimize the effects of development.

Clean Water Act (CWA): The Federal Act (33 U.S.C. § 1251 through § 1387) which was formerly referred to as the Federal Water Pollution Control Act and Federal Water Quality Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. § 1251-1387.

Clearing: The removal of trees and brush from the land, not including the ordinary mowing of grass or the maintenance of previously cleared land.

Community water: Any or all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wetlands, wells, and other bodies of natural or artificial surface or subsurface water into which the MS4 outfalls flow.

Contour: A line of equal elevation above a specified datum. The datum most commonly used is mean sea level.

Contour line: A line joining points having or representing equal elevations.

Detention pond: A permanent storm water structure whose primary purpose is to temporarily store storm water runoff and release the stored runoff at controlled rates.

Discharge: The passing of water or other liquid through an opening or along a pipe, conduit, or channel. The rate of flow of water, silt or other mobile substance emerging from the pipe, conduit or channel is usually expressed as cubic feet per second, gallons per minute or million gallons per day.

Drainage: The removal of surface water from a given area either by gravity or by pumping commonly applied to surface water and groundwater.

Drainage area: The area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline; the area of a drainage basin or watershed, expressed in acres, square miles or other units of area.

Engineer: A person currently licensed by the Alabama State Board of Registration for Professional Engineers and Land Surveyors.

Erosion: Process by which land surface is worn away by the action of wind, water, ice or gravity.

Erosion control: The application of measures to reduce erosion of land surfaces.

Erosion and Sediment Control Plan (ESC plan): A site specific drawing or set of drawings prepared by a Qualified Credentialed Professional (QCP) utilizing approved BMP to control erosion and sediment for a development.

Grading: Any act by which soil is cleared, stripped, stockpiled, excavated, scarified, or filled, or any combination thereof.

Illicit connection: Any man-made conveyance connecting an illicit discharge directly to the MS4.

Illicit discharge: Any discharge that is not composed entirely of storm water, except discharges pursuant to an NPDES permit and discharges that are specifically excepted from this policy.

Land disturbing activities: Activities that include any land change, which may result in soil erosion from

water or wind and the movement of sediment to the MS4, including but not limited to the clearing, dredging, grading, excavation, transporting, and filling of land.

Local approval: Written approval from the authority indicating the submitted ESC plan was in compliance with this policy.

Minor extension: An addition to an existing utility pipeline or other utility line in which the land disturbed consists of less than 1,000 linear feet.

Municipal Separate Storm Sewer System (MS4): A system of conveyances to include roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains which are owned and operated by a city, town, county or other public body created by or pursuant to state law and having jurisdiction over storm water.

NPDES: An acronym for National Pollutant Discharge Elimination System. NPDES is the national program of issuing, modifying, revoking, etc., permits under Sections 307, 318, 402, and 405 of the Clean Water Act (CWA).

Outfall: A point source (meaning any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged, but not including return flows from agriculture or agricultural water runoff) at the point of a discharge to waters of the United States of America.

Permit by rule: The approval of a regulated activity without a formal application and approval process, under the condition that the activity is performed in compliance with all applicable rules. Any failure to comply with applicable rules would subject that activity to penalties for violation and normal application and approval requirements.

Permittee: A person, party, government entity and all others who receive a permit to discharge under the NPDES.

Pollutant: Includes but is not limited to, the pollutants specified in Code of Alabama 1975, § 22-22-1(b)(3) and any other effluent characteristics specified in a permit.

Pollutant loading: The amount of pollutant entering the MS4.

Qualified Credentialed Inspection Professional (QCIP): Inspection professional hired by the contractor to monitor BMP and ensure compliance with this policy. The inspector certification program shall be as approved by ADEM.

Qualified Credentialed Professional (QCP): A Certified Professional in Erosion and Sediment Control (CPESC) as determined by the Soil and Water Conservation Society or the International Erosion Control Association (IECA). In addition, other registered or certified professionals such as a professional engineer, landscape architect, registered land surveyor, registered architect, registered geologist, registered forester, registered environmental manager as determined by the National Registry of Environmental Professionals

(NREP), Certified Professional Soil Scientist (CPSS), as determined by the American Registry of Certified Professionals in Agronomy, Crops and Soils (ARCPACS), who can document the necessary education, training and professional certification, registration, or credentials acceptable to the official and can demonstrate proven experience in the field of erosion and sediment control shall be considered a qualified credentialed professional. The QCP must be in good standing with the authority granting the registration. The QCP must be familiar and have expertise with current industry standards for erosion and sediment controls and must be able to inspect and assure that nonstructural BMP or other pollution control devices (silt fences, erosion control fabrics, rock check devices etc.) and erosion control efforts, such as grading, mulching, seeding and growth management, or management strategies have been properly implemented and regularly maintained according to standard practices and permit requirements. A Professional Engineer (PE) registered in the State of Alabama must certify the design and structural practices such as Spill Prevention Control and Counter-measures (SPCC) plan, containment structures, dam construction, etc.

Sediment: Solid material settled from suspension in a liquid that has been transported and deposited from its site of origin by air, water, ice or gravity as a product of erosion and has come to rest on the Earth's surface either above or below a water surface, usually inorganic or organic particles originating from weathering, chemical precipitation or biological activity.

Sedimentation: Process by which eroded material is transported and deposited by action of water, wind, ice and gravity.

Settling basin: A temporary sediment trap or ponding area formed by excavation or construction of embankments where runoff is detained and sediment can settle.

Silviculture: The care and cultivation of forest trees in rural zones, including site preparation, planting, pruning, thinning and harvesting.

Site: Any tract, lot, or parcel of land or combination of contiguous tracts, lots or parcels of land which are in one ownership, and any combination of tracts, lots or parcels of land which are contiguous and are owned by two or more parties and are to be developed as a unit, subdivision or project.

Stabilization: The prevention of soil movement by any of various vegetative and/or structural means.

Storm water: The excess water running off from the surface of a drainage area during and immediately after a period of rain. It is that portion of the rainfall and resulting surface flow that is in excess of that which can be absorbed through the infiltration capacity of the surface of the basin.

Storm water management: The incorporation of a variety of activities and equipment into a plan to address concerns associated with storm water for the purpose of preventing pollution, improving water quality, keeping pollutants out of the runoff, and the implementation of BMP.

Storm water management program: A program which covers the duration of the NPDES permit. The program shall include a comprehensive planning process which involves public participation and where necessary, intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, using management practices, control techniques and system design and engineering methods and other provisions which are appropriate.

Stream: A course of running water usually flowing in a particular direction in a definite channel and discharging into some other course of running water or body of water.

Structural controls: Measures incorporated into existing storm water drainage systems or newly constructed systems to prevent or to minimize the discharge of pollutants for the purpose of maintaining and/or improving water quantity and quality management, quantitative control by a system of vegetative and structural measures that control the increased volume and rate of surface runoff caused by man-made changes to the land; qualitative control by a system of vegetative, structural and other measures that reduce or eliminate pollutants that might otherwise be carried by surface runoff.

Turbidity: A condition in water or wastewater caused by the presence of suspended matter, resulting in the scattering and absorption of light rays. A measure of fine suspended matter in liquids.

USEPA: United States Environmental Protection Agency.

Utility: A business or service which is engaged in regularly supplying the public with some commodity or service which is of public consequence and need such as electricity, gas, water, telephone service and telecommunications service.

Variance: The modification of the minimum storm water management requirements in situations in which exceptional circumstances, applicable to the site with respect to which the variance is requested, exist so that strict adherence to the provisions of this policy would result in unnecessary hardship and the granting of such modification would not result in a condition contrary to the intent of this policy.

Vegetative control measures: The establishment of vegetative ground cover that shields the soil surface from raindrop impact and the scouring effects of overland storm water flow.

Watercourse: A defined channel with bed and banks within which water flows, either continuously or in season. A watercourse is continuous in the direction of flow and may extend laterally beyond the definite banks to include overflow channels contiguous to the ordinary channel. The term does not include artificial channels such as canals and drains, except natural channels trained or restrained by the works of man. Neither does it include depressions or swales through which surface or errant waters pass.

2-Year rainfall event: The rainfall event having a fifty (50) per cent chance of being equaled or exceeded in any given year.

5-Year rainfall event: The rainfall event having a fifty (50) per cent chance of being equaled or exceeded in any given year.

10-Year rainfall event: The rainfall event having a ten (10) per cent chance of being equaled or exceeded in any given year (i.e. ten-year, one-hour rainfall event is approximately 2.75 inches).

25-Year rainfall event: The rainfall event having a four (4) per cent chance of being equaled or exceeded in any given year.

100-Year rainfall event: The rainfall event having a one per cent chance of being equaled or exceeded in any given year (i.e. 100-year, one-hour rainfall event is approximately 3.9 inches).

100-Year flood elevation: The boundary delineated by the crest elevations of the 100-year flood.
(Ord. No. 2053, § 2, 5-7-02; Ord. No. 2258, § 1, 12-7-04; Ord. No. 2296, § 1, 5-17-05)

Sec. 7-72. Administration.

The authority shall enforce the provisions of this policy. Whenever "authority" is used in this policy it shall include the authorized agent of the entity. For example, the City of Auburn may designate the public works department to act as the authority on behalf of the City of Auburn.
(Ord. No. 2053, § 2, 5-7-02)

Sec. 7-73. Permits.

(a) Prior to any construction, land disturbing activities, or local approvals, any person disturbing greater than or equal to one acre shall apply for an NPDES permit.

(b) Permit by rule status will be assigned to those non-excluded land disturbing activities less than one acre in size. These sites, although not required to obtain an NPDES permit or submit for approval an Erosion and Sediment Control (ESC) Plan, are still required to implement and maintain best management practices at the site and are subject to all provisions of this policy.

(c) The authority may require the applicant to post a bond in the form of a government security, cash, irrevocable letter of credit, or any combination thereof up to but not exceeding three thousand dollars ($3,000.00) per acre of the proposed land disturbing activity. If the applicant fails to comply with the conditions of his NPDES permit or the requirements as outlined in the approved ESC plan, the bond may be called by the authority and used to bring the site into compliance.

(d) The following land disturbing activities are excluded from the requirements of this policy:

(1) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources. Immediately upon completion of emergency activity the contractor shall install all control measures and initiate restoration/cleanup activities as required by this policy.

(2) Any land change on property about which the owner of the property has submitted information and proved to the satisfaction of the authority that such property does not drain to the MS4.

(3) Agriculture.

(4) Silviculture.

(5) Such minor land disturbing activities as home gardens, landscaping on individual residential lots (excluding landscaping performed by, on behalf of, a developer or builder, who builds a house on any such lot), home repairs, home maintenance work, minor additions to houses, the construction, maintenance or repair of accessory structures and other related activities which

result in minor soil erosion.

(6) Minor land disturbing activities such as individual connections for utility services and sewer services for single or two-family residences, minor grading for driveways, yard areas and sidewalks, excluding grading done by, or on behalf of, a developer or builder in connection with the construction of a house.

(7) Minor maintenance, minor repair, and minor extension of an existing underground public utility, except sewer lines; provided, that the utility company which owns such lines has received approval from the authority for such maintenance, repair and extension; and provided further, that any utility company making a minor extension in connection with which the land disturbed consists of less than 1,000 linear feet must give written notice of such extension prior to the commencement of such minor extension.

(8) The construction, repair or rebuilding of railroad tracks.

(9) Minor subsurface exploratory excavations under the direction of soils engineers, engineering geologists, or soil scientists.

(10) The opening of individual burial sites in property which has been approved for such use by all necessary governmental authorities.

(11) The construction of water wells or environmental monitoring wells.

Although not required to submit an ESC plan for review and approval, persons engaged in activities (2) through (11) shall remain responsible for otherwise conducting such activities in accordance with the provisions of this policy and any other applicable regulation, including the proper control of sediment and runoff to the MS4.

If monitoring and/or complaints indicate a storm water pollution problem, the exclusion can be revoked and a stop-work order issued until an ESC plan is submitted to the authority for approval.
(Ord. No. 2053, § 2, 5-7-02)

Sec. 7-74. Review and approval.

(a) Before the commencement of any land disturbing activity that affects one acre or more, the owner of the land on which such activity shall be conducted, or their duly authorized agent, shall file with the authority copies of the ADEM permit and obtain approval of the site-specific ESC plan.

(b) The authority must either approve or disapprove the ESC plan within twenty-five (25) working days of the day it is filed with the authority. If the ESC plan is disapproved, the authority must inform the applicant, in writing, of the reason for its disapproval. If the applicant revises the ESC plan or submits to the authority additional documents or information in connection with the ESC plan, the authority shall respond, in writing, within ten (10) working days of the day such revised ESC plan or additional documents or information are submitted to the authority. The land disturbing activity may not be commenced prior to the issuance of the approval by the authority. The issuance of the approval shall not excuse the owner from the need to obtain other

required state and local permits or licenses.
(Ord. No. 2053, § 2, 5-7-02; Ord. No. 2258, § 2, 12-7-04)

Sec. 7-75. Erosion and sediment control plan.

(a) The erosion and sediment control plan filed with the authority shall include:

(1) A natural resources map identifying soils, forest cover, water bodies and other natural resources to be protected. This map should be at a scale no smaller than 1"=100'. Specific map requirements shall be stipulated by the authority.

(2) A sequence of construction of the development site, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.

(3) All erosion and sediment control measures necessary to meet the objectives of this policy are required throughout all phases of construction and after completion of development of the site. Depending upon the complexity of the project, the drafting of intermediate plans may be required at the close of each season.

(4) Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.

(5) Provisions for the maintenance of ESC measures including easements.

(6) A site drainage plan along with calculations supporting the design shall be submitted for all permanent structural BMP (i.e. detention ponds, outlet structures, etc.). The plan and calculations shall be certified by a registered professional engineer licensed by the State of Alabama.

(7) Inspection schedule and reporting requirements as required by ADEM permit or the authority.

(8) Any other pertinent information the authority deems as necessary to complete its review.

(b) Any proposed modification to the erosion and sediment control plan shall be communicated within twenty-four (24) hours or next business day to the authority at which time the authority will determine if a full re-submittal is required or if the modification can be handled as a minor field change.
(Ord. No. 2053, § 2, 5-7-02)

Sec. 7-76. Erosion and sediment control criteria.

(a) Grading, erosion control practices, sediment control practices, and waterway crossings shall meet the design criteria set forth in the most recent version of the BMP manual(s) approved by ADEM, and shall be adequate to prevent transportation of sediment from the site to the satisfaction of the authority and in

accordance with the authority's standard details and specification. Cut and fill slopes shall be no steeper than 3:1, except as approved by the authority to meet other community or environmental objectives.

(b) Clearing and grading of natural resources, such as forests and wetlands, shall not be permitted, except when in compliance with all other federal, state, and local regulations. Clearing techniques that retain natural vegetation and drainage patterns, as described in the BMP manual(s), shall be used to the satisfaction of the authority.

(c) Buffers--Buffer zones shall be a minimum of twenty-five (25) feet perpendicular from each side of the stream bank, creek, or waterway under "bank-full conditions". Buffers are applicable to any perennial or intermittent stream as indicated on the United States Geological Survey 7.5 Minute Series topographic map (latest revision) and all water bodies including lakes, ponds, and wetlands. Any area within this buffer shall not be cleared or graded unless written authorization is obtained from the authority. Utilization or reinforcement of existing vegetation is preferred. However, where improvements are required; sodding, plugging, use of stockpiled vegetation or seeding is acceptable.

(d) Clearing, except that necessary to establish sediment control devices, shall not begin until all sediment control devices have been installed and have been stabilized. Phasing shall be required on all sites disturbing greater than ten (10) acres, with the size of each phase to be established at plan review and as approved by the authority. All areas that have been cleared of significant portions of its vegetative cover and will remain so for fifteen (15) days or longer without appreciable construction activity shall be seeded and mulched within five (5) days of being disturbed.

(e) Erosion control requirements shall include but are not limited to the following:

(1) Soil stabilization shall be completed within five (5) days of initiation of land disturbing activities.

(2) If seeding or another vegetative erosion control method is used, germination shall be evident within two (2) weeks or the authority may require the site to be reseeded or a nonvegetative option employed. Irrigation may be required to establish vegetative cover.

(3) Special techniques that meet the design criteria outlined in the BMP Manual(s) on steep slopes or in drainage ways shall be used to ensure stabilization.

(4) Soil stockpiles must be stabilized or covered at the end of each workday.

(5) Techniques to prevent the blowing of dust or sediment from the site.

(6) Techniques that divert upland runoff around disturbed slopes.

(f) Sediment control requirements shall include but are not limited to the following:

(1) Settling basins, sediment traps, or perimeter controls.

(2) Settling basins that are designed in a manner that allows adaptation to provide long-term storm

water management, if required by the authority.

