National Pollutant Discharge Elimination System (NPDES)

Municipal Separate Storm Sewer System (MS4) Permit

City of Prichard

2020 - 2021

Seventh Annual Report

Permit Number ALS000002

Annual Report Period: October 1, 2020– September 30, 2021

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

SIGNATORY AND CERTIFICATION REQUIREMENTS

NPDES MS4 PERMIT ALS000002
ANNUAL REPORT

For

City of Prichard
Prichard, Alabama

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

Jimmie Gardner, Mayor

1. 26. 22
Date

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1.0 GENERAL INTRODUCTION, OVERVIEW, AND SUMMARY

1.1 General Introduction

On November 16, 1990, the U.S. Environmental Protection Agency (EPA) promulgated regulations, under the Water Quality Act of 1987, setting forth application requirements for National Pollutant Discharge Elimination System (NPDES) stormwater permits. The Alabama Department of Environmental Management (ADEM) administers the stormwater program for the State of Alabama.

1.2 Overview and Summary

On November 16, 1990, the Environmental Protection Agency (EPA) ruled that municipalities and industry share the responsibility to improve the water quality of the "Waters of the United States". In accordance with this rule, the EPA created regulations for NPDES Stormwater Permits for municipalities and permits associated with industrial activity. These regulations are aimed at reducing the amount of non-point source pollution that is currently the leading cause of water pollution.

This report represents the seventh (7^{th}) Annual MS4 Report under the newly issued Individual Phase II NPDES Permit (ALS000002). The City of Prichard strives to ensure that our current staff has put in place all the necessary tools to ensure that our Annual Report meets all of the requirements for this fiscal year. This includes continued improvements in training in order to complete our annual reporting in regards to improving and perfecting our wet weather screening. We have engaged a consultant to conduct the screening and analysis through a reputable laboratory, as required under the MS4 monitoring program and controls. The City has been aided by consultants who have helped us implement more extensive training to help facilitate compliance. The City continues to be a part of a group called "PERK" (Prichard Environmental Restorative Keepers), which is an organization formed in April, 2008, to help in the restoration of the City's environment. It was formed as a response to various complaints by citizens regarding a plethora of environmental issues.

The City's improvements have aided in obtaining the necessary training to generate annual reports, obtain accurate wet weather screenings using outside resources, and to conduct the screening using a reputable laboratory.

1.2.1 Annual Rainfall

Prichard experiences approximately 60 to 70 inches of average annual rainfall. In the permit year covered by this annual report, the total rainfall was **83.09** inches (according to the Mobile Area records from the National Weather Service Database) making Prichard one of the rainiest cities in the continental United States. This fact, combined with the age of much of the stormwater infrastructure and the many creeks, streams, sloughs, tributaries, and waterways in the area all serve to present a clear challenge to the City when addressing the issue of stormwater runoff.

1.2.2 Current State of Permitting for the MS4 System

The City was issued an MS4 Permit under the NPDES Permit system by the Alabama Department of Environmental Management (Permit Number ALS000002) on October 1, 2020; this permit expires on September 30, 2025.

1.2.3 MS4 Boundary

The City of Prichard occupies approximately 25.5 square miles. A map showing the MS4 boundary of Prichard is located in the Figures Section (Figure 1). Municipalities adjacent to the City include the unincorporated community of Eight Mile to the east, the City of Chickasaw to the west, the City of Saraland to the north, and the City of Mobile to the South. The City's MS4 boundary is comprised of six sub-watersheds: Hog Bayou, Chickasaw Creek, Eightmile Creek, Gum Tree Branch, Toulmins Spring Branch, and Seabury Creek.

The City's MS4 boundary encompasses four waterbodies that are considered impaired by the U.S. Environmental Protection Agency and ADEM. These waterbodies are included on the 303(d) list or have been assigned a Total Maximum Daily Load (TMDL) for at least one pollutant. Many of the impaired waterbodies flow from, or to, other city/county MS4 boundaries. The table below provides the impaired waterbody name, representative watershed, designated use, type of impairment, pollutant of concern, and source of impairment.

TABLE 1 LIST OF IMPAIRED WATERS

Waterbody	Representative Watershed	Designated Use	Impairment(s)	Source
Chickasaw Creek	Mobile River	Limited Warm Water Fishery	303(d): Metals (Mercury)	Atmospheric Deposition
Eightmile Creek	Chickasaw Creek (Drains into Mobile River)	Public Water Supply/Fish & Wildlife	TMDL: Pathogens	Urban Runoff/Storm Sewers Collection system failure
Gum Tree Branch	Chickasaw Creek (Drains into Mobile River)	Fish & Wildlife	TMDL: Pathogens	Urban Runoff/Storm Sewers Collection system failure
Toulmins Spring Branch	Three Mile Creek	Fish & Wildlife	303(d): Nutrients, TMDL: Pathogens	Urban Runoff/Storm Sewers

2.0 PROGRAM EVALUATION

The objective of the City's MS4 program is to comply with the requirements of the ADEM NDPES Permit (ALS000002). To meet this objective the City of Prichard promotes water quality through public education/awareness, as well as inspecting outfalls for illicit discharge. Careful inspection of outfalls and construction activities will lead to a better awareness of stormwater runoff.

2.1 Major Findings

To assist the City with its enforcement policies, the Administration is in the process of finalizing a new Stormwater Ordinance. The Administration improved the communication among the City departments involved in the MS4 Program. The City received a new NPDES Permit that was effective on December 2014. The City is in the process of molding its MS4 program to reflect the NPDES Permit changes.

Additionally, the City obtained several Sanitary Sewer Overflow (SSOs) reports from the Prichard Water Works and Sewer Board.

The city of Prichard coordinator took several online Stormwater Webinars, one of which included "What's wrong with what we drink, and what can be done?" The coordinator also took a Continuing Education Credit seminar- "Using SARS-COV-2 Virus Detection as an Advance Warning System for Municipal, Industries".

2.2 Major Accomplishments

The following is a list of the City's permit accomplishments in its MS4 Program for the 2020-2021 permit year:

1. City Stormwater Coordinators attended several meetings, sponsored by Mobile Bay National Estuary Program, in association with Stormwater Management.

2. The City organized and participated in several community clean-up activities throughout the City. Pictures are included in Appendix F.

3. The City has partnered with numerous local and regional organizations in addressing the issues litter, public education, and volunteer participation. Regular meetings were scheduled with partner agencies.

4. The City of Prichard is continuing to partner with Mr. Don Bates, Osprey Initiatives LLC, in monitoring and maintaining the Litter Gitter trap.

5. The City continues to improve our MS4 program by engaging in more educational on-line webinars, and attend seminars related to stormwater issues throughout the City.

2.3 Program Strengths and Weaknesses

2.3.1 Program Strengths

The Administration of the City of Prichard is committed to addressing stormwater related issues within the City. The City's SWMPP was created to meet or exceed permit conditions in most areas during the reporting year. Prichard's successes include the following:

- Inter-departmental involvement in the SWMPP, including an emphasis in the cooperative teamwork of, and communication between, all involved departments.
- Inter-departmental relationships within the City help maintain the stormwater quality of the area.
- Public Works Department regularly inspects and maintains the drainage and road systems within the City.
- Inspection Department regularly inspects outfalls (dry weather screening) and new construction sites within the City.
- Pamphlets and other materials for public awareness are distributed by the Inspection Department.
- The City has submitted approximately 50 letters for Best Management Practices (BMPs) to most of the business community in Prichard.
- Water Quality testing and analysis follows the monitoring plan.
- Stormwater training programs throughout multiple departments.
- Ongoing SWMPP development with continual meetings to discuss possible improvements.
- City Council members are conducting more trash clean ups with citizens and volunteers for the City.

2.3.2 Program Weaknesses

The major program weaknesses for the City continue to be a lack of funding, insufficient personnel, and the inability to prevent citizens from illegally dumping in areas around the City. "No illegal dumping" signs have been placed along streets and streams around the City limits informing the public that fines and penalties will be enforced if a violation occurs.

2.4 Future Direction of the Program

The City will continue to place high priority on its MS4 Program. Future directions include:

- Continued training of City employees in BMPs and pollution prevention,
- Continued efforts to streamline the inter-departmental communications on litter and stormwater issues,
- Continued stormwater monitoring, IDDE monitoring, and construction site inspections,
- Continued efforts in public education,
- Cooperative community efforts with a variety of stakeholders for the continual improvement of the City's MS4 Program,
- Continue to improve in the collection of data required by the MS4 Permit,
- Continue to ensure permits for applicable construction sites and landfills are in place.
- The City plans on posting the MS4 Annual Report, NPDES Permit, and SWMPP Plan on the City's website.

2.5 Required Actions Not Performed and Reasons Not Accomplished

The City's overall Stormwater Program has been improved through a transition to a new NPDES Permit. However, areas in need of improvement have been identified. The following items have been identified as falling short of City goals for the MS4 program, and plans for improvement are as follows:

- The City was has trained some departments on SOPs (Standard Operating Procedures). Currently, the SWMPP is still under review by ADEM. It has been the City's plan to review, revise, and add SOPs to the SWMPP following the approval from ADEM. Although the SWMPP has not been finalized, the City has implemented its program to match the submitted SWMPP to the Maximum Extent Practicable.

2.6 Program Effectiveness

The City's MS4 Program improved during the permit year and continues to improve. Significant improvements include, but are not limited to:

- Internal departmental communication and numerous City departments engaged in the Stormwater Program and associated requirements.
- Increased public awareness of stormwater concerns through the adoption of new ordinances, educational outreach, and community meetings with environmental organizations.
- Improved Public Education through the development stormwater brochures.

One of the main reasons the City is confident of the future success of its MS4 Program is that the City's Stormwater Management Program Plan (SWMPP) will be part of the City's routine planning and training program. Using the SWMPP will help organize and guide the City Departments to comply with the requirements of the NPDES Permit. The City will continue to update the SWMPP, when applicable, to ensure the City maintains compliance with the Permit and is continuously improving the City's MS4 program.

3.0 SUMMARY OF STORMWATER MANAGEMENT PROGRAM ELEMENTS

The following section provides a summary of our stormwater management program activities, as required by NPDES Permit No. ALS000002. Included is a brief description of each program or activity implementation, as well as progress or challenges encountered during the fiscal year. All significant developments or changes to the number or type of activities, frequency or schedule of activities, or the priorities or procedures for specific management practices are explained. With the new SWMPP, this permit year marked a transition in the City's approach to its stormwater management program. The MS4 program is always progressing, and the City will continue to expand the BMPs that are successful and improve upon the BMPs that fell short of the City's expectations.

3.1 Stormwater Collection Systems Operations

3.1.1 Catch Basins

The City currently inspects, cleans, and maintains catch basins. The inspections are performed by the Public Works Department. The City is currently preparing daily worksheets as well as the Catch Basin Inspection spreadsheet to ensure accuracy and consistency of information received. A map of the location of Catch Basins has been provided in the Figure Section.

Catch basins are also cleaned after receipt of complaints by citizens. The City inspected/cleaned approximately 2500 catch basins in the 2020-2021 permit year. The City removed approximately 2200 cubic yards of debris from catch basins during this time.

Under the management and supervision of the Inspection Department, MS4 training is provided to employees involved in catch basin cleaning.

Maintenance includes resetting slab tops, repairing slab tops, replacing slab tops, repairing the box, repairing cave-ins, resetting grates/frames, and replacing grates/frames.

3.1.2 Litter Trap

Don Bates, Osprey Initiative LLC, has installed two prototype litter traps (Litter Gitters) for the City, which he maintains and keeps records of. The first trap was installed on Toulmin Springs Branch, off of South Craft Highway on April 27, 2018 and the second trap was installed on Toulmins Springs Branch, off of Sweeneys Lane on August 14, 2018. The spreadsheet is provided in Appendix A. A map to indicate the area where the litter boom on South Craft Highway is located is provided in Figure 2-A. A map to indicate where the litter boom on Sweeneys Lane is located is provided in Figure 2-B. Due to COVID 19, no new traps have been added or monitored.

3.2 Public Education and Public Involvement

3.2.1 Educational Activities

Public education and outreach is an important element of the City's MS4 program. The City operates a City-wide public education and outreach program through the use of public meetings, events, and educational material. The City is also involved with the public by carrying out group activities focused on storm drain pollution, contributing to volunteer community actions to restore and protect local water resources, and seeking public input on the SWMPP. Increasing public awareness of stormwater pollution concerns and prevention ultimately serves to reduce the contribution of pollutants in stormwater runoff.

The City utilizes a number of mechanisms to disseminate education and outreach messages which include, but are not limited to, public events, social media, news releases/advertisements, and brochure distribution. A number of brochures were created and distributed in the City buildings this permit year. The City utilizes an informative coloring book, stormwater/BMP brochures, as well as Business Owner Handouts (regarding BMPs). The City estimated that approximately 50 copies of each type of educational material were handed out during the 2020-2021 permit year. Educational material, information on public events, and news releases/advertisements is included in Appendix D.

The City's Inspections Department, Environmental Department, and the Mayor's office receive tips for reporting acts of littering from citizens. This information is utilized to increase enforcement in those areas as well as public education.

3.2.2 Public Participation and Involvement

The City will seek public input during the preparation of the current SWMPP. With the assistance of ADEM, the SWMPP and Annual Report will be available for public review. For future revisions to the SWMPP, the City will be open to comments from citizens. The City is invested in Public Participation and Involvement and looks to improve on the City's website by including the NPDES Permit, Annual Report, and SWMPP.

The City organizes and participates in cleanup events focused on removal of litter, floatables, and debris from area waterways. City Councilwoman Stephani Norwood, Council District 2 had a total of 12 cleanup events. She had a total of 27 volunteers. Mrs. Norwood and a group of volunteers cleaned up litter and debris. Participants included Councilwoman Ossia Edwards, John Foster, Mayor Jimmie Gardner, T.J. Petway, Jasmine Pruitt, and Prichard Parks and Recreation. Sponsors included McMillian BBQ, Pastor Lewis, and Pastor Your. Pictures are included in Appendix F.

A spring clean-up was held in District 2 & 5 Saturday March 27, 2021. The clean-up was at Prichard Stadium, sponsored by Councilwomen Ossia Edward and Stephani Norwood. Another summer cleanup was held on Saturday, June 26, 2021, sponsored by Council woman Stephani Norwood. The cleanup was located in the Wasson Avenue area and other selected streets were included. The volunteers and the Council members collected

trash and debris.

3.3 Illicit Discharge Detection and Elimination

3.3.1 Introduction

The Illicit Discharge and Improper Disposal Program is established by the City to find and eliminate illicit discharges. Dry weather screenings take place at outfalls throughout the City's watersheds and sub-watersheds. Discharges located during dry weather screenings are collected and analyzed to determine if pollutants are present. The source of illicit discharges are identified and notified immediately. In addition to the Inspection Departments dry weather screenings, the Public Works Department collects litter from the rights-of-way and reports suspected discharges to the Stormwater Management Team. The City is also in the process of adopting a Stormwater Management Ordinance to help enforce any illicit discharge violations within the City.

The City conducts dry weather screening to detect and eliminate illicit discharges to the City's MS4. A map showing the locations of known outfalls and City owned structural controls can be found in the Figures Section (Figure 3). The City is in the process of creating a Stormwater Ordinance that will include procedures as well as the enforcement on illicit discharges.

3.3.2 Program to Locate Illicit Discharges and Improper Disposal into the MS4

Dry weather screening was performed in accordance with EPA's guidance manual, *Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments,* Center for Watershed Protection, October 2004. Each outfall is to be screened during the life of the permit; areas of high risk are to be screened more often, if possible. During the 2020 fiscal year, 25 outfalls were monitored for illicit discharge. Additionally, outfalls were inspected when a suspected illicit discharge was reported by a citizen or City employee. The IDDE Tracking spreadsheet can be found in Appendix A. No illicit discharges were observed this fiscal year. No enforcement action was taken during this fiscal year.