(3) Protection for adjacent properties by the use of a vegetated buffer strip in combination with perimeter controls.

(g) Waterway and watercourse protection requirements shall include but are not limited to the following:

(1) The installation of a temporary watercourse crossing. If a watercourse will be crossed regularly during construction the authority may require a temporary crossing to be constructed in order to prevent streambed damage and or erosion. Watercourse crossings shall be constructed to allow movement of aquatic life.

(2) Stabilization of the watercourse channel before, during, and after any inchannel work.

(3) All on-site storm water conveyance channels designed according to the criteria outlined in the BMP manual(s).

(4) Stabilization adequate to prevent erosion located at the outlets of all pipes and paved channels.

(h) Construction site access requirements shall include but are not limited to the following:

(1) Temporary construction access, as defined by the authority, at all sites.

(2) Other measures required by the authority in order to ensure that sediment is not tracked onto public streets by construction vehicles or washed into storm drains.

(i) Post development runoff rate. Except as otherwise provided by other regulations the rate of storm water runoff from any development over one acre resulting from the two-year, five-year, ten-year or twenty-five-year rainfall occurring within the space of one hour shall not exceed the predevelopment storm water runoff rate for an equivalent event.

(j) Building floor elevations. All building floor elevations, garages and carports shall be one foot or higher above the expected 100-year flood elevation. Ground elevation ten (10) feet from a building shall be six (6) inches or more below floor elevation and slope away from the building. Impervious surfaces should have a slope of one-half of one (0.5) per cent or greater and pervious surfaces of two (2) per cent or greater.
(Ord. No. 2053, § 2, 5-7-02; Ord. No. 2258, § 3, 12-7-04)

Sec. 7-77. Inspection.

(a) Plans for grading, stripping, excavating, and filling work bearing the stamp of approval of the authority shall be maintained at the site during the progress of the work.

(b) The permittee shall notify the authority at least two (2) working days before the following:

(1) Start of construction;

(2) Installation of sediment and erosion measures;

(3) Completion of site clearing;

(4) Completion of rough grading;

(5) Completion of final grading;

(6) Close of the construction season; and

(7) Completion of final landscaping.

(c) The permittee or his/her agent shall make regular inspections of all control measures in accordance with the inspection schedule outlined on the approved ESC plan(s). The Qualified Credentialed Inspection Program will be recognized by the authority. The purpose of such inspections will be to determine the overall effectiveness of the ESC plan and the need for additional control measures. All inspections shall be documented in written form and submitted to the authority at the time interval specified in the approved ESC plan.

(d) The authority or its designated agent shall retain the right to enter the property of the applicant as deemed necessary to address any complaint and to ensure the validity of the reports filed under item (c).

(e) If the city engineer or his authorized representative has been refused access to any part of the premises, and he/she is able to demonstrate probable cause to believe that there may be a violation of this policy, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this policy or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city engineer or his authorized representative may seek issuance of a search warrant from any court of competent jurisdiction.

(f) All detention ponds approved by the authority will have complete design data on file with the authority and will be subject to at least an annual inspection to ensure that they are functioning to their original design criteria. Specific items to be inspected and approved by the authority shall include, but are not limited to, the following: vegetative cover, sediment, debris, fencing (if applicable), outlet structure and inlets. Any defects discovered by the authority during such inspection shall be furnished to the owner in writing and the owner shall have fifteen (15) business days from the delivery of said notice to perform the maintenance and any corrective action specified by the authority. The authority may, at its discretion, allow the owner additional time as the authority deems appropriate for the corrective work.
(Ord. No. 2053, § 2, 5-7-02; Ord. No. 2191, § 1, 1-20-04)

Sec. 7-78. Enforcement.

(a) *Stop-work order; revocation of local approvals.* In the event that any person holding a permit or approval pursuant to this policy violates the terms of the permit or implements site development in such a manner as to materially adversely affect the health, welfare, environment, 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 authority may suspend or revoke the said approval.

(b) *Violation and penalties.* No person shall construct, enlarge, alter, repair, or maintain any grading, excavation, or fill, or cause the same to be done, contrary to or in violation of any terms of this policy. Any person violating any of the provisions herein shall be deemed guilty of a misdemeanor and each day during which any violation of any of the provisions herein is committed, continued, or permitted, shall constitute a separate offense. Upon conviction of any such violation, such person, partnership, or corporation shall be punished by a fine of not more than five hundred dollars ($500.00) for each offense, or imprisonment in the city jail of not more than six (6) months, or both such fine and imprisonment, at the discretion of the municipal judge trying the case. In addition to any other penalty authorized by this section, any person, partnership, or corporation convicted of violating any of the provisions herein shall be required to bear the expense of such restoration.

(c) *Detection of illicit connections, improper disposal and/or discharges.* The authority shall take appropriate steps to detect and eliminate illicit connections and eliminate improper disposal and/or discharge from any property or site, including the required dry-weather and wet-weather programs to screen illicit connections and improper discharges and identify their source or sources from land disturbing activities.

(d) The city manager or his representative shall issue citation to appear before the municipal judge on charges of violation of these policies. A citation shall be issued to the owner of the property or development, the permittee, the person responsible for performing the work, or in cases of a utility, the owner of the utility. In most cases citation will be issued only after the responsible party has been given the opportunity to rectify the situation. In cases where health or safety is in peril, citation will be issued immediately.
(Ord. No. 2053, § 2, 5-7-02; Ord. No. 2258, § 5, 12-7-04)

Sec. 7-79. Variances and appeals.

The authority may grant a variance from the requirements of this policy if there exist exceptional circumstances applicable to a site such that strict adherence to the provisions of this policy will result in unintended consequences. The developer shall prepare a written request for a variance stating the specific variance sought and the reasons, with supporting data, for granting such variance. This request shall include descriptions, drawings, calculations, and any other information necessary to evaluate the proposed variance. The authority shall review the submitted material and make a determination within ten (10) working days. There shall be no appeal process for the variance request. The authority shall be the final arbiter of the variance request.
(Ord. No. 2053, § 2, 5-7-02)

Sec. 7-80. Liability.

Neither the approval of an ESC plan under the provisions of this policy nor the compliance with the provisions under this policy shall relieve any person of the responsibility for damage to any person or property otherwise imposed by law, nor shall it impose any liability upon the authority for damage to any person or property.
(Ord. No. 2053, § 2, 5-7-02)

Secs. 7-81--7-100. Reserved.

ARTICLE IV.

ILLICIT DISCHARGE

Sec. 7-101. Intent.

This article is enacted to preserve, protect and promote the health, safety and welfare of the citizens of Auburn, Alabama, through the reduction, control and prevention of the discharge of pollutants to the city municipal separate storm sewer system (MS4). It is the expressed intent of this document to provide for and promote compliance by the city with federal and state laws governing the discharge of pollutants from the MS4 and to provide for and promote compliance with an NPDES permit issued to the city for such discharge. The city does not intend for this article to conflict with any existing federal or state law.
(Ord. No. 2192, § I, 1-20-04)

Sec. 7-102. Definitions.

For purposes of this article, the following terms are defined as hereinafter set forth:

ADEM shall mean the Alabama Department of Environmental Management.

BMPs or *best management practices* shall mean schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants to the MS4. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

City shall mean the City of Auburn, Alabama, a municipal corporation organized under the laws of the State of Alabama.

Clean Water Act shall mean the Federal Clean Water Act, 33 U.S.C. § 1251 et seq., and regulations promulgated thereunder.

Commercial area shall mean any facility associated with commercial activity which is not subject to its own NPDES permit or an ADEM general storm water permit.

Discharge or *discharge of a pollutant* shall mean any addition of any "pollutant" to the MS4 This term does not include an addition of pollutants by any "indirect discharger" or from any source specifically excluded from the definition of "point source."

Discharge monitoring report or *DMR* shall mean the EPA or ADEM uniform form for the reporting of self-monitoring results by NPDES permittees.

EPA shall mean the Federal Environmental Protection Agency.

Good housekeeping shall mean the use of practical, cost-effective methods to maintain a clean and

orderly facility and keep contaminants out of separate storm sewers. It includes activities such as sweeping/trash collection, establishing protocols to reduce the possibility of mishandling chemicals or equipment, and the proper training of employees.

High-risk facility shall mean municipal landfills; other treatment, storage, or disposal facilities for municipal waste (e.g., transfer stations, incinerators, etc.); and hazardous waste treatment, storage, disposal and recovery facilities.

Holder shall mean a person to whom a BMP plan approval has been issued.

Illicit discharge shall mean any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges from fire fighting and emergency management activities.

Indirect discharger shall mean a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Industrial facility shall mean any facility associated with industrial activity.

Municipal separate storm sewer system (MS4) shall mean a conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), which is owned or operated by the city, designed or used for collecting or conveying storm water, and is neither a POTW nor a combined sewer.

NPDES or *national pollutant discharge elimination system* shall mean the national permitting program implemented under the "Clean Water Act."

Person shall mean any individual, partnership, syndicate, group, firm, company, association, trust, corporation, business, or any entity recognized by law, or any combination of the foregoing.

Person responsible or *responsible person* shall mean a person who has or represents having: (1) an ownership interest in or financial or operational control of a source or potential source of a discharge or a discharge regulated by this article; (2) possession or control of a source or potential source of a discharge regulated by this article who directly or indirectly allowed, either by act or omission, a discharge regulated by this article; or (3) benefited from a source or potential source of a discharge or a discharge regulated by this article. There may be one or more "persons responsible" or "responsible persons."

Point source shall mean any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, domestic, and agricultural waste discharged into water.

Publicly owned treatment works or *POTW* shall mean any device or system used in the treatment of municipal sewage or industrial wastes of a liquid nature which is owned by the city. This definition includes sewers, pipes or other conveyances only if they convey wastewater to a POTW providing treatment.

Significant materials shall include, but not be limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Storm water shall mean storm water runoff, snowmelt runoff and surface runoff and drainage.

Storm water discharge associated with industrial activity shall have the same meaning as in the "Clean Water Act" and regulations promulgated there under.

Storm water discharge from sites of industrial activity shall mean storm water discharges from industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) (42 U.S.C. § 11023(b)) or that have significant materials, raw materials, material handling equipment or activities, intermediate products or industrial machinery exposed to storm water, except for those industrial facilities which possess their own NPDES permit or are subject to an ADEM general storm water permit. In addition, this definition also shall include industrial facilities that the city engineer determines are contributing a substantial pollutant loading to the MS4.

To the extent practicable when used in reference to terms and conditions of NPDES permits (other than the NPDES permit issued to the city) and procedures and methods established by federal regulation, shall mean that the city engineer shall defer to these terms, conditions, procedures, and methods so long as the city's compliance with its own NPDES permit, or federal or state law is not jeopardized in any manner.

Water Pollution Control Act shall mean the Alabama Water Pollution Control Act of 1972, and regulations promulgated there under.
(Ord. No. 2192, § II, 1-20-04)

Sec. 7-103. Discharge prohibitions.

(a) The illicit discharge of pollutants to the MS4 is prohibited.

(b) The discharge of pollutants to the MS4 by discharging storm water associated with industrial activity is prohibited except as authorized by a NPDES permit. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this article which relate to such discharge.

(c) The spilling, dumping, or disposal of materials other than storm water to the MS4 is prohibited.
(Ord. No. 2192, § III, 1-20-04)

Sec. 7-104. Exceptions to prohibition.

The following discharges are specifically excluded from the prohibitions included in section 7-103:

(a) Water line flushing (including fire hydrant testing).

(b) Landscape irrigation.

(c) Diverted stream flows.

(d) Rising ground waters.

(e) Uncontaminated ground water infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connection and foundation drains, from the ground through such means as defective pipes, sewer service connections, or manholes. Infiltration does not include, and is distinguished from, inflow.)

(f) Uncontaminated pumped ground water.

(g) Discharges from potable water sources.

(h) Foundation drains.

(i) Air conditioning condensation.

(j) Irrigation water.

(k) Springs.

(l) Water from crawl space pumps.

(m) Footing drains.

(n) Lawn watering.

(o) Individual residential car washing.

(p) Flows from riparian habitats and wetlands.

(q) Swimming pool discharges.

(r) Street wash water.

(s) Discharges or flows from fire fighting activities.

(Ord. No. 2192, § IV, 1-20-04)

Sec. 7-105. Inspection and monitoring.

(a) The city engineer or his authorized representative shall be permitted to enter and inspect facilities subject to regulation under this article as often as may be necessary to determine compliance with this article. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access.

(b) Facility operators shall allow the city engineer or his authorized representative ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(c) The city engineer or his authorized representative shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the city engineer to conduct monitoring and/or sampling of the facility's storm water discharge.

(d) The city engineer or his authorized representative has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.

(e) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the city engineer or his authorized representative and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(f) Unreasonable delays in allowing the city engineer or his authorized representative access to a facility is a violation this article. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this article.

(g) If the city engineer or his authorized representative has been refused access to any part of the premises from which storm water is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city engineer or his authorized representative may seek issuance of a search warrant from any court of competent jurisdiction. (Ord. No. 2192, § V, 1-20-04)

Sec. 7-106. Best management practices (BMPs).

All industrial facilities and high risk facilities are required to implement, at their own expense, structural and nonstructural BMPs, as appropriate, to prevent the discharge of pollutants to the MS4. Further, the city engineer may require any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, to implement, at said person's expense, additional structural and non-structural BMPs to prevent the discharge of pollutants to the MS4. To the extent practicable, the city engineer shall recognize that storage and handling of significant materials, material handling equipment or activities, intermediate products

or industrial machinery in such a manner that they are not exposed to storm water is an effective BMP. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed in compliance with the provisions of this section.
(Ord. No. 2192, § VI, 1-20-04)

Sec. 7-107. Good housekeeping.

Commercial areas and industrial facilities shall employ good housekeeping practices to prevent debris such as paper, bottles, cans, plastic, etc. from entering the MS4 from areas such as parking lots, loading zones, sidewalks, trash cans and dumpster sites. It shall be unlawful for any person to discharge chemicals, waste products or any pollutant to the parking lot or grounds of a commercial area or an industrial facility.
(Ord. No. 2192, § VII, 1-20-04)

Sec. 7-108. BMP plan.

Whenever storm water will be discharged into the MS4 from a site of industrial activity or a high risk facility, the person responsible for such site, except as such site, may be expressly excepted from coverage of this article, shall develop and implement a BMP plan sufficient enough to control discharges from his facility. If requested by the city engineer, such BMP plan must be provided for review within ten (10) days of the request.
(Ord. No. 2192, § VIII, 1-20-04)

Sec. 7-109. Modifications to BMP plan.

A BMP plan may be modified in order to comply with any federal, state or local law, regulation, order or standard, or when, in the opinion of the city engineer, a modification is necessary to accurately control changes in the character or amount of pollutants of storm water discharged into the MS4, or any other applicable condition. Deadlines for compliance with the modified requirements shall be determined on a case-specific basis.
(Ord. No. 2192, § IX, 1-20-04)

Sec. 7-110. Revocation of a BMP plan.

(a) The city engineer may revoke authorization to discharge under a BMP plan, if he determines that one or more of the following conditions exist:

(1) The holder provided false information;

(2) The holder provided false information with respect to any monitoring, record keeping, or reporting requirements;

(3) The holder is convicted of violating the provisions of this article;

(4) Any term or condition imposed under a BMP plan was not satisfied;

(5) Any federal, state or municipal statute, law, ordinance, regulation, order or standard is being

violated by the holder;

(6) The holder has refused entry to the city engineer or his representative for purposes of inspection or monitoring; or

(7) For any other reason if, in the judgment of the city engineer, the continuance of a BMP plan is not consistent with the purposes of this article.

(b) Whenever the city engineer determines that grounds exist for revocation of a BMP plan, he shall serve upon the holder a written notice of proposed revocation, stating the facts or conduct which warrant revocation of the BMP plan approval, and providing the holder with an opportunity to demonstrate or achieve compliance with all lawful requirements. Within ten (10) days of the date of the notice of proposed revocation, the holder must provide written or demonstrative evidence of satisfactory compliance or a written plan for achieving satisfactory compliance.

(c) If the holder fails to respond to a notice of proposed revocation or fails to provide adequate evidence of satisfactory compliance or an adequate written plan for achieving satisfactory compliance, the city engineer shall deliver, by certified mail/return receipt requested, a written notice of revocation to the holder. Said notice of revocation shall be effective immediately and shall include a statement of the reasons for revocation and the appeal procedure.
(Ord. No. 2192, § X, 1-20-04)

Sec. 7-111. Emergency suspension of BMP plan.