3.3.3 Sanitary Sewer Overflows (SSOs)

The City works closely with the Water Works & Sewer Board of the City of Prichard to minimize the impacts from any infiltration, inflow, sewer breaks, or other problems throughout the year. Several SSOs were reported by Prichard Water and Sewer due to flooding from several hurricanes.

3.3.4 IDDE Training

The Inspection Department receives Illicit Discharge Detection and Elimination (IDDE) training for applicable employees. A copy of the certificate given to employees that complete this training can be found in Appendix B. Additionally, employees performing IDDE tasks will be familiar with the new Stormwater Ordinance once completed.

3.3.5 Public Reporting of Illicit Discharges

The City is currently reviewing and evaluating the effectiveness of public reporting and public education by comparing statistical analysis of results from prior years. As data is gathered from future complaints, an evaluation will be completed.

3.3.6 Enforcement

The City, in this reporting year, has not had any illicit discharges reported. We have an Environmental Department which is currently enforcing any litter or trash complaints and, if necessary, citations are written and the violator must report to Environmental Court which is held every Tuesday.

3.4 Construction Site Stormwater Runoff Control

3.4.1 Site Plan Review

The City of Prichard requires all new commercial and subdivision projects to submit development drainage calculations to the City for approval. An Erosion and Sedimentation Control Plan is required to be on file at the City prior to any land-disturbing activity that is greater than or equal to one (1) acre in size. The City encourages the education of construction site operators in the proper use and maintenance of BMPs through the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas.

The City continues to administer procedures and inspect both new developments and redevelopments. No building permits shall be issued until the required site development permit and stormwater facilities are approved by the Stormwater Coordinator. All new developments within the City of Prichard were inspected via the Inspection Department for the City of Prichard. Also, we have developed checklists and sheets to ensure that all new construction sites have all the necessary erosion controls in place (i.e. silt screens, hay bales, etc.)

3.4.2 Construction Site Inspection

The Inspection Department of the City of Prichard is responsible for inspecting construction sites. The inspection checklist has been created and will be included in the SWMPP.

Employees of the City who inspect construction sites are trained in the identification of appropriate construction BMPs. The training is tracked through the Inspections Department. A copy of the training certificates can be found in Appendix B.

3.4.3 Enforcement Response Plan for Construction Site Violations

If any violations occur as far as construction sites are concerned, the City will issue written warnings and notices of violation and finally a citation if necessary.

The City also inspects construction areas in response to complaints from citizens. Construction complaints are directed to City Inspections Department. This fiscal year there were zero (0) complaints. During the 2020-2021 fiscal year, the City did not have any enforcement action required on active qualifying construction sites.

3.5 Post-Construction Stormwater Management

3.5.1 Requirements and Standards

The City is currently addressing post-construction stormwater runoff by implementing Land Disturbance Ordinance #1952 and Zoning Ordinance #2083.

3.5.2 Post-Construction Inspections

Post-Construction inspections were not required for this year of the Permit. A Post-Construction Inspection Checklist is in the process of being created for use during future inspections.

Procedures for post-construction inspections, including enforcement procedures, have been added to the Stormwater Ordinance.

3.6 Pollution Prevention/Good Housekeeping

The NPDES Permit requires the City to develop, implement, and maintain a program that will prevent or reduce the discharge of pollutants in stormwater runoff from municipal operations to the MEP. To meet this requirement, the City employs BMPs that result in pollution prevention and also utilize good housekeeping measures at its municipal facilities.

3.6.1 Pollution Prevention

Pollution prevention includes those measures that involve roadways, rights-of-way, recycling, and stormwater management systems.

The City operates a street sweeper upon request, weather permitting. Public paved streets are swept by request or as determined by the Public Works Department. For the 2020-2021 permit year, the City of Prichard collected approximately 19,000 cubic yards of material from street sweeping.

The City is also responsible for maintaining vegetation within right-of-way ditches, medians along public roads, and the grounds of municipal facilities (with the exception of some leased properties). Public Works Departments do not have equipment capable of collecting grass clippings, though personnel are trained to direct clippings away from roads and stormwater inlets. The City also encourages businesses to maintain right-of-way ditches that are adjacent to their location.

The City currently relies on inmates from local correction facilities and persons fulfilling community service hours, under the supervision of Public Works staff, to remove litter from right-of-ways. The City relies on persons fulfilling community service hours, under the supervision of Parks and Recreation staff, along with Public Works light duty personnel, to remove litter from parks. The Public Works Street Department hauled and disposed of 3,000 cubic yards of trash from the City of Prichard’s right-of-ways. An example of the City’s Public Works Weekly Reports can be found in Appendix C.

3.6.2 Good Housekeeping

The SWMPP includes the Inspection Plan and Schedule for municipal facilities. This Plan will include the procedures for inspecting the facilities for good housekeeping practices, as well as the checklist used. The City owns more than 24 facilities including various office buildings, equipment yards, garages, parking lots, pools, parks, and a golf course. An inventory of municipal facilities is provided in Table 3. An inspection schedule has been prepared to ensure that all facilities are inspected within the five-year inspection cycle.

Municipal facilities are regularly inspected by the Inspections Department. An inspection checklist is provided in the SWMPP. The Public Works facility and the Fire Department facilities are identified as locations that are required to be inspected annually. Inspection Department personnel receive training once per the permit cycle. Documentation of training is provided in Appendix B.

Good housekeeping involves sound practice in operations and maintenance of vehicles and equipment, material storage practices, material inventory controls, routine and regular clean-up schedules, maintaining well organized work areas, and educational programs for employees about all of these practices.

The City's SOP's include the following;

- Equipment Washing,
- Street Sweeping,
- Maintenance of municipal roads: Public streets, roads, and highways, including but not limited to unpaved roads, owned operated or under the responsibility of the Permittee,
- Storage and Disposal of chemicals and waste materials,
- Vegetation control, cutting, removal, and disposal of the cuttings,
- Vehicle Fleet/Equipment Maintenance and Repair,
- External Building Maintenance,
- Material Storage facilities and storage yards.

4.0 SUMMARY OF PROPOSED STORMWATER MANAGEMENT PROGRAM MODIFICATIONS

The Stormwater Management Program Plan (SWMPP) is in the process of being finalized and approved by ADEM. Once the Plan has been approved it will serve as the guide for the City of Prichard's MS4 success.

5.0 FISCAL ANALYSIS

5.1 2021 Fiscal Analysis

Funding for the Prichard NPDES MS4 program is derived from a one-dollar ($1.00) fee placed on all residential, industrial, and commercial City water bills. This money is expected to provide funding for the MS4 program and improvements within the stormwater management division. The MS4 budget for the City of Prichard in the 2020 fiscal year is as follows:

- **Salaries** .....$ 57,750.00
- **Gas/Oil** .....$ 1,000.00
- **Training/Travel** .....$ 2,000.00
- **Engineering/Sub-Contracts**.....$ 1,500.00
- **Cellular Phone** .....$ 500.00
- **FICA City's Share**.....$ 3,700.00
- **Supplies** .....$ 6,000.00
- **South Alabama Regional Planning** .....$ 1,500.00

Total **$ 73,950.00**

5.2 Current Fiscal Analysis

It is anticipated that the current year budget will remain approximately the same.

6.0 DATA SUMMARY

6.1 Storm Event Monitoring

For the 2021 fiscal year, the City monitored three (3) streams located in Prichard's MS4. The stormwater sampling protocol was performed in conformance with EPA 833-B-92-001 "EPA NPDES Storm Water Sampling Guidance Document" (July 1992) as well as Part III.4 in the NPDES permit. The City will monitor all impaired streams during the permit cycle.

Chickasaw Creek is an impaired stream located within the City of Prichard's MS4 boundary. In this region of the State, Mercury is deposited atmospherically with no practical means to influence the source through the MS4 program. As a result, Chickasaw Creek will not be monitored for Mercury; however, three (3) impaired water bodies will be monitored annually to establish the base-line values and determine the overall impact. The three streams monitored are Toulmins Spring Branch, Eightmile Creek, and Gum Tree Branch. The locations were monitored based on their listed impairments:

Waterbody	Representative Watershed	Designated Use	Impairment(s)	Source
Chickasaw Creek	Mobile River	Limited Warm Water Fishery	303(d): Metals (Mercury)	Atmospheric Deposition
Toulmins Spring Branch	Three Mile Creek	Fish & Wildlife	303(d): Nutrients, TMDL: Pathogens	Urban Runoff/Storm Sewers
Eightmile Creek	Chickasaw Creek (Drains into Mobile River)	Public Water Supply/Fish & Wildlife	TMDL: Pathogens	Urban Runoff/Storm Sewers Collection system failure
Gum Tree Branch	Chickasaw Creek (Drains into Mobile River)	Fish & Wildlife	TMDL: Pathogens	Urban Runoff/Storm Sewers Collection system failure

The three previously listed water bodies were monitored for the following parameters:

- pH
- Temperature (°F)
- DO (mg/L)
- Conductivity (us/cm)
- ORP (mV)
- Salinity (PSU)
- Fecal Coliform (CFU/100 mL)
- E. Coli (MPN/100 mL)
- Ammonia (mg/L)*
- Total Kjeldahl Nitrogen (mg/L)*
- Nitrate Nitrite as N (mg/L)*
- Total Phosphorus (mg/L)*
- Total Nitrogen (mg/L) *

Note: * represents parameters monitored at the Toulmins Spring Branch outfall. All other parameters were monitored at each location.

The NPDES permit and the draft SWMPP require that all of the impaired streams in the City's MS4 boundary are monitored annually. Hog Bayou is not listed as an impaired stream on the current 303(d) list or the TMDL list. The results of the storm event sampling and annual pollutant loading calculations can be found within Appendix E of this report.
Storm event data for each sampling event can be found in Table 5 found below.

Precipitation for this fiscal year (October 1, 2020 through September 30, 2021) was approximately **83.09** inches (according to the National Weather Service Forecast Office's archived climate reports for the Mobile Regional Airport). Ammonia (mg/L) was below analytical detection limits. The lowest pH for all streams was determined to be 6.6 at the Eighmile Creek sampling point, with the highest pH observed to be 7.5 at the Toulmins Spring Branch sampling point. E. coli concentrations were above detection limits in several of the samples. A summary of analytical results for the 2020-2021 year are provided below in table 6.

TABLE 3 STORM EVENT DATA				
Watershed	**Date**	**Duration (hr.)**	**Rainfall (in.)**	**Time (hr.) Since last Rain Event**
Eightmile Creek	03/30/2021	1	0.32	133
Upstream Gum Tree Branch	03/30/2021	1	0.32	133
Gum Tree Branch	03/30/2021	1	0.32	133
Upstream Toulmins Spring Branch	03/30/2021	1	0.32	133
Toulmins Spring Branch	03/30/2021	1	0.32	133

TABLE 4 2019-2020 ANALYTICAL RESULTS					
Parameter	**Upstream Toulmins Spring Branch***	**Toulmins Spring Branch***	**Eightmile Creek**	**Upstream Gum Tree Branch**	**Gum Tree Branch**
pH	7.4	7.5	6.6	7.4	7.1
Temperature (°F)	76.3	79.0	74.3	76.8	74.1
DO (mg/L)	4.98	6.00	8.22	4.14	3.64
ORP (mV)	76.1	89.1	62.5	65.3	73.3
Conductivity (µs/cm)	122.0	118.8	60.6	94.9	171.8
Salinity (PSU)	0.06	0.06	0.03	0.04	0.09
Fecal Coliform (CFU/100 mL)	2900	3200	600	3700	2500
E. Coli (MPN/100 mL)	>2400	>2400	650	2000	>2400
Ammonia (mg/L)*	<0.050	<0.050	N/A	N/A	N/A
Total Kjeldahl Nitrogen (mg/L)*	1.2	0.79	N/A	N/A	N/A
Nitrate Nitrite as N (mg/L)*	<0.050	0.14	N/A	N/A	N/A
Total Phosphorus (mg/L)*	0.12	0.10	N/A	N/A	N/A
Total Nitrogen (mg/L) *	1.2	0.93	N/A	N/A	N/A

*These parameters are only analyzed for Toulmins Springs

6.2 Storm Event Monitoring Data Discussion

The analytical data from the sampling events is provided in Appendix E. Methods used for evaluating data were performed in concurrence with EPA 833-B-92-002 "EPA Manual for the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems" (November 1992) as well as Part III in the NPDES permit.

Analytical data was utilized for comparison with water quality standards. Comparisons of data were conducted using the ADEM Water Quality Program Volume I (April 2014) and EPA Benchmark Limits for Stormwater Discharges (http://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table). A brief summary for each stream is provided in the following sections.

- Gum Tree Branch has an established TMDL for pathogens, specifically fecal coliforms. Comparisons of this year's data with State water quality standards indicate that all parameters fell within the acceptable limits for Fish and Wildlife waters except for Dissolved Oxygen, Fecal Coliforms, and E. coli. Fecal coliform concentrations for Gum Tree Branch (2500 cfu/100mL) exceeded the established single sample maximum criteria of 2000 cfu/100mL. Although higher than the established criteria, Fecal Coliform concentrations were fairly normal compared to historical data, and are presumably much lower than the previous year, which had concentrations "too numerous to count". E. coli concentrations were above the detection limit of 2400 MPN/100mL, which exceeded the established single sample maximum criteria of 487 MPN/100mL and which is significantly higher than the previous year (1300 MPN/100mL). The Dissolved Oxygen (DO) concentration (3.64 mg/L) was greater than the previous year (2.7 mg/L), but the sample was still lower than the minimum daily concentration of 5.5 mg/L set by ADEM. The City of Prichard also sampled from an upstream section of the stream's established sampling point to determine the magnitude of the impact of the City to the stream. In the case of Gum Tree Branch, the E. coli concentrations were lower in the upstream sample (2000 MPN/100mL), although still above the maximum criteria.

- Toulmins Spring Branch is listed as a 303(d) stream for nutrients, and has an established TMDL for Pathogens, specifically fecal coliforms. Comparisons of this year's data with State water quality standards indicate that all parameters fell within the acceptable limits for Fish and Wildlife waters, as well as below EPA benchmarks, except for Fecal Coliforms and E. coli. Fecal coliform concentrations for Gum Tree Branch (3200 cfu/100mL) exceeded the established single sample maximum criteria of 2000 cfu/100mL. Although higher than the established criteria, Fecal Coliform concentrations were fairly normal compared to historical data, and are presumably much lower than the previous year, which had concentrations "too numerous to count". E. coli concentrations were above the detection limit of 2400 MPN/100mL,