(a) Notwithstanding any other provision of this article, the city engineer may, without notice, suspend a BMP plan by delivery to the holder, by hand delivery, certified mail/return receipt requested, or the posting in at least three (3) conspicuous places at the site subject to the BMP plan, of a notice of emergency suspension of BMP plan. A BMP plan will be suspended under this section only when such suspension is necessary, in the opinion of the city engineer, to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of persons or to the environment, or causes interference with the MS4 or causes the city to violate any condition of its NPDES permit. Said notice of emergency suspension of BMP plan shall state the grounds for suspension, the corrective action necessary for reinstatement of the BMP plan.

(b) Any holder notified of suspension under this section shall immediately stop the activity generating the discharge noted in the notice of emergency suspension. The city engineer shall reinstate resumption of activities upon proof of the elimination of the endangering discharge or circumstances.

(c) Emergency suspension of a BMP plan approval may be appealed in accordance with the provisions of section 7-112.
(Ord. No. 2192, § XI, 1-20-04)

Sec. 7-112. Appeal.

A person denied discharge under an existing BMP plan (hereinafter "appellant") may appeal the decision of the city engineer. Appellant may commence said appeal by filing a written notice of appeal, specifying the

grounds for said appeal, with the city manager within fifteen (15) days following receipt of the city engineer's notice of denial, notice of revocation, or notice of suspension. At the hearing, the city engineer shall state his grounds for denying, revoking, or suspending discharge and shall provide any evidence supporting such action. Evidence on appellant's behalf may be presented at such hearing. The decision of the hearing shall (a) sustain the decision of the city engineer, or (b) reverse or vary the decision of the city engineer, specifying the manner in which any variations shall be made, the conditions upon which they are to be made and the reasons therefor.
(Ord. No. 2192, § XII, 1-20-04)

Sec. 7-113. Sections 7-107, 7-108, 7-109, 7-110, 7-111, and 7-112, inapplicable to discharges or activities authorized by a NPDES permit.

The provisions of sections 7-107, 7-108, 7-110, 7-111 and 7-112 shall not apply to a discharge or activity specifically authorized by a NPDES permit.
(Ord. No. 2192, § XIII, 1-20-04)

Sec. 7-114. Noncompliance.

It shall be unlawful to refuse or fail to comply with the terms or conditions of a BMP plan approval issued under this article.
(Ord. No. 2192, § XIV, 1-20-04)

Sec. 7-115. False information and tampering.

(a) It shall be unlawful for any person to provide false information to the city engineer or anyone working under the city engineer's supervision when such person knows or has reason to know that the information provided is false, whether such information is required by this article, any BMP plan approval granted under this article, or any inspection, record keeping or monitoring requirement carried out or imposed under this article.

(b) It shall be unlawful for any person to falsify, tamper with, or knowingly render inaccurate any monitoring device or method required under this article or a BMP plan approval issued hereunder.
(Ord. No. 2192, § XV, 1-20-04)

Sec. 7-116. Method of enforcement.

The city engineer or any person acting under his supervision is authorized to issue citations to appear in municipal court to answer charges of violation of any of the provisions of this article. In no event shall any enforcement action under this article be taken for an alleged violation of this article if any of the following conditions exist:

(a) ADEM has issued a notice of violation with respect to the same violation and is proceeding with enforcement action;

(b) ADEM has issued an administrative order with respect to the same alleged violation and is proceeding with enforcement action; or

(c) ADEM has commenced and is proceeding with enforcement action or has completed any other type of administrative or civil action with respect to the same alleged violation.

However, enforcement action under this article may be pursued for continued or continuing violations, and each day that a violation of this article continues shall be considered a separate violation.
(Ord. No. 2192, § XVI, 1-20-04)

Sec. 7-117. Penalties.

Any person who violates any provision of this article or any provision of a BMP plan issued under this article shall be guilty of a violation and, upon conviction, shall be punished as provided by law, including those penalties set forth in Ala. Code § 11-45-9 as adopted by section 1-9 of this Code.
(Ord. No. 2192, § XVII, 1-20-04)

Sec. 7-118. Existing authorities.

Nothing in this article shall be construed to limit the existing authority of the city to enforce rules and regulations regarding:

(a) Charges, limits and restrictions on the discharge of waste into the sanitary sewerage system of the City of Auburn, Alabama;

(b) Requirements of the Storm Water Management Manual of the City of Auburn, Alabama;

(c) Health or sanitation ordinances of the City of Auburn, Alabama enforced by the Lee County Health Department; or

(d) Ordinances governing the sanitation of premises where animals are kept.

This article shall be cumulative to and in furtherance of any statutory, common law, or other legal right, duty, power, or authority possessed by the city. Compliance with this article or a BMP plan issued hereunder shall not excuse any person from compliance with any other federal, state or local law, ordinance, regulation, rule or order.
(Ord. No. 2192, § XVIII, 1-20-04)

APPENDIX C

EROSION AND SEDIMENT CONTROL INSPECTION AND ENFORCEMENT PROGRAM

City of Auburn

CITY OF AUBURN - EROSION AND SEDIMENT CONTROL INSPECTION AND ENFORCEMENT PROGRAM

July 2010

Executive Summary

The purpose of this document is to provide a brief overview of the Federal Phase II stormwater regulations which govern the Stormwater Management Program for the City of Auburn, as well as a detailed summary of the Erosion and Sediment Control Inspection and Enforcement Program which is part of the overall Stormwater Management Program for the City of Auburn.

The Alabama Department of Environmental Management (ADEM) has the predominant role and responsibility for regulating erosion and sediment control practices in Alabama. ADEM regulates construction activities on all sites one (1) acre or greater in size through a construction site erosion and sediment control permitting, inspection and enforcement program. ADEM is the primary regulatory entity responsible for the protection and preservation of water quality in Alabama. The City of Auburn has not been delegated any authority by the State or Federal government to directly develop water quality standards for construction site stormwater. The City of Auburn's Erosion and Sediment Control Inspection and Enforcement Program was established in 2003 with the adoption of the Erosion and Sediment Control Ordinance discussed in Section 2.1 of this document. The City of Auburn's Erosion and Sediment Control Inspection and Enforcement Program is intended to support ADEM construction site erosion and sediment control program in that potential issues can often be identified by the City and resolved prior to any significant water quality impacts occurring. The City of Auburn's Erosion and Sediment Control Inspection and Enforcement Program does not supersede

ADEM's construction site erosion and sediment control program and is intended solely to support ADEM's program. In addition, the City of Auburn's Erosion and Sediment Control Inspection and Enforcement Program does not regulate offsite discharges into Waters of the U.S. Once sediment has been released from a construction site, this becomes a violation of the Clean Water Act and ADEM/EPA enforcement procedures then govern. Post-storm event inspections conducted by the City ensure that failed best management practices (BMPs) are identified and corrected in a prompt manner. Potential water quality violations are required to be self-reported by the construction site permittee to ADEM through a Notice of Non-Compliance. ADEM can use this Notice of Non-Compliance and follow-up response actions to determine whether any further inspections or enforcement are warranted by ADEM. City of Auburn enforcement, fines, etc. are based on the failure to install and properly maintain BMPs.

1.0 Background

- The City of Auburn is categorized as a Phase II Stormwater municipality based on the Federal Phase II Stormwater Program regulations.
- The Phase II regulations were an extension of the Phase I Stormwater Program that was initiated by Congress in 1992. The Phase I regulations required large communities with populations greater than 100,000 to apply for individual stormwater permits. In Alabama, there were 5 entities governed by the Phase I regulations: Birmingham/Jefferson County, Huntsville/Madison County, City of Montgomery, City of Mobile and Baldwin County.
- The Phase II regulations were published in December 1999 and became effective in March 2003. Phase II Municipal Separate Storm Sewer Systems (MS4s) are defined as: *"Systems located in "urbanized areas" as defined by the U.S. Bureau of the Census. Has a population of at least 50,000 and an overall population density of at least 1,000 people per square mile."* The City of Auburn is governed by the Phase II regulations due to the overall population of Auburn, Opelika and Lee County.
- The City of Auburn applied for and received a National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Permit in March 2003. The original Permit was issued for a 5-year time period ending in March 2008. In August 2007, the City of Auburn applied for a new Phase II Permit. At the direction of the Alabama Department of Environmental Management (ADEM), the City continues to operate under the original 2003 Permit until ADEM issues the new NPDES Phase II Permit. On September 10, 2009, ADEM released the proposed NPDES Phase II Stormwater Permit to MS4 permittees in draft form for review and comment. Formal comments provided by the permittees were reviewed and addressed in the draft Phase II Stormwater General Permit for MS4s that was released for public comment on January 14, 2010. A second,

revised draft Permit was issued for public comment in May 2010. It is anticipated that the new Phase II Permit will be finalized in September 2010.

- The United States Environmental Protection Agency (USEPA) outlined six (6) "minimum control measures" that all Phase II entities must address when establishing individual stormwater programs. The six (6) minimum control measures are:
    - Public Education and Outreach
    - Public Involvement and Participation
    - Illicit Discharge Detection and Elimination
    - Construction Site Stormwater Runoff Control (i.e. Erosion and Sediment Control)
    - Post-Construction Stormwater Management
    - Pollution Prevention and Good Housekeeping
- The Phase II regulations are intended to guide local communities in the development of strategies to educate the public, to prepare local legislation, and to inspect stormwater collection and conveyance systems to promote the protection and preservation of water quality. ADEM maintains jurisdiction over water quality regulations in Alabama by regulating activities from which pollutants could be discharged into Waters of the State.

2.0 Erosion and Sediment Control Inspection and Enforcement Program

2.1 Roles and Responsibilities

- According to Appendix D of the Alabama Notice of Intent (ALNOI) General Permit for Phase II Small MS4s, *"ADEM Administrative Code Ch. 335-6-12 implements a Statewide construction stormwater regulatory program consistent with NPDES requirements for construction activities. As provided by 40 CFR Part 122.35(b), this NOI does not require an MS4 to implement a local construction stormwater control program."* ADEM has implemented a statewide construction site stormwater regulatory program that addresses the minimum control measure outlined in the Federal Phase II Regulations. The City of Auburn recognized a need to develop a construction site erosion and sediment control program to aid in the protection of local water resources. While City of Auburn regulations do not supersede the ADEM regulations, they are intended to support the ADEM regulations.
- The original Erosion and Sediment Control Ordinance adopted by the City was drafted by the Auburn, Lee County, Opelika, and Auburn University (ALOA) Citizen Advisory Group in 2002. The ALOA group was formed to incorporate the diverse input of individuals representing the four regulated organizations,

business leaders, developers and local citizens interested in environmental protection. This group developed a base set of regulations that were common to all. Once drafted, City of Auburn, Lee County, City of Opelika and Auburn University representatives presented the ordinance to their respective governing bodies. The Ordinance was adopted by the Auburn City Council in July 2002.

- The City of Auburn developed regulations to manage construction site erosion by adopting an ordinance often referenced as the Erosion and Sediment Control Ordinance (Ordinance) (City Code, Chapter 7, Article III). The City determined that it was in the best interest of the community to develop construction site erosion and sediment control regulations for development activity within the jurisdiction of the City of Auburn to protect and preserve local water resources.
- In December 2004, the Auburn City Council amended the Ordinance to establish protocol for the enforcement of the Ordinance and to enable City personnel to issue citations and/or stop work orders to developers/contractors in violation of the Ordinance. This amendment added the necessary enforcement authority for staff to more effectively implement the requirements of the Ordinance.

Since the adoption of the Erosion and Sediment Control Ordinance, the Water Resource Management (WRM) Department has prepared and provided information to aid engineers, developers and contractors in designing, constructing and maintaining Best Management Practices (BMPs) on construction sites. The WRM Department routinely evaluates the policies and practices of the City to ensure that the Erosion and Sediment Control Inspection and Enforcement Program is effective in minimizing erosion and managing sediment transport on construction sites. The City of Auburn has the following roles and responsibilities related to erosion and sediment control:

- Reviews Erosion and Sediment Control Construction Best Management Practices Plans (CBMPPs) submitted for individual developments by the engineer of record and provides comments to the engineer. The engineer of record for a development is a licensed professional engineer that is responsible for designing BMPs that will ensure compliance with City regulations as well as ADEM permit requirements for construction sites. The City has adopted statewide standards (i.e. *The Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, latest edition*) to encourage uniformity in BMP design, construction and maintenance.
- Conducts initial on-site walk-through inspections of site BMPs to ensure that all BMPs are installed in accordance with the approved CBMPP.
- Conducts site inspections after each ¾-inch, 24-hour rainfall event or a minimum of once per month. The purpose of these inspections is to document failures/deficiencies in BMPs on-site and to communicate those deficiencies to the respective permit holder. Follow-up inspections are made as necessary to ensure that corrections are being made promptly to correct any deficiencies and to restore the BMPs.

ADEM has the predominant role and responsibility as it relates to erosion and sediment control in Alabama. ADEM requires the City to maintain and operate a stormwater management program that complies with the six (6) minimum control measures. ADEM also regulates construction site activities on all sites over 1 acre in size. ADEM is responsible for the protection and preservation of water quality in Alabama and does so by regulating activities that could lead to adverse impacts on the environment. ADEM performs the following tasks as they relate to construction sites in Alabama:

- Reviews and approves/rejects construction site NPDES Stormwater Permits. All sites with planned disturbance greater than 1 acre are required to obtain an individual NPDES Construction Stormwater Permit. Sites less than 1 acre, but that have the potential to have an adverse impact on downstream water quality, can also be required to obtain a permit. Sites that are less than 1 acre, but are part of a larger common-plan development, are also required to obtain a permit.
- Conducts site inspections in accordance with the NPDES permits and responds to citizen concerns.
- Issues enforcement in the form of consent orders and fines if deficiencies are evident on-site that result in a negative impact on downstream water quality.

2.2 CBMPP Review and Initial Approval Process

The City of Auburn has incorporated a CBMPP review and approval process for construction site erosion and sediment control that is summarized below:

- CBMPPs are submitted by the engineer of record for the project along with other applicable engineering plans. The CBMPP is reviewed by the City of Auburn as part of the Development Review Team (DRT) plan review process. Staff in the WRM Department determines compliance with City of Auburn standards. Comments are compiled by the WRM Department and e-mailed to the DRT Coordinator. Comments are then subsequently mailed to the applicant by the DRT Coordinator.
- Once all comments have been addressed and the plans have been approved through the DRT process, a pre-construction meeting is scheduled by the Public Works Inspection Division Manager. The developer, contractor, engineer of record, and any other applicable parties are encouraged to attend the pre-construction meeting.
- At the conclusion of the pre-construction meeting, a clearing and grubbing permit is issued to the permit holder by the Public Works Inspection Division Manager provided that the permit holder has submitted the ADEM NPDES permit for the site and provided a copy of that permit (or ADEM-received permit application), as well as any other applicable state/federal permits, to the City. This clearing and grubbing permit allows the contractor to begin clearing and grubbing for implementation of the site CBMPP.

- Once all BMPs have been properly installed, the contractor schedules an initial Erosion and Sediment Control walk-through inspection with the Watershed Division Manager and/or Public Works Inspection Division Manager. The Division Manager will then conduct a walk-through inspection of the BMPs on-site in accordance with the approved CBMPP. If all measures are satisfactorily installed, the Division Manager will issue a grading and utility permit to the contractor authorizing the contractor to begin grading operations and utility installation on-site. If the BMPs on-site have not been satisfactorily installed in accordance with the CBMPP, the Division Manager will notify the contractor of the issues on-site and will schedule a follow-up inspection prior to issuing the grading and utility permit.

2.3 Inspection and Enforcement Process

The City of Auburn has developed an inspection and enforcement strategy that monitors sites in a proactive manner and responds to deficiencies as necessary to ensure that City standards are being met to the maximum extent practicable. The program implemented by the City supports the construction site inspection program administered by ADEM in that the majority of potential issues are resolved by the City before any significant water quality impacts can occur. The following is a summary of the inspection and enforcement process employed by the City of Auburn:

- Routine inspections are made on a monthly basis, typically within the first full week of the month to determine site compliance with the City Ordinance and the approved CBMPP.
- Rainfall inspections are typically made within 48 hours after each ¾-inch 24-hour rainfall event to determine site compliance with the City Ordinance and the approved CBMPP.
- Site Inspections fall into 3 categories:
    - If no deficiencies are found on-site, a copy of the inspection report and letter are mailed to the permit holder stating that “no deficiencies were found on-site at the time of inspection”.
    - If minor deficiencies are noted on-site at the time of inspection, a copy of the inspection report along with a letter outlining the deficiencies and proposed corrective actions are mailed to the permit holder stating that these issues should be corrected prior to the next rain event. The inspector also communicates with the permit holder via phone and/or e-mail to ensure that he/she understands the nature of the deficiencies and proposed corrective actions. The inspector conducts follow-up inspections on-site as necessary prior to a subsequent rain event to ensure that these items are being addressed. If the contractor does not take immediate corrective action to address the issues on-site, the site

falls into the next inspection category (major deficiencies) listed below when the follow-up inspection is conducted.