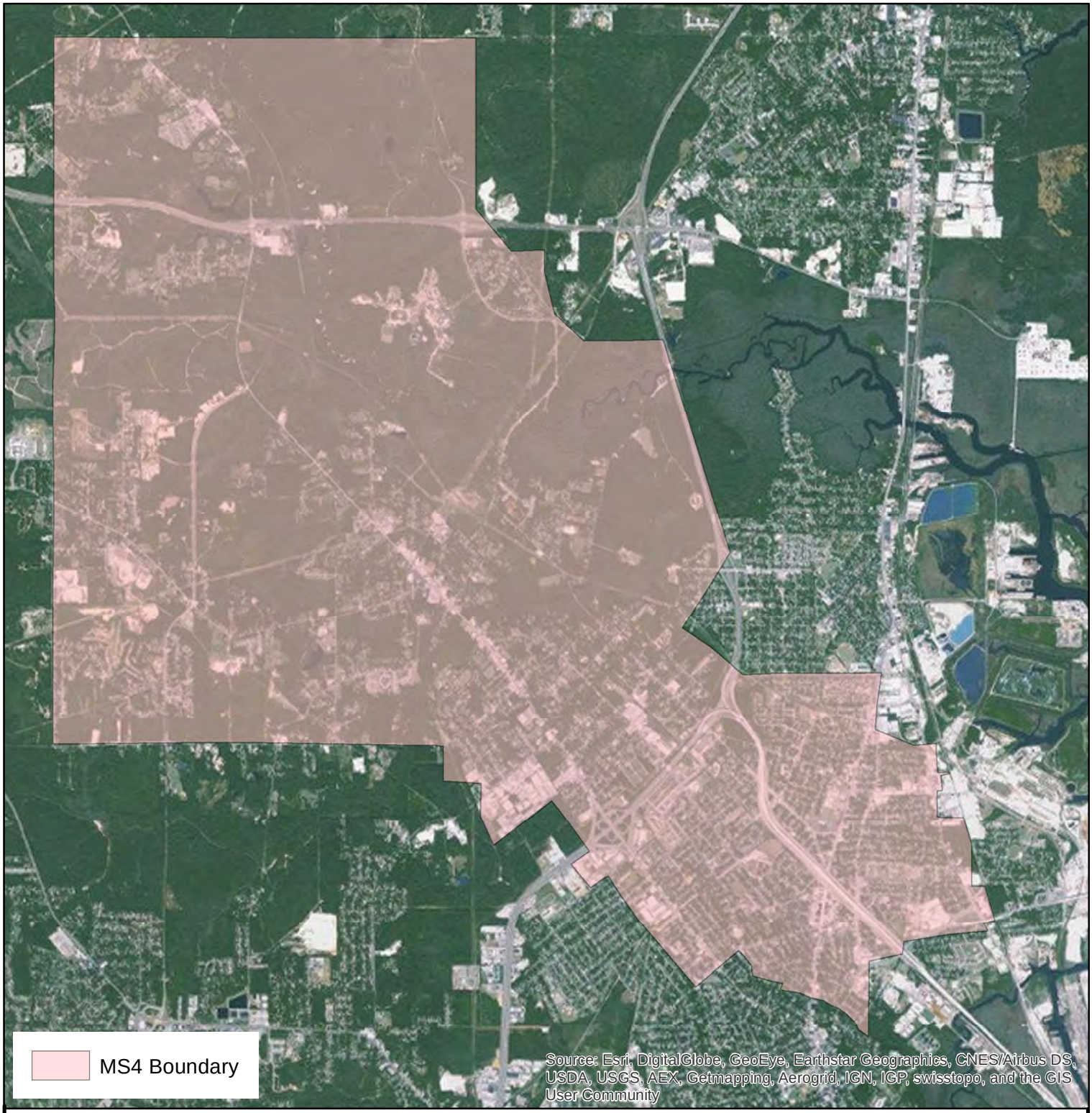
which exceeded the established single sample maximum criteria of 487 MPN/100mL and which is significantly higher than the previous year (1300 MPN/100mL)? Nutrient concentrations were higher than the previous year, but were average, historically (shown further in Appendix E). The City of Prichard also sampled from an upstream section of the stream's established sampling point to determine the magnitude of the impact of the City to the stream. In the case of Toulmins Spring Branch, no parameter appeared to be particularly impacted.

- Eightmile Creek has an established TMDL for Pathogens, specifically fecal coliforms. Comparisons of this year's data with State water quality standards indicate that all parameters fell within the acceptable limits for Fish and Wildlife waters, except for E. coli. E. coli concentrations (650 MPN/100mL) exceeded the established single sample maximum criteria of 487 MPN/100mL. However, the concentrations were significantly lower than the previous year.

Comparisons between the sampled streams were conducted for the purposes of determining general water quality. Historical data was also reviewed to identify potential trends developing between streams, and can be found in Appendix E.

Results from all three streams fell within the required criteria established by ADEM for the specified water quality classification, with the exception of Fecal Coliforms, E. coli and Dissolved Oxygen. Fecal Coliform levels, although above the established criteria for all but Eightmile Creek, are far lower than the previous year and are on the lower end, historically. E. coli concentrations were greater than the lab's detection level for all except Eightmile Creek, and are presumably significantly elevated, compared to historical norms. The elevated levels of E. coli and Fecal Coliform were similar in the upstream samples of Toulmins Springs and Gum Tree Branches, however, implying minimal impact from the City. Elevated levels of Fecal Coliforms and E. coli usually could be attributed to contributing nonpoint sources such as urban runoff, trash, and domestic animals within the City, but the lack of disparity between the upstream and downstream samples indicates a much weaker correlation to the potential impact from the City's MS4. Although they were lower than the required level for Gum Tree Branch, Dissolved Oxygen levels have been historically low at these streams and this year's levels were higher than the historical norms for each stream. These streams will be monitored closely to see if the low levels for Dissolved Oxygen continue. Future data collection of the impaired streams will allow for the development of baseline values and assist in determining the impact of the City's MS4 on the health of the receiving waters.

FIGURES



Scale

0 4,250 8,500 17,000

Feet

N

W E

S

City of Prichard

Permit Number ALS000002

PAYNE ENVIRONMENTAL SERVICES

Figure 1

MS4 Boundary

Scale

0 70 140 280

Feet

N W E S

City of Prichard

Permit Number ALS000002

South Craft Highway,

Prichard, Mobile County, Alabama

PAYNE ENVIRONMENTAL SERVICES

Figure 2 - A

Litter Trap Location Map

Craft Highway Litter Trap

Drawn By: KDC

Scale

0 80 160 320

Feet

N W E S

City of Prichard

Permit Number ALS000002

West Sweeneys Lane,

Prichard, Mobile County, Alabama

PAYNE ENVIRONMENTAL SERVICES

Figure 2 - B

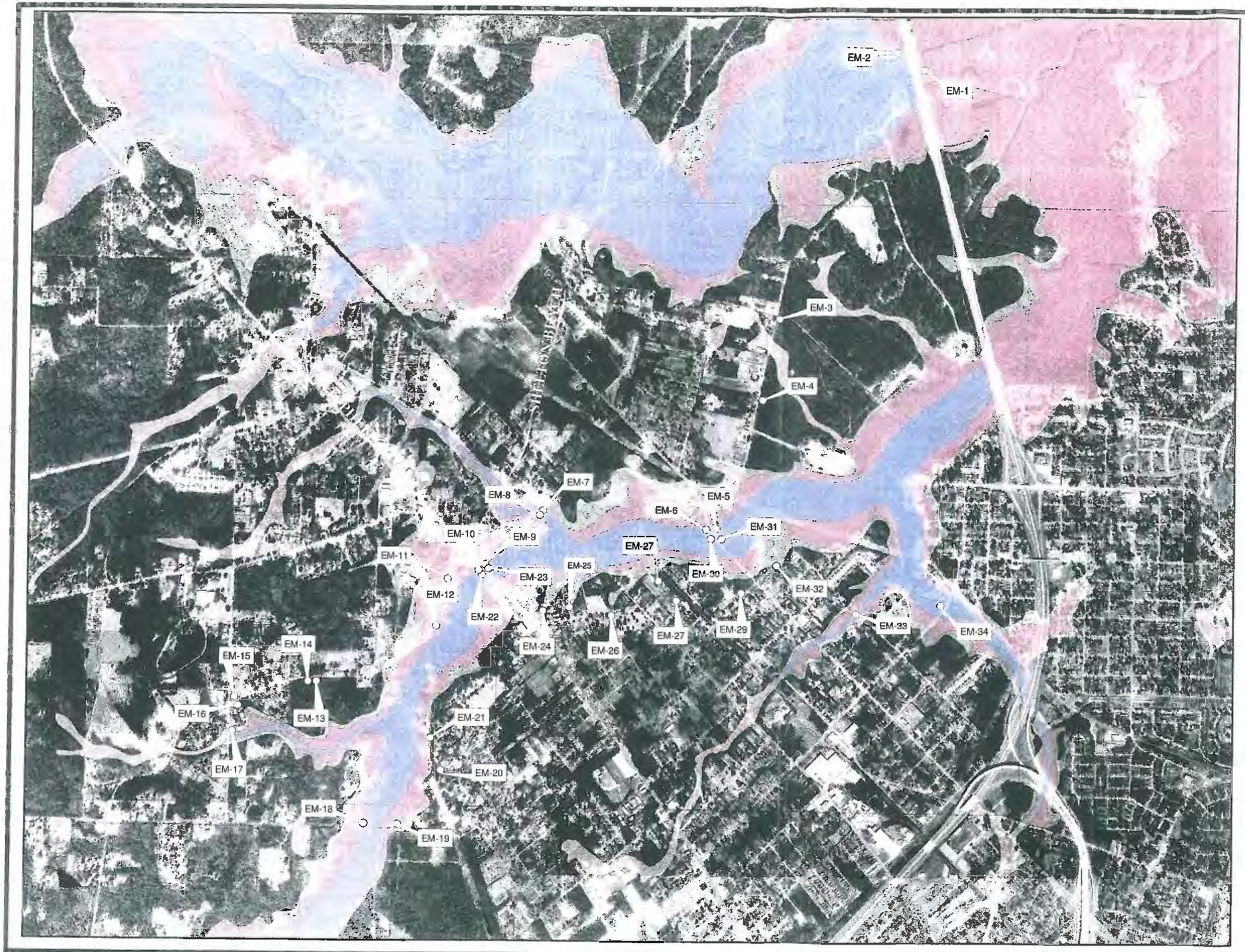
Litter Trap Location Map

Sweeneys Lane Litter Trap

Drawn By: KDC

FIGURE 3

IDDE MAP(S)



N
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LEGEND

- EM POINT

ZONE

- LOW RISK AREA
- 500 - YEAR FLOOD AREA
- 100 - YEAR FLOOD AREA
- 100 - YEAR FLOOD AREA
- FLOODWAY

NO BASE FLOOD ELEVATION DETERMINED

0 0.1 0.2 0.3 0.4 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE EM - EIGHT MILE CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

LEGEND

TA POINTS

FLOODWAY

ZONE

LOW RISK AREA

500 - YEAR FLOOD AREA

100 - YEAR FLOOD AREA

100 - YEAR FLOOD AREA
NO BASE FLOOD ELEVATION
DETERMINED

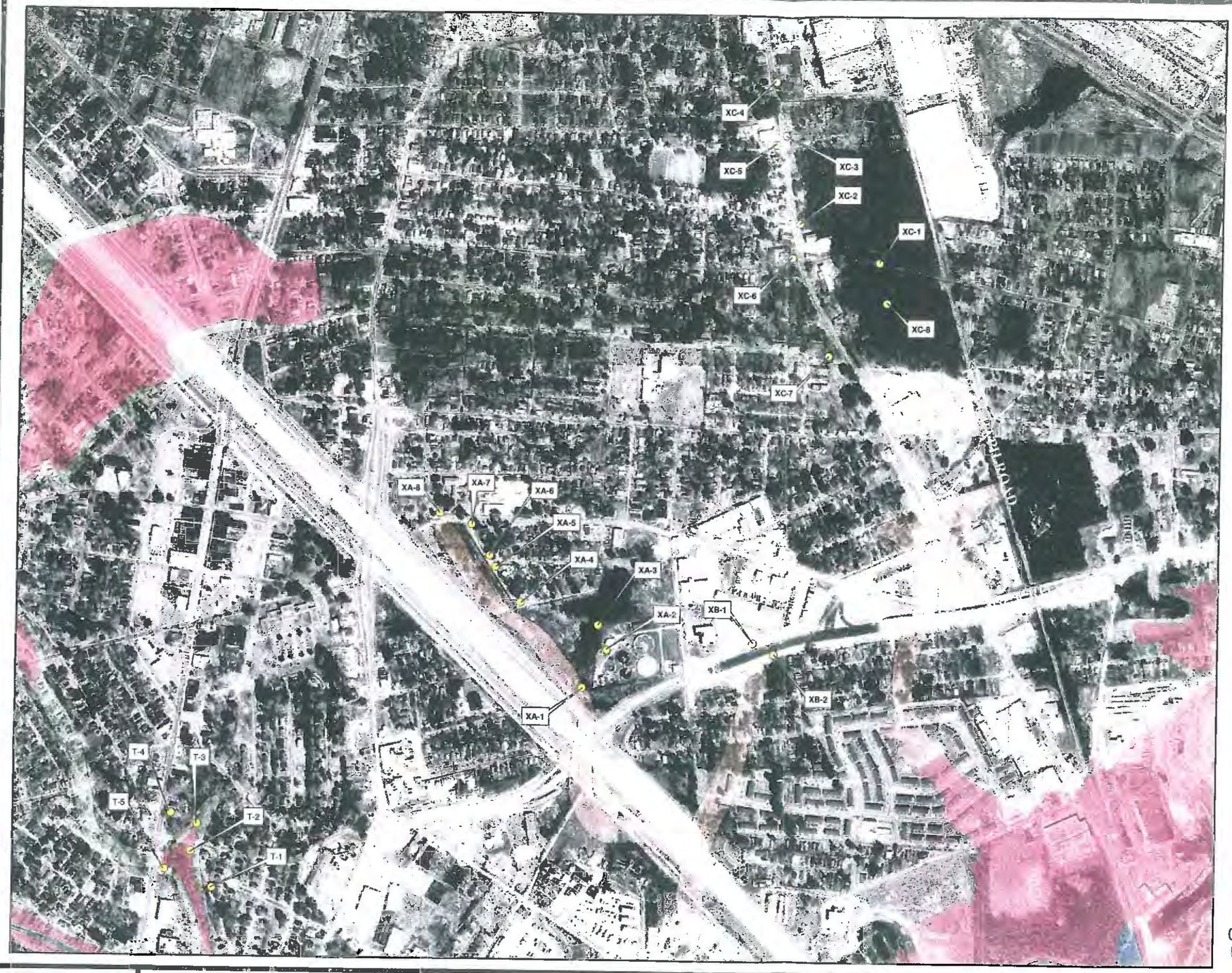
0 0.2 0.4 0.6 0.8 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE TA - TOULMINE SPRING WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008



N
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LEGEND

- X AND T POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.1 0.2 0.3 0.4 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE T - TOULMINE SPRING WATERSHED
LINE XA AND XB - THREE MILE CREEK WATERSHED
LINE XC - MOBILE BAY WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