- If major deficiencies (i.e. sediment is leaving the site, failure to correct minor deficiencies since the last inspection, etc.) are noted on-site, the following enforcement process is initiated:
    - The City issues a 72-hour hand-delivered written Notice of Violation (NOV) to the permit holder outlining the deficiencies and proposed corrective measures on-site. The permit holder or representative of the permit holder is required to sign and date two (2) copies of the NOV (one (1) copy for the permit holder and one (1) copy for the City).
    - At the end of the above referenced 72-hour time period, a follow-up inspection is conducted by the Watershed Division Manager and inspector. If the permit holder has failed to satisfactorily address the deficiencies on-site at the end of this time period, a 24-hour verbal notice is issued to the permit holder by the Watershed Division Manager. This verbal notice is documented by staff through detailed field inspection notes.
    - At the end of the above referenced 24-hour time period, a follow-up inspection is conducted by the Watershed Division Manager and the inspector. If the permit holder has failed to satisfactorily address these issues at the end of this time period, a citation is issued to the permit holder by the City to appear in Municipal Court for violations of the Erosion and Sediment Control Ordinance. City personnel also have the ability to issue a stop work order on-site if conditions warrant.
    - Penalties for violating the Erosion and Sediment Control Ordinance are $500 per day per offense and/or possible jail time as determined by the Municipal Court.

3.0 Responsibility and Jurisdiction

As previously discussed, all construction activity where more than 1 acre of land is disturbed is required to be permitted by ADEM. ADEM monitors sites for compliance to protect water quality within the Waters of the State. The developer must hire a qualified credentialed professional (QCP) to design the CBMPP and a qualified credentialed professional (QCP) or qualified credentialed inspector (QCI) must inspect the BMPs for proper installation and maintenance. The QCP/QCI is required by the construction site NPDES stormwater permit to conduct inspections after each ¾-inch 24-hour rainfall event or a minimum of once per month, which is the same criteria that the City uses for conducting inspections. Inspection reports must be submitted to ADEM

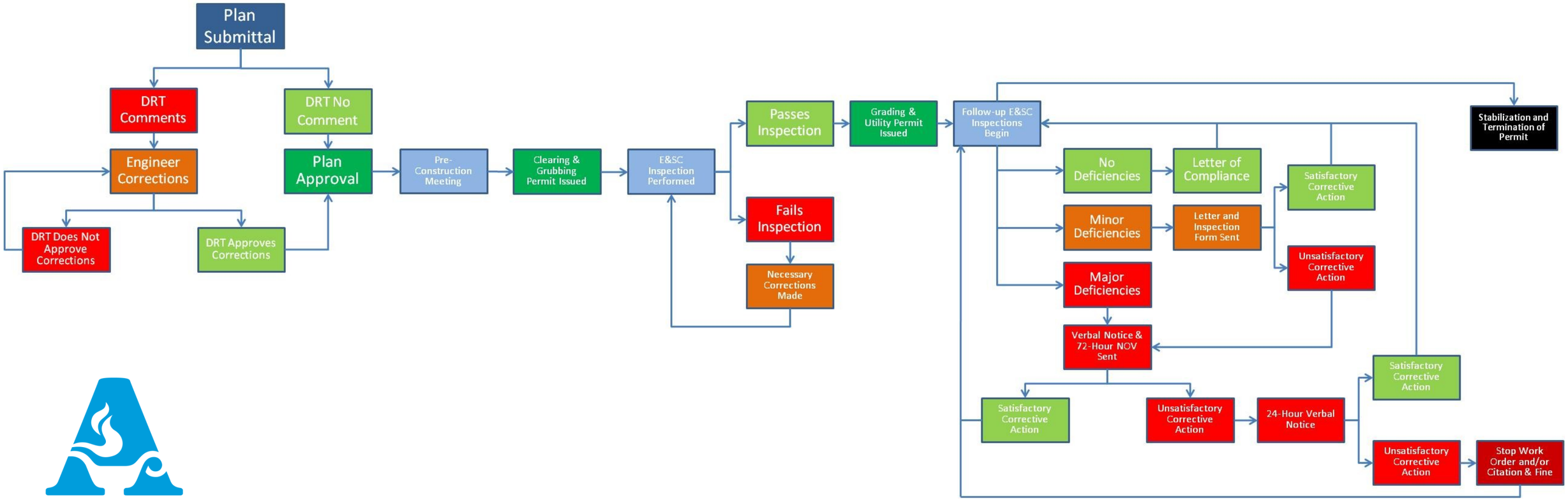
and the City by the QCP and notices of noncompliance must be made within 24-hours of an event by phone or e-mail and then in writing with a report of the findings and recommended actions within 5 days of occurrence. The City of Auburn supports the ADEM construction site stormwater program through implementation of the City of Auburn Erosion and Sediment Control Inspection and Enforcement Program. Post-storm event inspections conducted by the City ensure that failed BMPs are identified and corrected in a prompt manner. The City has adopted state-wide standards for the design, construction and maintenance of BMPs to provide a degree of uniformity in the requirements across the City. The City also routinely consults with ADEM to determine if there are any changes that need to be made to more effectively protect water quality within Waters of the State.

It is the responsibility of the developer to hire a consultant that is a qualified professional to design all aspects of the development, including the CBMPP. The engineer of record is responsible for designing BMPs using the resources available in the *Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas* or similar handbooks for adjoining states and other resources such as the American Society of Civil Engineers BMP Database. The City of Auburn is responsible for determining if the engineer has taken necessary measures in designing the BMPs and provides comments if it appears there are deficiencies in the CBMPP. Staff inspect the installation and maintenance of the BMPs, but it is the responsibility of the qualified professional selected and hired by the developer to inspect and make recommendations as to the performance of BMPs during construction. The City does not direct work, but does point out deficiencies and take necessary enforcement actions when deficiencies are not addressed.

The City of Auburn has not been delegated any authority to directly develop water quality standards. Water quality standards are set at the state and federal level and are managed through ADEM, the United States Army Corps of Engineers (USACE) and the USEPA. The City of Auburn works closely with these governing agencies when deficiencies occur that may have resulted in adverse water quality or environmental impacts as well as to learn ways to improve the existing City program.

In summary, the Erosion and Sediment Control Inspection Program is one of many key components of the overall Stormwater Management Program for the City of Auburn designed to protect water quality within the City. Components of the overall program are designed to address the six (6) minimum control measures discussed earlier in the document, and include, but are not limited to, public education and outreach, erosion and sediment control inspection and enforcement and post-construction stormwater management (i.e. comprehensive water quality sampling program). The City has been proactive to develop a successful program that is considered a model program in the State of Alabama and has often been called upon by ADEM or other communities to provide guidance on developing their programs.

E&SC Plan Review, Site Inspection, and Regulatory Enforcement Process



City of Auburn

APPENDIX D

COMPREHENSIVE STORMWATER QUALITY MONITORING PROGRAM

CITY OF AUBURN, ALABAMA

Comprehensive Stormwater Quality Monitoring Plan

May 2011

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1.0 Monitoring Rationale

1.1 Purpose

The Mission Statement of the City of Auburn (the City) states that the City "*will provide economical delivery of quality services created and designed in response to the needs of its citizens rather than by habit or tradition*". Furthermore, it goes on to establish that "*protecting and conserving our natural resources*" is one of the essential ways in which this may be achieved. One of the most critical of these resources is water. Our rivers, streams, lakes, ponds, and wetlands play an important role in the overall quality of life afforded to the citizens of Auburn. For example, we require clean water for use in human health and consumption, clean water for irrigation, clean water for recreation, clean water for religious and spiritual wellbeing, and clean water for the health of natural ecosystems. The only way to determine whether or not the City is adequately "*protecting and conserving*" our water resources is to monitor the quality thereof. The following plan outlines the City of Auburn's water quality monitoring program as a means to facilitate the preservation, conservation, and, when necessary, the restoration of its water resources so as to further the mission of the City of Auburn and to serve as a good steward of our natural resources and as a respectful neighbor to our downstream citizens.

1.2 Justification and Reasoning

The Alabama Department of Environmental Management (ADEM) issued a revised Statewide General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) on February 1, 2011. Pursuant to Part IV D and Part V of this permit, the City of Auburn (the City), as an MS4 owner/operator that discharges to 303(d) listed waters, is required to develop a "*monitoring plan to assess the effectiveness*" of the best management practices (BMP's) identified in the City's Stormwater Management Plan (SWMP). More specifically, this monitoring plan must be structured so as to determine the effectiveness of the chosen BMPs to reduce the likelihood of a discharge "*causing or contributing to an impairment*" and/or to meet any and all associated Total Maximum Daily Load (TMDL) determined wasteload allocations. Although some monitoring may be necessary to specifically measure the effectiveness of a BMP's capacity to remove pollutants of concern from stormwater discharges, the principal intent and/or reasoning for such monitoring is to determine whether or not they effectively contribute to sustained water quality that meets or exceeds minimum water quality standards (per designated use). As such, the City has chosen to focus its water quality monitoring efforts on its receiving waters, whereas these water quality data may better reflect the overall effectiveness of the SWMP to address watershed scale concerns. Where on-the-ground structural BMP's are used, commonly accepted pollutant removal efficiency ratings will be used

to determine its likely "*effectiveness*" to remove targeted pollutants. Individual outfall monitoring will typically be limited to the development of characterization patterns associated with different landuse/landcover scenarios, pollutant source tracking, etc.

1.3 Intent

As noted in Section 1.1, the principal intent of the City's water quality monitoring program is to determine whether or not receiving waters are sustaining water quality at or above the ADEM determined water quality standards for any given waterbody's designated use. Where excursions are documented and/or suspected, water quality monitoring data will be used to determine the extent of the excursion, the specific pollutant of concern (cause of concern), the likely source or sources of that pollutant, and the most appropriate BMP or combination of BMPs that are most likely to effectively remove the pollutant of concern and restore water quality. Therefore, the intent of the City's water quality monitoring program is threefold; **1) to identify concerns to water quality, 2) to reduce or eliminate these concerns to the maximum extent practicable (MEP), and 3) to maintain and/or restore water quality.**

2.0 INTRODUCTION

2.1 Physiographic and Hydrologic Setting

The City of Auburn is situated within a unique transitional zone between the Piedmont and Coastal Plain physiographic regions of the Southeastern United States (Figure 1). More specifically, the City is located within the Level IV sub-ecoregion known as the *Southern Outer Piedmont*. This ecoregion is generally characterized as having lower elevations, less relief, and less precipitation than that exhibited in other regions of the Piedmont. Overstory cover type within this region consists mostly of mixed deciduous (oak, gum, hickory) and mixed coniferous (pines, firs, spruces, etc.) with the presence of numerous monotypic pine plantations scattered throughout. Specific to these transitional areas in the southeast is the presence of the "fall line", the geographic divide between the Piedmont and Coastal Plain. More information can be found at http://alabamamaps.ua.edu/contemporarymaps/alabama/physical/al_physio.pdf.

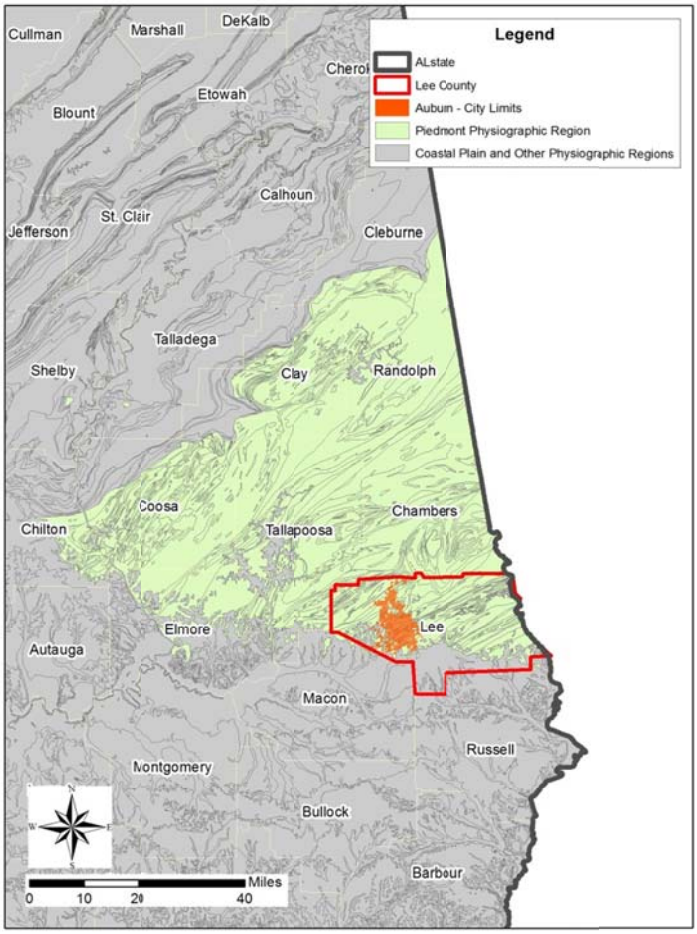


Figure 1 – Physiographic Map Showing Auburn, Alabama Situated Along the Fall Line

The City's presence within the transitional area between the piedmont and coastal plain regions provides for a unique hydrogeomorphic diversity of water features within a relatively small geographic area. This diversity is exemplified in the abundance and variety of stream channel features, varying substrate composition, and variety of aquatic habitats. For example, streams in central Auburn generally exhibit piedmont characteristics, such as strong riffle/pool complex formation and cobble/gravel substrate composition, yet they cascade to a coastal plain dynamic of long runs and sandy substrates as they flow to the western and southern extents of the City. Similarly, the topography of each of the contributing watersheds follows the same pattern of increasing coastal plain-like features to the west and south of the City.

There are three "major" watersheds that encompass the surrounding areas, of which Auburn lies at or near the headwaters of each. Each of these "major" watersheds is categorized under the United States Geological Survey (USGS) system of drainage basin cataloging known as a Hydrologic Unit Code (HUC). More specifically, these three watersheds are categorized as 10-digit HUC's. These three watersheds are the Chewacla Creek Watershed (HUC 0315011003), the Saugahatchee Creek Watershed (HUC 0315011002), and the Uphapee Creek Watershed (HUC 0315011004), all of which ultimately drain to the Tallapoosa River. Contributing to these "major" watersheds are numerous smaller 1st, 2nd, 3rd, and 4th order streams which are scattered throughout the City limits. Of these "smaller" streams, four are named USGS waterbodies. These are Choctafaula Creek, Moore's Mill Creek (303d), Parkerson Mill Creek (303d), and Town Creek (all 14-digit HUC sub-watersheds). All together, the above referenced water features, within the Auburn area, make up a network of more than 825 miles of stream, more than 1,000 lakes/ponds, and more than 2,500 acres of wetland. A detailed map of these features can be found at http://www.auburnalabama.org/WRMDir/WaterShed/11x17%20Watersheds%20Map.pdf.

2.2 General (Suspected) Water Quality Concerns

The City of Auburn is, to a large extent, an urban area. More specifically, the City is a rapidly growing urban area, and therefore is inherently concerned with the potential impacts increased urbanization can have on receiving waterbodies. However, the City is also cognizant that the majority of its growth, and development of its supporting infrastructure, occurred prior to the enactment of the Clean Water Act (1972), and more specifically, prior to modern stormwater regulations set forth in Phase II of the National Pollutant Discharge Elimination System (NPDES) in 1999. As such, the majority of the existing public and private stormwater infrastructure was not designed to specifically address concerns of water quality. Therefore, the City has invested in an extensive water quality monitoring program in order to understand how both the existing urban infrastructure and new development impact water quality. The City's water quality monitoring program provides background information regarding the presence/absence and

concentration of primary pollutants of concern, the potential sources of these pollutants, and, in many cases, insight as to how to best address the concerns. The following Comprehensive Water Quality Monitoring Plan reflects this understanding and expands upon the ways in which the City plans to utilize its water quality data.

2.3 Specific (Known) Water Quality Concerns

There are currently two 303(d) listed impaired waters within the City limits and one watershed-based total maximum daily load (TMDL). The 303(d) listed waters are Moore's Mill Creek (siltation) and Parkerson Mill Creek (pathogens). A watershed-based TMDL has been established for Saugahatchee Creek (Nutrient Enrichment and Dissolved Oxygen). A brief description of each impairment is provided below.

Moore's Mill Creek

Moore's Mill Creek was placed on the draft 303(d) list in 1998 and was listed on the final 303(d) list in 2002, 2004, 2006, 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as stream siltation resulting from sedimentation deriving from local development within the Moore's Mill Creek watershed. However, findings from a comprehensive Watershed Management Plan for Moore's Mill Creek also identified instream sediment loading from streambank erosion as a likely significant contributor to its impairment (http://www.cleanwaterpartnership.org/uploadedFiles/Moore's_Mill_Creek_Wshed_Assessment_5_21_08.pdf). A Total Maximum Daily Load (TMDL) for Moore's Mill Creek is anticipated to be issued in 2012.

Saugahatchee Creek

The Saugahatchee Embayment, where Saugahatchee Creek discharges into Yates Lake, was placed on the final 303(d) list in 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The Embayment was placed on the 303(d) list primarily for nutrient enrichment. ADEM and EPA issued the final TMDL for nutrients and organic enrichment/dissolved oxygen for Pepperell Branch and the Saugahatchee Embayment in April 2008. Implementation of the stormwater TMDL will be addressed through the SWMP, and the effectiveness thereof will be determined by the results of water quality monitoring identified in this plan. As with Moore's Mill Creek, a Watershed Management Plan has been developed for the Saugahatchee Watershed as well. Information about this plan and updates of its implementation can be found at www.swamp.auburn.edu.

Parkerson Mill Creek

Parkerson Mill Creek, from its source to Chewacla Creek, was placed on the final 303(d) list in 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as pathogens resulting from urban runoff and storm sewers. A Watershed Management Plan was approved by ADEM in 2010 and its subsequent implementation is scheduled for 2011 and 2012 (www.aces.edu/.../Auburn%20PMC%20Final%20Report.DOC). A TMDL for Parkerson Mill Creek is anticipated to be issued in 2011.

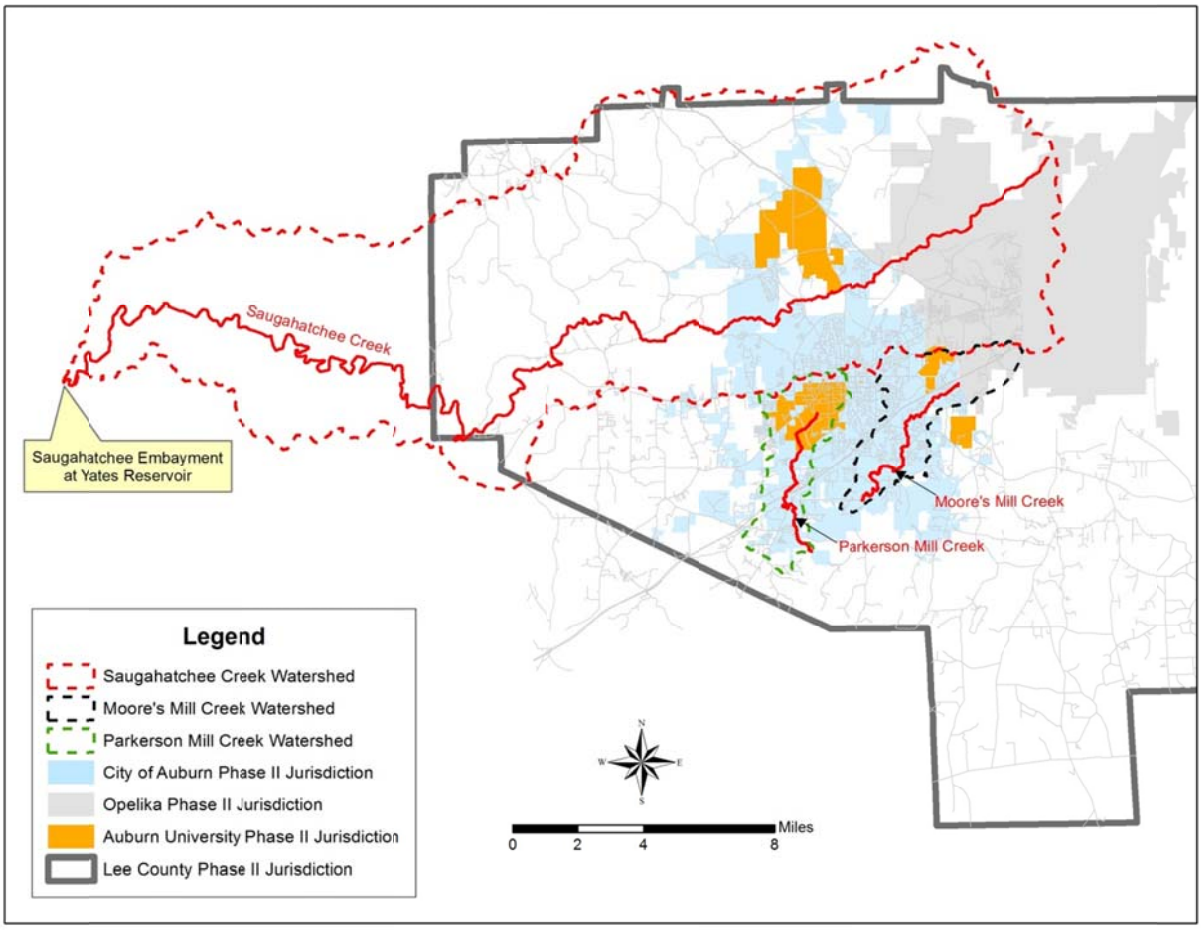


Figure 2 – Map Showing 303(d) and TMDL Waters within Auburn, Alabama

3.0 General Approach & Method

3.1 General Approach to Water Quality Monitoring

Water quality concerns may occur as chemical, biological, and/or physical impairment. In addition, the cause(s), scale, and degree of impairment is often the result of a multiplicity of dynamic conditions and is rarely the result of an easily definable, single source or condition (whether non-point or point source). In short, the impacts to water are many and varied. Such is the basis of understanding for the City's adoption of a watershed approach to water quality monitoring. This type of approach allows the City to develop a more comprehensive awareness of the "*cumulative impacts of the multitude of activities*" that may contribute to the impairment and/or degradation of its receiving waters (Consistent with EPA Watershed Approach - http://www.epa.gov/owow/watershed/framework/ch1.html).

In Alabama, these "impacts" can be defined as anything that degrades water quality such that it fails to meet the ADEM's State Water Quality Criteria. As such, the City operates its water quality monitoring program to determine whether or not its receiving waters are sustaining the ADEM regulated minimum water quality criteria for a number of parameters (ADEM Admin. Code r. 335-6). Additionally, monitoring is performed to identify pollutants of concern, to delineate the extent of impact of the pollutant, identify potential sources (point and non-point source) of the pollutant, and ultimately, determine how to address the reduction or elimination of the pollutant. Therefore, the City's approach to its water quality monitoring program is to develop a comprehensive awareness and understanding of the condition of its water resources, and, where impairment(s) are found to occur, monitor water quality parameters that are most reflective of the specific impairment. *For the need of practicability and feasibility, the City may at times use surrogate parameters (demonstratively correlated) to meet permit conditions requiring "representative" monitoring.

3.2 Method of Monitoring

Just as the potential causes of impairment are many and varied, so too are the methods in which water quality monitoring may be performed to determine the extent of impairment, track the potential sources of the pollutant, and to identify the most appropriate BMP to address the concern(s). For example, monitoring for phosphates in stormwater in association with a water quality impairment caused by organic enrichment and depletion of dissolved oxygen may involve the collection of grab samples, composite samples, flow-weighted composite samples, first flush samples, and/or any combination thereof. Additionally, monitoring of the impacts associated with phosphate loading and subsequent evaluation of BMP controls may involve direct and/or indirect monitoring methods (i.e. monitoring of

chlorophyll *a* as an indicator of eutrophication caused by excess phosphate loading). Therefore, it is important to adjust monitoring methods based upon the existing knowledge/science for each pollutant, the likely practicability and effectiveness of each method, and the characterization of the potential sources (i.e. first flush sampling for total phosphate monitoring off residential lawns and composite sampling for baseflow daily load analysis). Similarly, the monitoring program should provide working knowledge of a hierarchy of characterization of potential sources, wherein prioritization is placed upon the most probable contributing factor to impairment (i.e. is the pollutant loading primarily non-point source stormwater related, point source stormwater, agricultural stormwater, illicit discharges, industrial point source, etc.).

3.3 Analytical Method – General Notes

Whenever possible, the City shall attempt to follow the analytical methods of the most current edition of the Standard Methods for the Examination of Water and Wastewater. Additionally, any analysis performed in-house and/or in-situ (not by a certified lab), will follow EPA approved analytical methods using appropriate equipment and procedures.

4.0 Required Monitoring

4.1 Moore's Mill Creek

As noted above, Moore's Mill Creek was placed on the draft 303(d) list in 1998 and was listed on the final 303(d) list in 2002, 2004, 2006, 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as stream siltation resulting from sedimentation deriving from local development within the Moore's Mill Creek watershed. In addition, findings from a comprehensive Watershed Management Plan for Moore's Mill Creek identified in-stream sediment loading from streambank erosion as a likely significant contributor to its continued impairment. Excess siltation can cause increases in stream temperatures, decreases in the passage of light through the water column, decreased dissolved oxygen content, issues with color, clogging of fish and aquatic invertebrate gills, destruction of habitat, increased nutrient loading, and decreased recreational use. A Total Maximum Daily Load (TMDL) for Moore's Mill Creek is anticipated to be issued in 2012.

4.1 A – Monitoring Plan & Analytical Method

Water quality impairment caused by siltation can be monitored by the analysis of either the concentration of total suspended solids (TSS) and/or the measurement of turbidity (for which the impacts therefrom may be evaluated through various studies of aquatic macroinvertabrate richness indices, habitat assessments, etc.). Although TSS is a more direct measurement of siltation, turbidity is often used as a more practical and timely means to detect trends associated with sediment loading in developing watersheds. Additionally, monitoring of turbidity is consistent with the ADEM construction effluent guidelines (sites not to exceed 50 NTU from background sample) and with anticipated future EPA mandated numeric construction effluent limit guidelines (ruling currently stayed by EPA). Turbidity is, in general, also positively correlated with the concentration of total suspended solids (yet varies proportionately with soil composition). For example, an increase in the concentration of total suspended solids will typically result in a correlated increase in turbidity. Therefore, turbidity may be used as a representative water quality parameter for monitoring of streams impaired by siltation and is the parameter of choice for the City.

The portability, practicability, and feasibility of turbidity monitoring allows the City to expand its monitoring capacity in the Moore's Mill Creek Watershed by increasing the number of locations that can be monitored, increasing the frequency of sampling, and increasing the flexibility of monitoring. For the monitoring of turbidity, the City will use a portable turbidity meter that complies with EPA method 180.1.

The City has operated an extensive turbidity monitoring program since 2006. Over 40 locations throughout the City are monitored weekly, with storm event-specific sampling performed when practical. Eight (8) of these monitoring locations are within the Moore's Mill Creek Watershed, six (6) of which are located on the main stem and two (2) on unnamed tributaries (average of 420 samples analyzed per year). The existing locations are monitored to develop an understanding of sediment load as Moore's Mill Creek enters and exits the City's Phase II jurisdictional territory, assess the effectiveness of erosion and sediment controls of ongoing development activities, and to track loading from additional sources. Understanding that the sources and extent of sediment loading may change as development patterns and trends change, the City may adjust monitoring locations, monitoring frequency, and monitoring method as it determines necessary to appropriately measure the effectiveness of its SWMP to reduce siltation in Moore's Mill Creek. ADEM will be notified if monitoring locations, frequency of monitoring, and/or monitoring method changes.