- HB POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

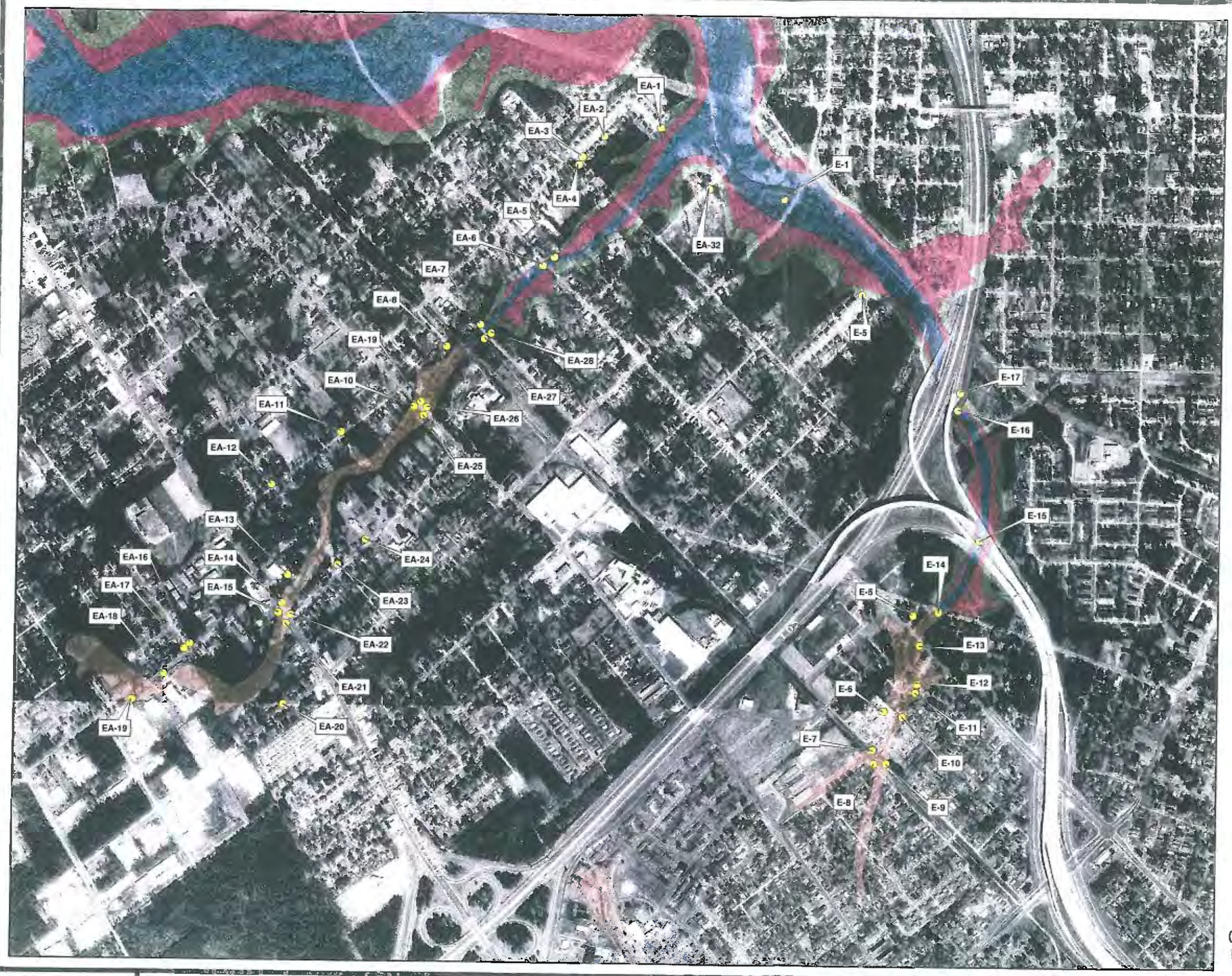
0 0.06 0.12 0.18 0.24 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE HB - HOGS BAYOU WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008



N
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LEGEND

- E AND EA POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.1 0.2 0.3 0.4 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE E AND EA - EIGHT MILE CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

- EB POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.07 0.14 0.21 0.28 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE EB - EIGHT MILE CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.07 0.14 0.21 0.28 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE EC AND ED - GUM TREE BRANCH WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

- SB POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.07 0.14 0.21 0.28 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE SB - SEABURY CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

- SC POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

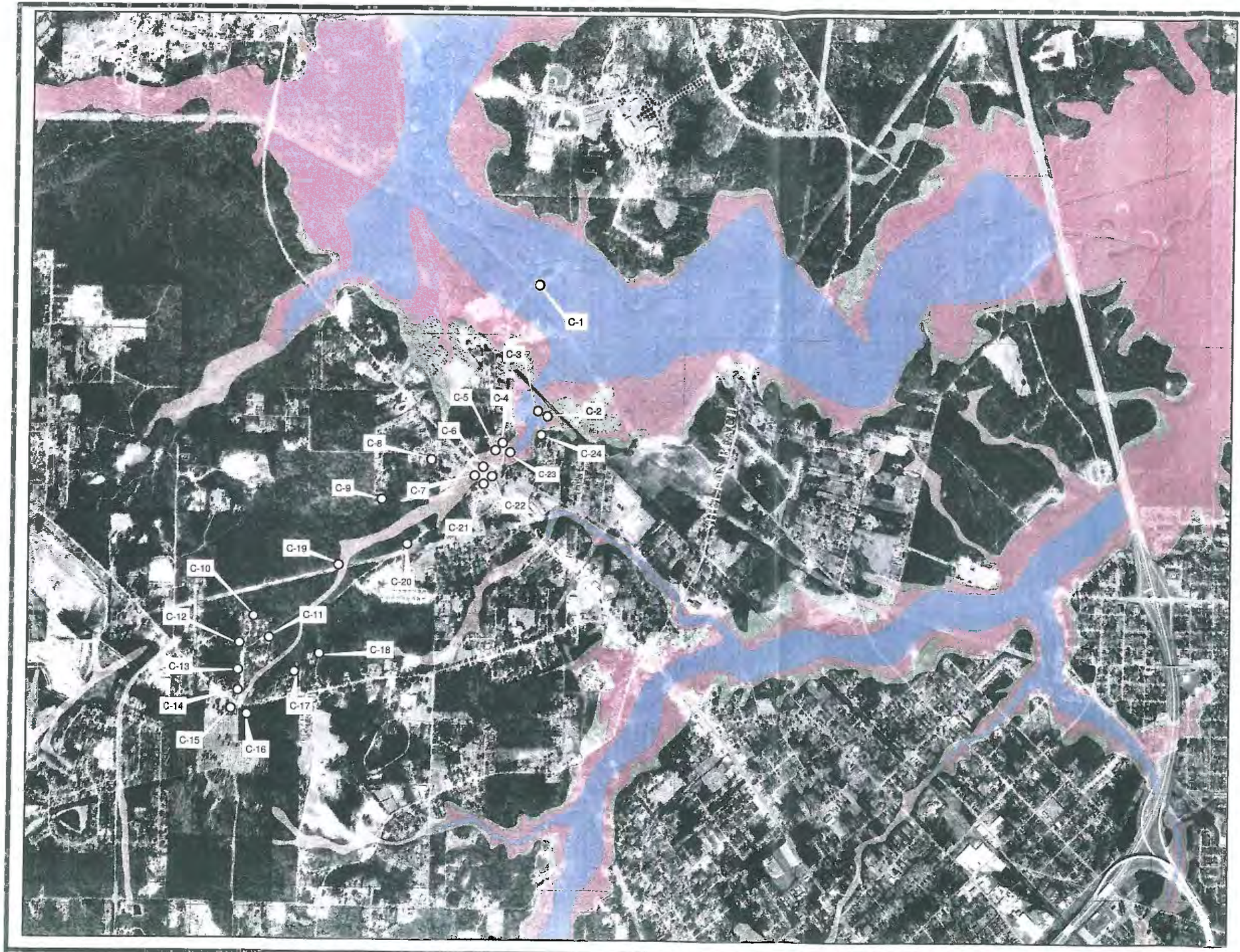
0 0.09 0.18 0.27 0.36 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE SC - SEABURY CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008



N
W E
S

LEGEND

ZONE

- LOW RISK AREA
- 500 - YEAR FLOOD AREA
- 100 - YEAR FLOOD AREA
- 100 - YEAR FLOOD AREA
- <all other values>

NO BASE FLOOD ELEVATION DETERMINED

0 0.10.20.30.4 Miles

MALCOLM PIRNIE

CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE C - CHICKASAW CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008