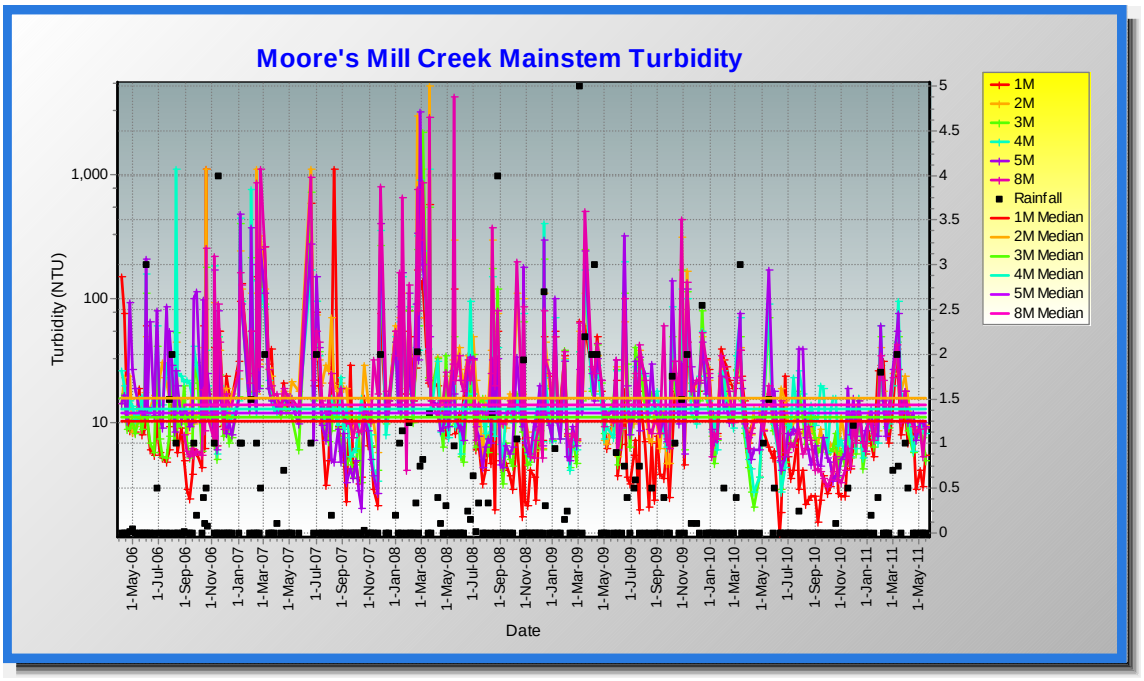


Figure 3 – Example Monitoring Data from Moore's Mill Creek Mainstem Stations

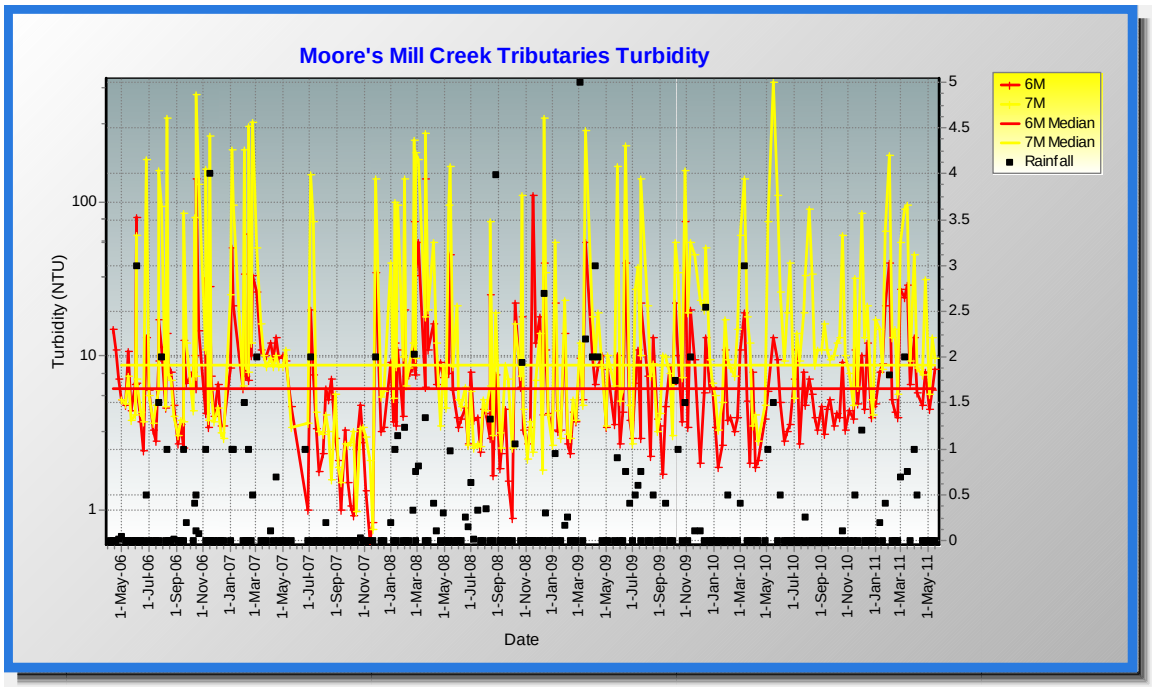


Figure 4 – Example Monitoring Data from Moore's Mill Creek Tributary Stations

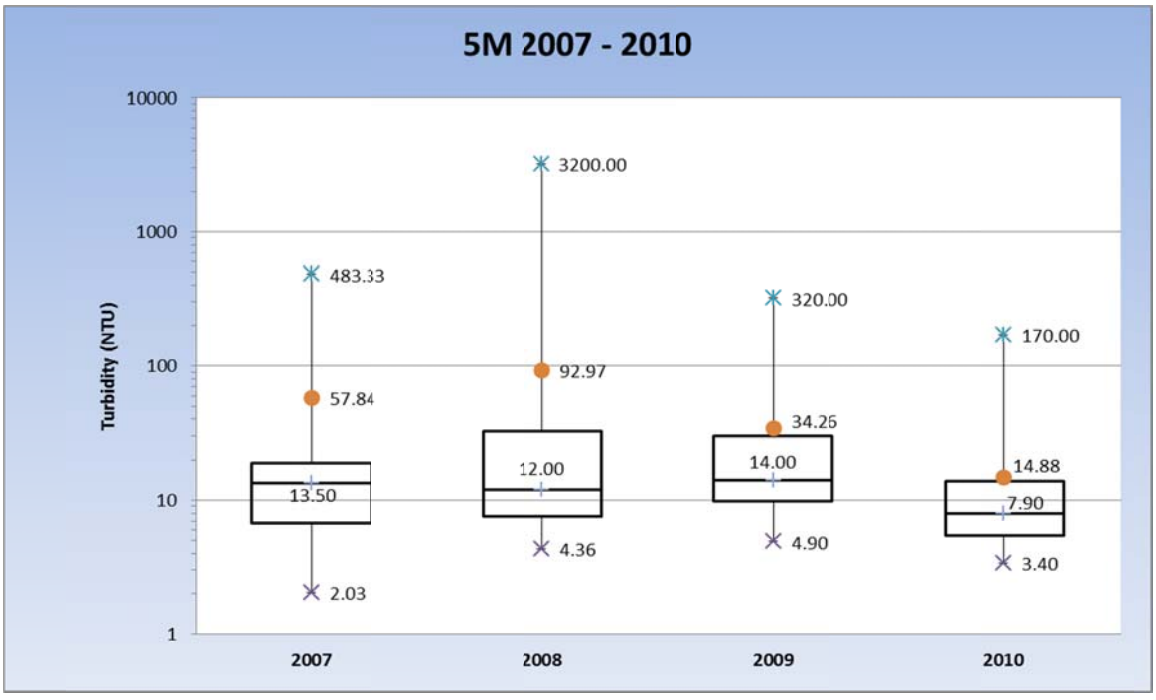


Figure 5 – Example Box Plot of Turbidity Data Showing Improved Water Quality

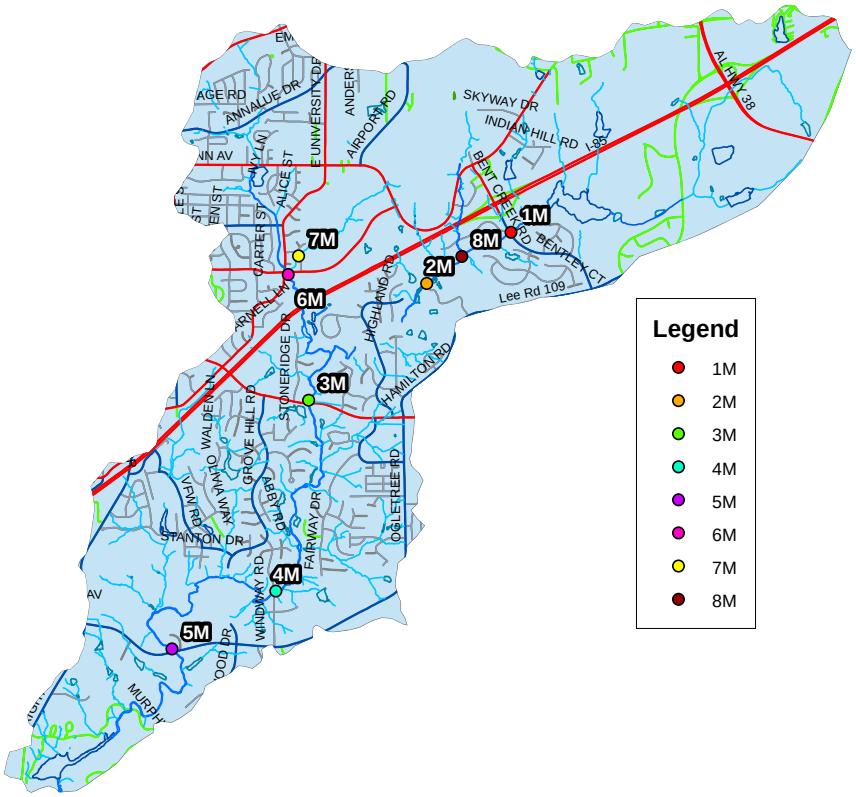


Figure 6 – Current Turbidity Monitoring Locations in Moore's Mill Creek Watershed

4.1 B – Existing Controls Targeting Siltation in Moore's Mill Creek Watershed

Erosion and Sediment Control Ordinance – The City addresses concerns of sediment loading from land development activities primarily through the enforcement of its erosion and sediment control ordinance (E&SC Ordinance). Compliance with the E&SC ordinance is ensured through three management practices; comprehensive development review team process (DRT), phased development permitting system, and construction site inspection and enforcement. The DRT process ensures that an appropriate Construction Best Management Practices Plan (CBMPP) has been developed and complies with federal, state, and local design standards, the phased development permitting system ensures the proper installation of site BMP's prior to major grading activity, and the site inspections ensure continued evaluation of the effectiveness of site BMP's and serves as a compliance tracking mechanism for escalating enforcement actions.

Annual Erosion and Sediment Control Workshop – The City currently host an annual Erosion and Sediment Control Workshop to educate engineers, designers, developers, and construction professionals of regulatory changes, technological

advances, and to promote responsible development practices. Typically, the City invites an outside speaker to update attendees on contemporary development issues, but they are also updated by Water Resource Management Staff of any expected changes to the City's regulatory policies, design standards, and/or permitting practices. This workshop allows local professionals to enhance their knowledge of modern stormwater management practices in a community-based forum, but also gives the City an opportunity to learn about any contemporary concerns and/or issues from the design and development communities.

Drainage and Flood Control Ordinance – The City's drainage and flood control ordinance requires new developments and redevelopment sites to provide hydraulic detention for the attenuation of any expected increases in the post-development peak discharge from the pre-development peak discharge for the 2, 5, 10, and 25-year 24-hour storm events. These controls, in addition to reducing flood hazards associated with increased runoff, help to prevent downstream channel erosion, which could result in increased in-stream sediment loading. In addition to hydraulic detention requirements, this ordinance also requires that developments provide for 3,600 cubic feet of sediment storage per acre of disturbed land.

Stream Buffer Ordinance – The intent of the City's Stream Buffer Ordinance (SBO) is to protect riparian corridors, which are essential to the physical, chemical, and biological integrity of its waterways. The SBO is based on a managed-use type buffer rather than a strict non-disturbed buffer approach. This is implemented in a 3-zoned buffer (streamside, managed use and upland zones) with the width of the buffer determined by the drainage area of the stream as it leaves the property of concern. The City's stream buffer requirements can be found in Section 4.4.7 of the Water Resource Management Design and Construction Manual. Stream buffers have been proven to reduce stormwater pollution and decrease the potential for streambank erosion (and subsequent in-stream sediment loading). The City will continue to implement these stream buffer regulations during this next permit cycle.

Site Development Review Tool – The City requires that any proposed development within the Moore's Mill Creek Watershed {any 303(d) or TMDL watershed} submit a water quality plan that specifically addresses the removal of post-construction total suspended solids. More specifically, the City requires that the post-construction BMP's collectively achieve an 80% reduction in total suspended solids. The City's Stormwater Quality Development Review Tool (SDR Tool) provides assistance to City plan review staff and private planners, developers, engineers, and designers in developing CBMPP's that consistently achieve the desired pollutant removal efficiency.

Storm Drain Marking Project - In an attempt to better educate its citizens about local water resources, watershed boundaries, stormwater, and water quality the City of Auburn, together with Auburn University, began the Storm Drain Marking Program in September of 2006. The intent of this program is to demarcate all storm drain curb inlets with their respective receiving waterbodies. This program began as a contest in which all Auburn elementary school students were given the opportunity to design a logo for each watershed-specific marker within the Auburn area (Parkerson Mill Creek not included at this time). At the end of the contest the four winning designs were placed on 1,000 storm drain markers, of which 1200+ have already been installed on storm drains in the Auburn area as of June 28, 2011. Markers are generally installed by small groups of volunteers and local school children. The installation process allows the volunteers to physically orient themselves with the local watersheds, gives them a better understanding of the basic network and functions of traditional stormwater conveyance systems, and provides for a hands-on educational opportunity about water quality. Project participants also learn of the potential impacts that unwanted pollutants (trash, lawn maintenance waste, detergents, etc.) may have on the receiving waters, In turn, they are also informed of the many ways in which they can do their part in helping to reduce this "loading" and are encouraged to educate their friends and neighbors to do the same.

Moore's Mill Creek Stream Restoration Project – As identified in the Moore's Mill Creek Watershed Management Plan, in-stream sediment loading from channel instability remains a concern. Beginning in January 2007, a collaborative restoration effort began between ADEM, the Alabama Clean Water Partnership, Cleveland Brothers Construction, Inc., Wildlands, Inc., and the City of Auburn. The project was partially funded by an ADEM 319 Non-Point Source Program Grant, with the majority in-kind match provided by Cleveland Brothers Construction, Inc. This project utilized natural channel design concepts and included the construction of 11 rock vanes, 5 log vanes, 5 root wads, 3 double-wing deflectors, 1 single-wing deflector, 1 rock j-hook vane, 1 boulder cluster, 1 rock cross vane, 2492 linear feet of floodplain bench cut, and 5,756 linear feet of restoration/stabilization. The remaining portions of the project may be completed in the future, as the original design proposal by Wildlands, Inc. allows for a phased implementation. Though it is impossible to directly attribute any marked improvements in water quality to the restoration efforts thus far, early turbidity data are an encouraging sign that conditions are improving (CoA Turbidity Data, 2007-2011).

4.1 C – Data Review and Evaluation

As noted above, water quality monitoring for turbidity in the Moore's Mill Creek watershed provides a positive and encouraging sign that the City's efforts to control sedimentation have been effective. Although the annual reduction in median and peak turbidity in Moore's Mill Creek and its tributaries cannot be definitively or directly attributed to the City's efforts, it does provide evidence that conditions are improving and supports the need to continue the existing management and control strategies. In addition to turbidity monitoring, the City will make all reasonable and practicable efforts to monitor other water quality parameters in Moore's Mill Creek and its tributaries. This may/may not include water quality profiling via Hydrolab sondes, habitat and/or macroinvertebrate assessments, etc. All data obtained in the Moore's Mill Creek Watershed will be presented in the required annual stormwater quality monitoring report.

4.2 Parkerson Mill Creek

Parkerson Mill Creek is the most recently listed 303(d) impaired waterbody within the City's Phase II jurisdiction. The reach identified as impaired includes all waters from its source (near the intersection of N. College Street and E. Magnolia Avenue in downtown Auburn) to its confluence with Chewacla Creek and was placed on the final 303(d) list in 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as pathogens resulting from urban runoff and storm sewers. A Watershed Management Plan was approved by ADEM in 2010 and its subsequent implementation is scheduled for 2011 and 2012. A TMDL for Parkerson Mill Creek is anticipated to be issued in 2011.

4.2 A – Monitoring Plan & Analytical Method

ADEM currently qualifies pathogen impairment designations using State Water Quality Criteria that rely upon bacterial density (or concentration in CFU/100mL) of *Escherichia coli* (*E. coli)* as the primary indicator. Additionally, ADEM State Water Quality Criteria establish both a single-sample criterion and a geometric mean criterion for acceptable concentration of *E. coli*, of which both vary depending upon the designated use of the waterbody. The designated use of Parkerson Mill Creek is for Fish & Wildlife, for which the single-sample criterion during the months of June-September is 487 CFU/100mL and 2,507 CFU/100mL during the rest of the year. Geometric mean criterion for June-September is 126 CFU/100mL and 548 CFU/100mL during the rest of the year.

During the 2010 listing process, the City conducted an eight month long side-by-side pathogen study on Parkerson Mill Creek, which included sampling of four (4) locations along the main stem. The City participated in this study to 1) qualify ADEM's decision to

place Parkerson Mill Creek on the 303(d) list, 2) help identify and track any potential sources of pathogen loading, and 3) to evaluate and compare the different analytical methods used by ADEM (SM 9223B, defined enzyme substrate, multiple well - Colilert-18) and Environmental Resource Analysts, Inc. (SM 9222G, Membrane Filtration of Fecal Coliform followed by NA-MUG confirmation for E-Coli concentration), the City's current water quality laboratory contractor. The results of this study supported ADEM's decision to list Parkerson Mill Creek for pathogens (per 2010 Listing Methodology) and identified the headwaters reach of the Parkerson Mill Creek Watershed as the likely primary source of pathogens. The comparison between the analytical methods, of which both are EPA approved, indicated that they consistently return similar results (median difference of 10 CFU/100mL). As such, the City will continue to use SM 9222G for any further monitoring of *E. coli* in Parkerson Mill Creek, yet reserves the right to use any EPA approved method and/or protocol (i.e. Alabama Water Watch protocol using Coliscan Easygel). The City will notify ADEM if any changes are made regarding the analytical method and/or contracted laboratory and will include all information in its annual water quality monitoring report.

Due to concerns regarding the cost and practicability of routine monitoring for *E. coli* and the potential marginal utility thereof (i.e. character, extent, and general source area of impairment already identified through side-by-side study), the City will only conduct *E. coli*-specific monitoring on an as-needed basis (i.e. to track the origin of specific concerns, to follow up on citizen concerns, etc.). Additionally, the City may perform a follow-up intensive *E. coli* study to evaluate the effectiveness of existing and future BMP's and other watershed management activities at a later date. Any future study will be coordinated with both ADEM and Auburn University, as both the City and Auburn University have jurisdictional territory in the headwater reach of the Parkerson Mill Creek Watershed. The City will also make all reasonable efforts to continue weekly monitoring of turbidity and quarterly water quality profiling to evaluate stream conditions and to supplement for direct monitoring for *E. coli*.

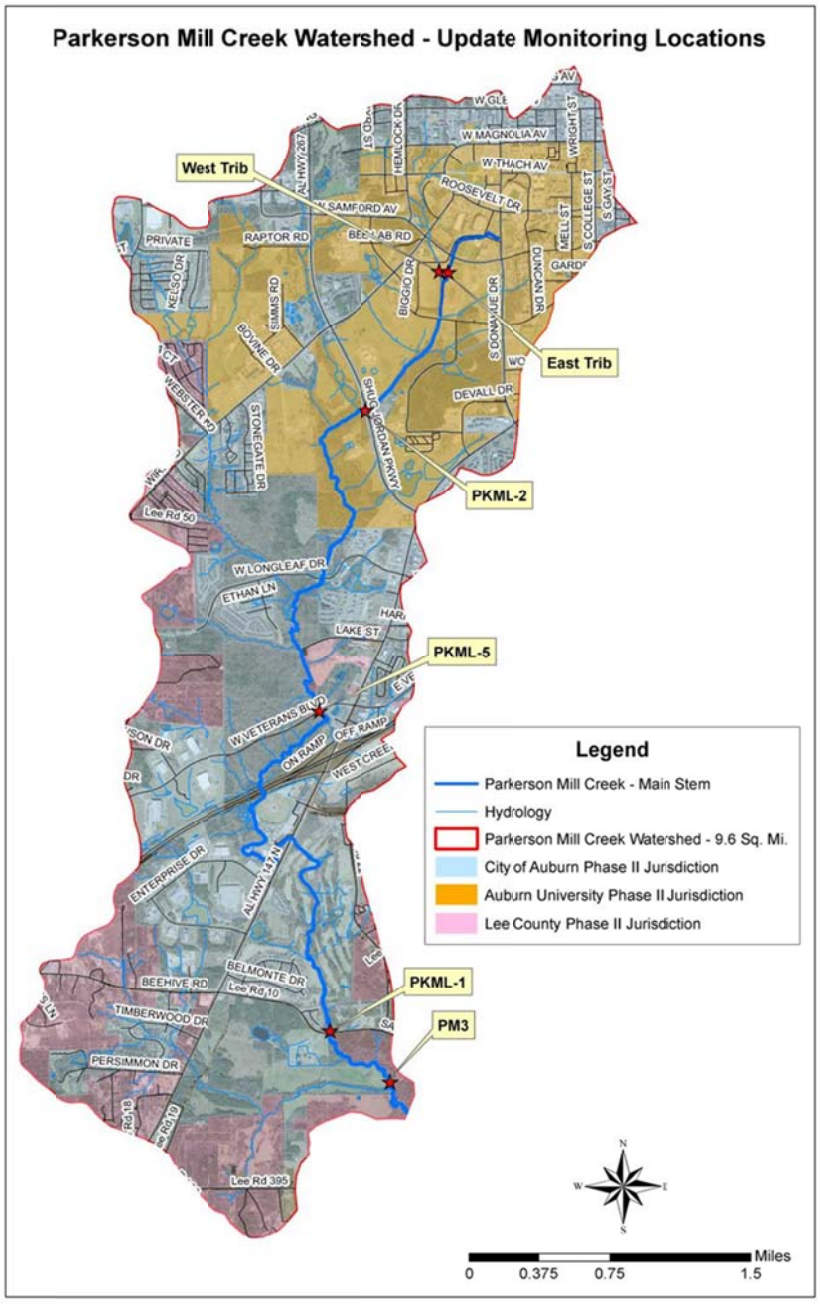


Figure 7 – Map Showing E-Coli Monitoring Locations for Side-by-Side Study

4.2 B – Existing Controls Targeting Pathogens In Parkerson Mill Creek Watershed

Stream Buffer Ordinance – The intent of the City's Stream Buffer Ordinance (SBO) is to protect riparian corridors, which are essential to the physical, chemical, and biological integrity of its waterways. The SBO is based on a managed-use type buffer rather than a strict non-disturbed buffer approach. This is implemented in a 3-zoned buffer (streamside, managed use and upland zones) with the width of the buffer

determined by the drainage area of the stream as it leaves the property of concern. The City's stream buffer requirements can be found in Section 4.4.7 of the Water Resource Management Design and Construction Manual. Stream buffers have been proven to reduce stormwater pollution and decrease the potential for streambank erosion (and subsequent in-stream sediment loading). The City will continue to implement these stream buffer regulations during this next permit cycle.

Illicit Discharge Ordinance - Section 3(B), Paragraph 3(a)(iii) of the NPDES General Permit Number ALR04003 states "*To the extent allowable under State and local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system…….and implement appropriate enforcement procedures and actions.*" In the City's Notice of Intent for the initial Phase II Stormwater permit cycle, submitted to ADEM in March 2003, the stated goal was to develop and implement an Illicit Discharge Ordinance by December 2005. This goal was met nearly two years ahead of schedule. A draft copy of the Illicit Discharge Ordinance was reviewed by the *ALOA* Citizens Advisory Committee in November 2003. The Auburn City Council adopted the Illicit Discharge Ordinance on January 20, 2004.

The City's Illicit Discharge Ordinance prohibits any material from being placed into the City's MS4 that is not composed entirely of stormwater, except for discharges that are pursuant to a NPDES permit or discharges from firefighting or emergency management activities.

The City's Illicit Discharge Ordinance provides escalating enforcement procedures for violators of the ordinance. First-time violators are generally notified of the violation and the provisions in the City's Ordinance through a notification letter that is sent to the violator. For repeat violators, the City has the authority to issue a citation to appear in the City's Municipal Court where fines are set forth in Alabama Code 11-45-9 and are generally set at $500 per day per offense.

As recommended in Permit Number ALR04003, the City will evaluate its Illicit Discharge Ordinance on a yearly basis to see what modifications or changes may be needed. The City will continue to aggressively pursue, identify and correct illicit discharges that are found within the MS4.

Street Sweeping and Storm Drain Cleanout Program – Regular street sweeping and storm drain cleanout programs have been proven as effective means to reduce overall pollutant loading from roads and storm sewer systems. The Environmental Services Department of the City of Auburn currently performs street sweeping measures on a monthly basis throughout numerous roadways within the Parkerson Mill Creek

Watershed. Regular street sweeping measures such as these have been shown to reduce regrowth of *E. coli* bacteria through the reduction of the formation of biofilm along curb and gutter. In addition to the City's street sweeping program, regular inspections and cleanings are performed on an annual basis throughout the storm-sewer system. Cleaning of storm-sewer systems has also been shown to reduce bacteria loading.

Stormwater Outfall Reconnaissance Inventory - In 2009, the Water Resource Management Department began a stormwater outfall reconnaissance inventory (ORI) program. The purpose of the ORI program is to walk each watershed in the City's MS4 (six total), conduct an inspection of each stormwater outfall and prepare detailed documentation of each stormwater outfall in the basin being inspected. City staff document illicit discharges as well as potential, likely and possible illicit discharges. The City's ORI program is patterned on recommendations outlined in a manual titled *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (Center for Watershed Protection and Dr. Robert Pitt, October 2004). The City's goal is to prioritize each watershed for inspection based on the methodology outlined in Dr. Pitt's manual, and to inspect each watershed in the City's MS4 as timely and efficiently as possible.

Parkerson Mill Creek Watershed Management Plan – The Parkerson Mill Creek Watershed Management Plan is a comprehensive plan to restore, improve, and protect water quality through the integration of current scientific data and existing plans in cooperation with a multi-disciplinary group of stakeholders. The watershed management plan is a long-term effort, with the ultimate goal of attaining the future TMDL for Parkerson Mill Creek and delisting the stream from the ADEM 303(d) list. The plan aims to help all involved communities by establishing protocol to aid in meeting the minimum requirements of the NPDES program (*language taken directly from Parkerson Mill Creek Watershed Management Plan).

4.2 C – Data Review and Evaluation

As described in Section 4.2 C of this plan, the results of the side-by-side intensive pathogen study performed by ADEM and the City between April and November of 2010 1) supports ADEM's decision to list Parkerson Mill Creek for pathogens and 2) identifies the headwaters reach as the likely primary source of pathogen loading. Additionally, potential contributing sources were identified through the study to be urban stormwater runoff, sanitary sewer to storm sewer cross connections, urban wildlife, agriculture stormwater runoff, and sanitary sewer overflows. Therefore, the City will focus its BMP efforts in the headwaters reach to target reductions from these potential

sources. The development of the Parkerson Mill Creek Watershed Management Plan, as described above, serves as the first step toward directed application of pathogen-specific BMP implementation.

CoA	PKML-2	PKML-5	PKML-1	PM3
4/7/10	727.0	144.0	90.0	108.0
5/6/10	180.0	180.0	216.0	162.0
6/8/10	636.0	153.0	108.0	144.0
6/14/10	290.0	350.0	210.0	153.0
6/21/10	320.0	455.0	131.0	455.0
6/28/10	91.0	171.0	63.0	144.0
7/6/10	180.0	135.0	72.0	270.0
8/3/10	5000.0	2000.0	1182.0	1000.0
8/5/10	273.0	117.0	45.0	545.0
8/10/10	36.0	380.0	9.0	250.0
8/23/10	90.0	117.0	45.0	350.0
8/25/10	315.0	162.0	1273.0	1182.0
8/31/10	182.0	1000.0	300.0	364.0
9/14/10	108.0	9.0	9.0	364.0
10/5/10	364.0	240.0	9.0	144.0
11/22/10	153.0	108.0	18.0	279.0
AVG	559.1	357.6	236.3	369.6
MAX	5000.0	2000.0	1273.0	1182.0
MIN	36.0	9.0	9.0	108.0
MED	227.5	166.5	81.0	274.5

*Data Excluded from Study

ADEM	PKML-2	PKML-5	PKML-1	PM3	
4/7/10	686.7	118.7	108.6	93.3	
5/6/10	172.2	165.8	275.5	166.4	
6/8/10	517.2	214.3	153.9	133.4	
6/14/10	290.9	178.9	123.9	131.7	
6/21/10	488.4	325.5	196.6	387.3	
6/28/10	172.2	150.0	150.0	178.9	
7/6/10	116.2	160.7	26.2	135.4	
8/3/10	204.6	1203.3	1299.7	1986.3	*Data Excluded from Study
8/5/10	91.0	131.0	67.0	190.0	
8/10/10	59.4	579.4	21.3	290.9	
8/23/10	111.2	75.9	12.2	488.4	
8/25/10	131.4	65.7	29.8	261.3	
8/31/10	69.1	185.0	88.2	313.0	
9/14/10	137.6	34.5	1.0	435.2	
10/5/10	228.2	92.3	23.1	290.0	
11/22/10	160.7	58.3	14.5	270.0	
AVG	227.3	233.7	162.0	359.5	
MAX	686.7	1203.3	1299.7	1986.3	
MIN	59.4	34.5	1.0	93.3	
MED	166.5	155.4	77.6	265.7	

Tables 1 and 2 – Data from Side-by-Side E-Coli Study

4.3 Saugahatchee Creek

The Saugahatchee Creek Embayment on Yates Reservoir was originally placed on the ADEM 303(d) list of impaired waterbodies in 1996 for Organic Enrichment/Dissolved Oxygen (OE/DO) and nutrients. It remained on the State's 303(d) list after each consecutive two-year water quality assessment until 2008, at which time the *Saugahatchee Creek Embayment (Yates Reservoir) TMDL* was finalized. Additionally, Pepperell Branch, an unnamed tributary of Saugahatchee Creek which originates in Opelika, also remained on the State's 303(d) list for nutrient impairment until 2008 (with previous listings for unknown toxicity). The impairment of Pepperell Branch was also addressed in the *Saugahatchee Creek Embayment TMDL*. Note: At no time has the main stem of Saugahatchee Creek been added to the State's 303(d) list. In order to address water quality concerns within the Saugahatchee Embayment the ADEM and the EPA jointly developed a "watershed based" TMDL, which would in turn address nutrient loading from both the main stem of Saugahatchee Creek and Pepperell Branch. The final Saugahatchee Creek Watershed TMDL was issued in April of 2008, identifying Total Phosphorus (TP) as the primary pollutant of concern (expressed as Chlorophyll *a* to satisfy numeric target criteria for assessing eutrophication in lakes).

Following the ADEM *Nutrient Criteria Implementation Plan* (September 2007), Chlorophyll *a* is identified as the target water quality parameter for assessing cultural eutrophication within lakes and reservoirs. With TP identified as the limiting nutrient in controlling algal blooms and subsequent eutrophication, a

93% reduction (2.67 mg/l to 0.2 mg/l) in the growing season mean TP concentration discharging from the City of Auburn Northside Water Pollution Control Facility (WPCF) was determined as necessary to obtain the target Chlorophyll *a* concentration of 12 *u*g/l within the Saugahatchee Embayment of Yates Reservoir. Additionally, a 50% reduction (0.19 mg/l to 0.1 mg/l) in TP concentrations in stormwater runoff is also identified as necessary to obtain target Chlorophyll *a* concentrations (see table below).

TMDL	Existing TP Loads					Allowable Loads					Reductions				
	WLA (Continuous Sources)			WLA (Stormwater Sources)	LA (Stormwater Sources)	WLA (Continuous Sources)			WLA (Stormwater Sources)	LA (Stormwater Sources)	WLA (Continuous Sources)			WLA (Stormwater Sources)	LA (Stormwater Sources)
	WPS	Opelika Westside WWTP	Auburn Northside WWTP			WPS	Opelika Westside WWTP	Auburn Northside WWTP			WPS	Opelika Westside WWTP	Auburn Northside WWTP		
Saugahatchee Creek Watershed	2.25 (mg/l) 30.02 lbs/day	1.43 (mg/l) 47.70 lbs/day	2.67 (mg/l) 66.80 lbs/day	0.19 (mg/l) lbs/day = Q*0.19*8.34	0.19 (mg/l) lbs/day = Q*0.19*8.34	0.20 (mg/l) 2.67 lbs/day	0.20 (mg/l) 6.67 lbs/day	0.20 (mg/l) 5.00 lbs/day	0.10 (mg/L) lbs/day = Q*0.10*8.34	0.10 (mg/L) lbs/day = Q*0.10*8.34	91%	86%	93%	50%	50%

Table 3 – Saugahatchee Watershed TMDL Point Source WLA and Non-Point Source LA

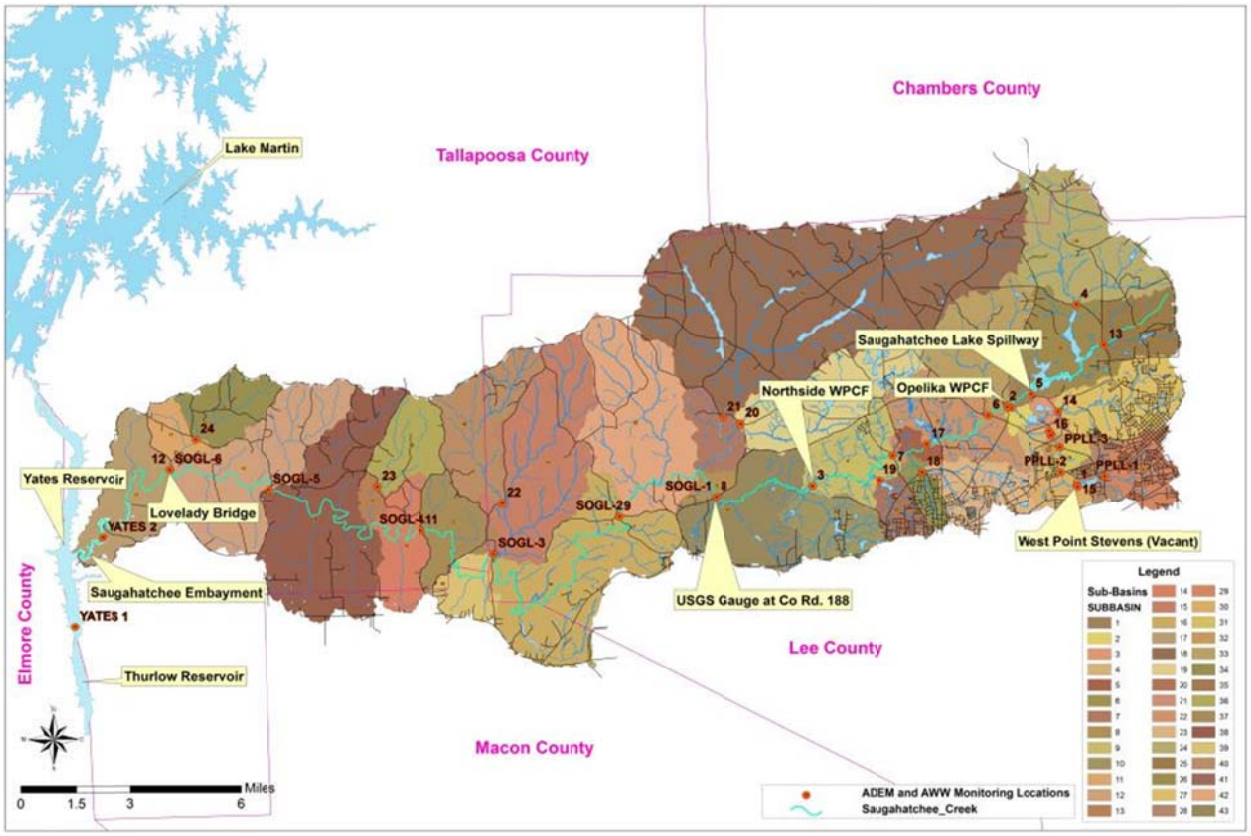


Figure 8 – Map Showing AWW and ADEM Monitoring Locations in Saugahatchee Watershed

4.3 A – Monitoring Plan & Analytical Method

The *Saugahatchee Creek Embayment (Yates Reservoir) TMDL* establishes total phosphorus limits in stormwater runoff of equal to or less than 0.1 mg/L (Waste Load Allocation for Stormwater Discharges or WLA). In order to develop a more thorough understanding of existing phosphorus loading from stormwater runoff and to identify the most practical areas for phosphorus-

targeting BMP deployment, the City performed a landuse/landcover characterization study. This study involved the analysis of TP loading from both "first-flush" samples and time-weighted composite samples in unnamed tributaries to Saugahatchee Creek with small, primarily single-landuse catchment areas. Collectively, they have helped the City better understand the relationship between phosphorus loading and various typical landuse/landcover scenarios, which will help in determining the most appropriate BMP's and where to concentrate implementation efforts.

Although the landuse/landcover characterization study provided valuable information with regards to future BMP selection and concentration, post-BMP installation monitoring for TP within the same basins would not necessarily determine the "effectiveness" or efficiency of the SWMP in achieving the designated WLA (as required of Phase II Permittees). The City believes that a combination of monitoring of TP within the main stem of Saugahatchee Creek as it enters and exits the City's Phase II jurisdictional territory and further support of and/or participation in studies of water quality in the embayment will be most reflective of the collective effectiveness of the City's efforts to reduce phosphorus loading. Existing literature examining the "effectiveness" of specific BMP's to reduce phosphorus (removal efficiency) from stormwater discharges is abundant, thus supporting the use of modeling to provide evidence of the effectiveness of specific BMP's in achieving the stormwater WLA. Additionally, monitoring of TP is highly variable and would not necessarily provide direct evidence of the effectiveness of any particular BMP. Modeling, using well documented pollutant removal efficiency ratings, will allow the City to concentrate the majority of its efforts toward implementation of phosphorus-targeting BMP's without unnecessary expenditures on monitoring of direct BMP "effectiveness" at achieving the WLA.

Therefore, the City shall make all reasonable efforts to conduct quarterly baseflow and storm event monitoring for TP of at least two locations along main stem Saugahatchee Creek. Additionally, the City will continue to support and/or participate, in all practicable capacity, in studies of water quality in the embayment. All monitoring of TP will be performed using EPA Standard Method 365.4 and/or other EPA approved method.

4.3 B – Existing Controls Targeting Nutrients In Saugahatchee Creek Watershed

Stream Buffer Ordinance – The intent of the City's Stream Buffer Ordinance (SBO) is to protect riparian corridors, which are essential to the physical, chemical, and biological integrity of its waterways. The SBO is based on a managed-use type buffer rather than a strict non-disturbed buffer approach. This is implemented in a 3-zoned buffer (streamside, managed use and upland zones) with the width of the buffer determined by the drainage area of the stream as it leaves the property of concern. The City's stream buffer requirements can be found in Section 4.4.7 of the Water Resource Management Design and Construction Manual. Stream buffers have been proven to reduce stormwater pollution and decrease the potential for streambank erosion (and

subsequent in-stream sediment loading). The City will continue to implement these stream buffer regulations during this next permit cycle.

Illicit Discharge Ordinance - Section 3(B), Paragraph 3(a)(iii) of the NPDES General Permit Number ALR04003 states "*To the extent allowable under State and local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system…….and implement appropriate enforcement procedures and actions.*" In the City's Notice of Intent for the initial Phase II Stormwater permit cycle, submitted to ADEM in March 2003, the stated goal was to develop and implement an Illicit Discharge Ordinance by December 2005. This goal was met nearly two years ahead of schedule. A draft copy of the Illicit Discharge Ordinance was reviewed by the *ALOA* Citizens Advisory Committee in November 2003. The Auburn City Council adopted the Illicit Discharge Ordinance on January 20, 2004.

The City's Illicit Discharge Ordinance prohibits any material from being placed into the City's MS4 that is not composed entirely of stormwater, except for discharges that are pursuant to a NPDES permit or discharges from firefighting or emergency management activities.

The City's Illicit Discharge Ordinance provides escalating enforcement procedures for violators of the ordinance. First-time violators are generally notified of the violation and the provisions in the City's Ordinance through a notification letter that is sent to the violator. For repeat violators, the City has the authority to issue a citation to appear in the City's Municipal Court where fines are set forth in Alabama Code 11-45-9 and are generally set at $500 per day per offense.

As recommended in Permit Number ALR04003, the City will evaluate its Illicit Discharge Ordinance on a yearly basis to see what modifications or changes may be needed. The City will continue to aggressively pursue, identify and correct illicit discharges that are found within the MS4.

Stormwater Outfall Reconnaissance Inventory - In 2009, the Water Resource Management Department began a stormwater outfall reconnaissance inventory (ORI) program. The purpose of the ORI program is to walk each watershed in the City's MS4 (six total), conduct an inspection of each stormwater outfall and prepare detailed documentation of each stormwater outfall in the basin being inspected. City staff document illicit discharges as well as potential, likely and possible illicit discharges. The City's ORI program is patterned on recommendations outlined in a manual titled *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (Center for Watershed Protection and Dr. Robert Pitt, October

2004). The City's goal is to prioritize each watershed for inspection based on the methodology outlined in Dr. Pitt's manual, and to inspect each watershed in the City's MS4 as timely and efficiently as possible. The City's ORI program affects all of the target audiences discussed in Section 4.1.

Tacoma Drive Regional Bio-Retention Facility – Much of the built environment within the City of Auburn was developed prior to modern stormwater detention laws, thus retroactive or stormwater retrofit alternatives are often the only practical measure of remediation. The Tacoma Bio-Retention Facility was constructed in 1999 to serve as a regional detention and stormwater quality pond for approximately 260 acres of an urban corridor in northeast and central Auburn. This pond is located on an unnamed tributary to Saugahatchee Creek and serves as both a stormwater detention facility and water quality treatment pond. With an estimated 60% removal efficiency of total phosphorus (average bioretention removal rating), this facility is an invaluable addition to Auburn's effort to control nutrient loading in the Saugahatchee Watershed.

White Street Regional Bio-Retention Facility – As with the Tacoma Drive facility, the White Street Bio-Retention Facility was sited and constructed in 2003 in a drainage basin with older development exhibiting few stormwater controls and/or traditional onsite detention. Although servicing a smaller drainage basin of 40 acres, the White Street Bio-Retention Facility is another adaptive approach at nutrient removal within the Saugahatchee Watershed.

Saugahatchee Streambank Stabilization Project – The Saugahatchee Streambank stabilization project incorporates modern natural channel design techniques in order to stabilize a 200 linear foot reach of an outside meander bend in Saugahatchee Creek. Past excessive bank erosion rendered this area a threat to the City's main northside sanitary sewer interceptor line and a threat of increased internal sediment loading into Saugahatchee Creek. Project deliverables/successes were three log/boulder single-van structures, removal of a large mid-channel bar, reshaping of existing point bar, 1,800 live-stakings, 3,200 square feet of stabilized streambank, reduction of internal nutrient loading in Saugahatchee Creek, and protection of the northside interceptor sewer line.

City of Auburn Street Sweeping and Storm Drain Cleanout Program – Regular street sweeping and storm drain cleanout programs have been proven as effective means to reduce overall pollutant loading from roads and storm sewer systems. The Environmental Services Department of the City of Auburn currently performs street sweeping measures on a monthly basis throughout numerous roadways within the Saugahatchee Watershed. Regular street sweeping measures such as these have been shown to reduce total phosphorus loading from roadways by 1.4-20% and total suspended solids by 4-45%; with variability seen in frequency of sweeping and machine type (Breault et. al., 2003). In addition to the City's street sweeping program, regular inspections and cleanings are performed on an annual basis throughout the storm-sewer system. Cleaning of storm-sewer systems has also been shown to reduce total phosphorus loads by 1-2% when performed on an annual basis (Parrish and Law, 2008). These often forgotten about quality control measures play an important role in the overall reduction of pollutant loading via the storm sewer system within the Saugahatchee Watershed.

Saugahatchee Watershed Management Plan (SWaMP) – The SWaMP was prepared by Auburn University and local stakeholder groups (including Save Our Saugahatchee) to "reduce nutrient and sediment loads into Saugahatchee Creek in order to restore stream water quality to healthy levels for people, fish, and wildlife". The City has been directly involved with SWaMP since its beginning in February of 2005. With funding from U.S. EPA Clean Water Act Section 319(h), the SWaMP has facilitated numerous projects targeting nutrient reduction in the Saugahatchee Watershed (including the City's bank stabilization project described above). The City will continue to participate in the planning and implementation of this plan and the projects it facilitates. More information can be found at www.swamp.auburn.edu.

Storm Drain Marking Project - In an attempt to better educate its citizens about local water resources, watershed boundaries, stormwater, and water quality the City of Auburn, together with Auburn University, began the Storm Drain Marking Program in September of 2006. The intent of this program is to demarcate all storm drain curb inlets with their respective receiving waterbodies. This program began as a contest in which all Auburn elementary school students were given the opportunity to design a logo for each watershed-specific marker within the Auburn area (Parkerson Mill Creek not included at this time). At the end of the contest the four winning designs were placed on 1,000 storm drain markers, of which 1,200+ have already been installed on storm drains in the Auburn area.

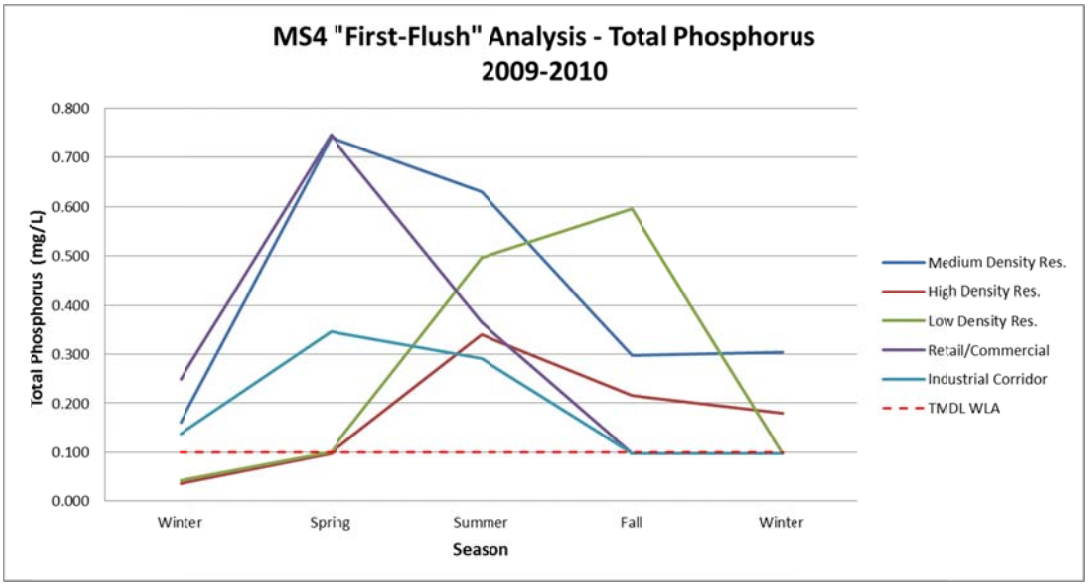
Markers are generally installed by small groups of volunteers and local school children. The installation process allows the volunteers to physically orient themselves with the local watersheds, gives them a better understanding of the basic network and functions of traditional stormwater conveyance systems, and provides for a hands-on educational opportunity about water quality. Project participants also learn of the potential impacts that unwanted pollutants (trash, lawn maintenance waste, detergents, etc.) may have on the receiving waters, In turn, they are also informed of the many ways in which they can do their part in helping to reduce this "loading" and are encouraged to educate their friends and neighbors to do the same.

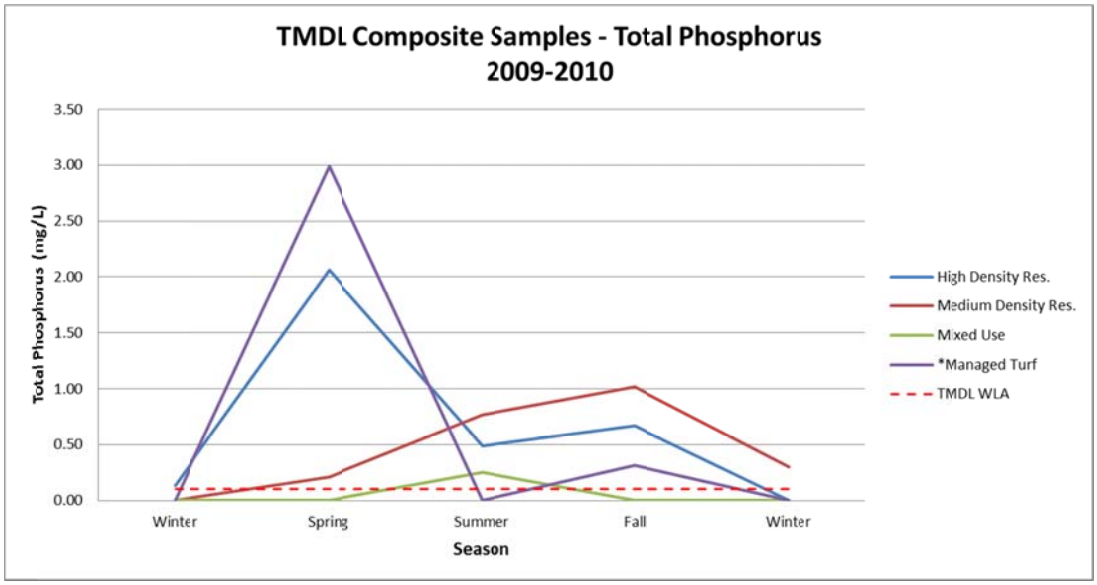
Alabama Smart Yards Incentive Program – The Alabama Smart Yards Incentive Program "is a collaborative effort to reduce the amount and intensity of stormwater runoff from developed lands, as well as the amount of non-point source pollutants flushing into local streams". As a contributing partner to this program, the City will promote the use of the Alabama Smart Yards manual (http://www.aces.edu/pubs/docs/A/ANR-1359/ANR-1359.pdf) throughout the City, and specifically within the Saugahatchee Watershed.

4.3 C – Data Review and Evaluation

Due to the extremely high costs associated with monitoring total phosphorus concentration in numerous stormwater outfalls, the City chose to conduct a broad-based landuse/landcover characterization study. The purpose of this study was 1) to determine if existing stormwater discharges were meeting the TMDL established WLA for TP, 2) to develop a better understanding of the relationship between local landuse/landcover and phosphorus loading, and 3) to identify the best locations for phosphorus-specific BMP deployment. This study involved the analysis of both "first-flush" samples and time-weighted composite samples at various storm sewer outfalls and receiving waters during storm events of 0.75"/24 hours or greater.

Although the City may/may not continue monitoring these locations, samples already obtained and analyzed for this study (between 2009 and 2011) found phosphorus concentrations in stormwater discharges from each landuse/landcover scenario to frequently exceed the TMDL established WLA of 0.1 mg/L. Additionally, seasonal analysis indicates greater phosphorus concentrations in the growing seasons of spring and summer, thus suggesting external loading from fertilizers etc.





With the knowledge obtained through this study and of similar studies performed by Alabama Water Watch, the City has been able to strategically deploy a diverse array of structural and non-structural BMP's (described above) that either directly or indirectly target nutrient loading from stormwater sources. Where applicable, the City has chosen to rely upon commonly accepted nutrient removal efficiencies for each BMP and has chosen not to directly monitor for individual BMP "effectiveness". Specific load reduction estimates, when required, will be documented in the City's annual stormwater quality monitoring report and may utilize the EPA approved modeling tools such as the Spreadsheet Tool for Estimating Pollutant Load (STEPL) to satisfy "effectiveness" criteria. To satisfy the permit condition requiring "representative monitoring", the City will perform quarterly baseflow and storm event monitoring of TP

concentration within Saugahatchee Creek in at least two locations; one as it enters the City's Phase II jurisdictional territory and one as it discharges therefrom. In addition, the City may conduct and/or support additional studies on Saugahatchee Creek and its embayment at Yates Reservoir to determine the overall "effectiveness" of the watershed TMDL to restore water quality to State criteria.

5.0 Other Monitoring Efforts

The City operates an active and progressive stormwater management program, which is greatly enhanced by its equally progressive and active stormwater quality monitoring program. Until the revision of the Statewide General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems, the vast majority of these monitoring activities were already conducted voluntarily by the City. This commitment to the preservation, conservation, and, when necessary, the restoration of its water resources is reflected in the aforementioned Stormwater Quality Monitoring Plan. However, the City is also actively involved in additional water quality monitoring programs not directly associated with its Stormwater Management Program, but equally important in its overall watershed management strategy. A description of two of these additional programs is provided below.

5.1 Safe Harbor Agreement

In September of 2003 the City of Auburn and the Water Works Board of the City of Auburn entered into the 15 year *Chewacla Safe Harbor Agreement* with the US Fish and Wildlife Service (USFWS), the State of Alabama Department of Conservation and Natural Resources, Martin Marietta Materials, Inc., Bob and Fannie Harris, LLC., John W. Pace III, and the Phillips Family Partnership, Ltd. to "implement conservation measures for the fine-lined pocketbook, *Lampsilis altilis*, southern clubshell, *Pleurobema decisum*, and ovate clubshell, *Pleurobema perovatum,* by providing minimum flows and controlling subsidence features in sections of Chewacla Creek in order to enhance and expand the habitat available to the covered species". Specific conservation measures provided by the City include the release of a minimum of 2 million gallons per day from Lake Ogletree to Chewacla Creek, continuous streamflow gauging at six locations, and annual water quality and bioassessments at five locations. More information on the Chewacla Safe Harbor Agreement can be obtained by calling Matt Dunn at (334) 501-3060 or going to http://www.environmentaldefense.net/documents/3488_FinalChewaclaCreekSafeHarbor.pdf.

5.2 Source Water Monitoring Program

For more than 22 years, the City of Auburn and the Water Works Board of the City of Auburn have funded an extensive Source Water Monitoring Program. This program involves bimonthly water chemistry analysis at 15 locations throughout the Lake Ogletree watershed (the City's principal water supply reservoir) and biannual reporting of water quality conditions therein. The studies included in this program include physical, chemical, bacteriological, and mineral analysis of water quality in Chewacla Creek and its tributaries, which allow for advanced

knowledge of potential changes within the watershed and for progressive watershed management decisions. More information on the City's Source Water Monitoring Program can be obtained by calling Matt Dunn at (334) 501-3060.