N
W E
S

LEGEND

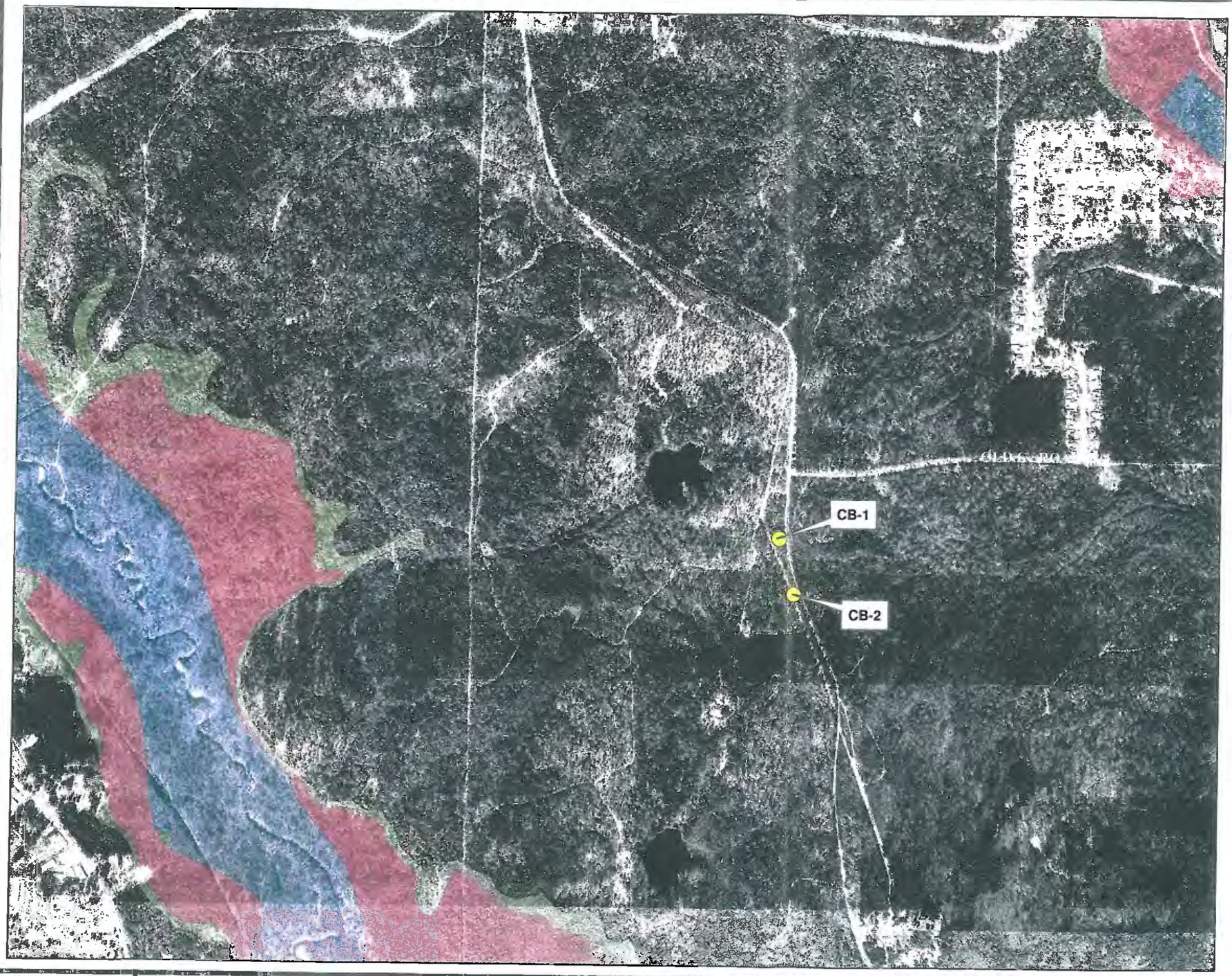
- CA POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

0 0.1 Miles

MALCOLM PIRNIE	CITY OF PRICHARD PRICHARD, ALABAMA YEAR 2007 MS4 PERMIT 4096014	LINE CA - CHICKASAW CREEK WATERSHED FIELD SCREENING CITY OF PRICHARD	FEBRUARY 2008



N
W E
S

LEGEND

- CB POINTS
- FLOODWAY

ZONE

- ZONE X - LOW RISK AREA
- ZONE AE - 100 - YEAR FLOOD AREA
- ZONE X500 - 500 - YEAR FLOOD AREA
- ZONE A - 100 - YEAR FLOOD AREA NO BASE FLOOD ELEVATION DETERMINED

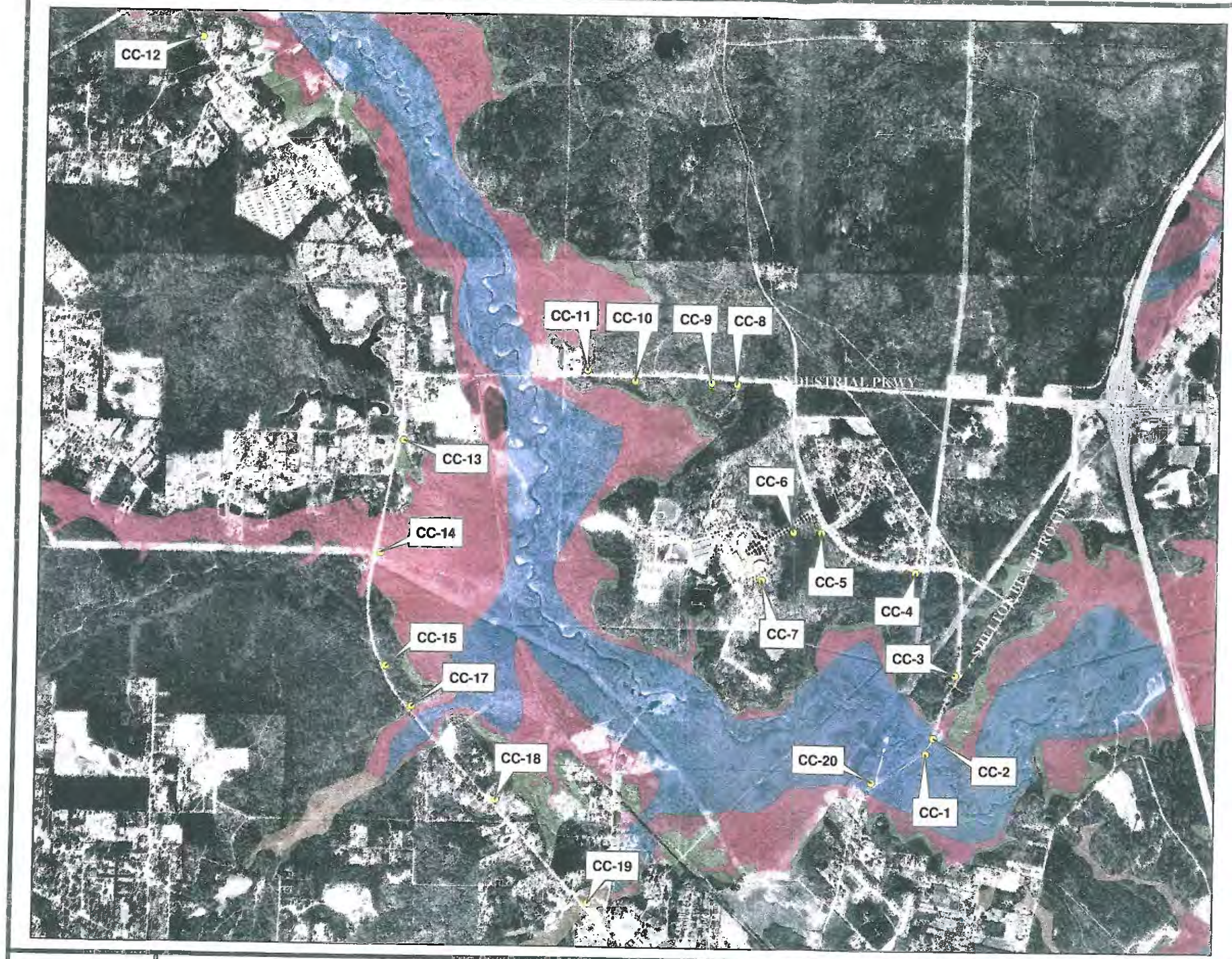
0 0.25 Miles

MALCOLM PIRNIE

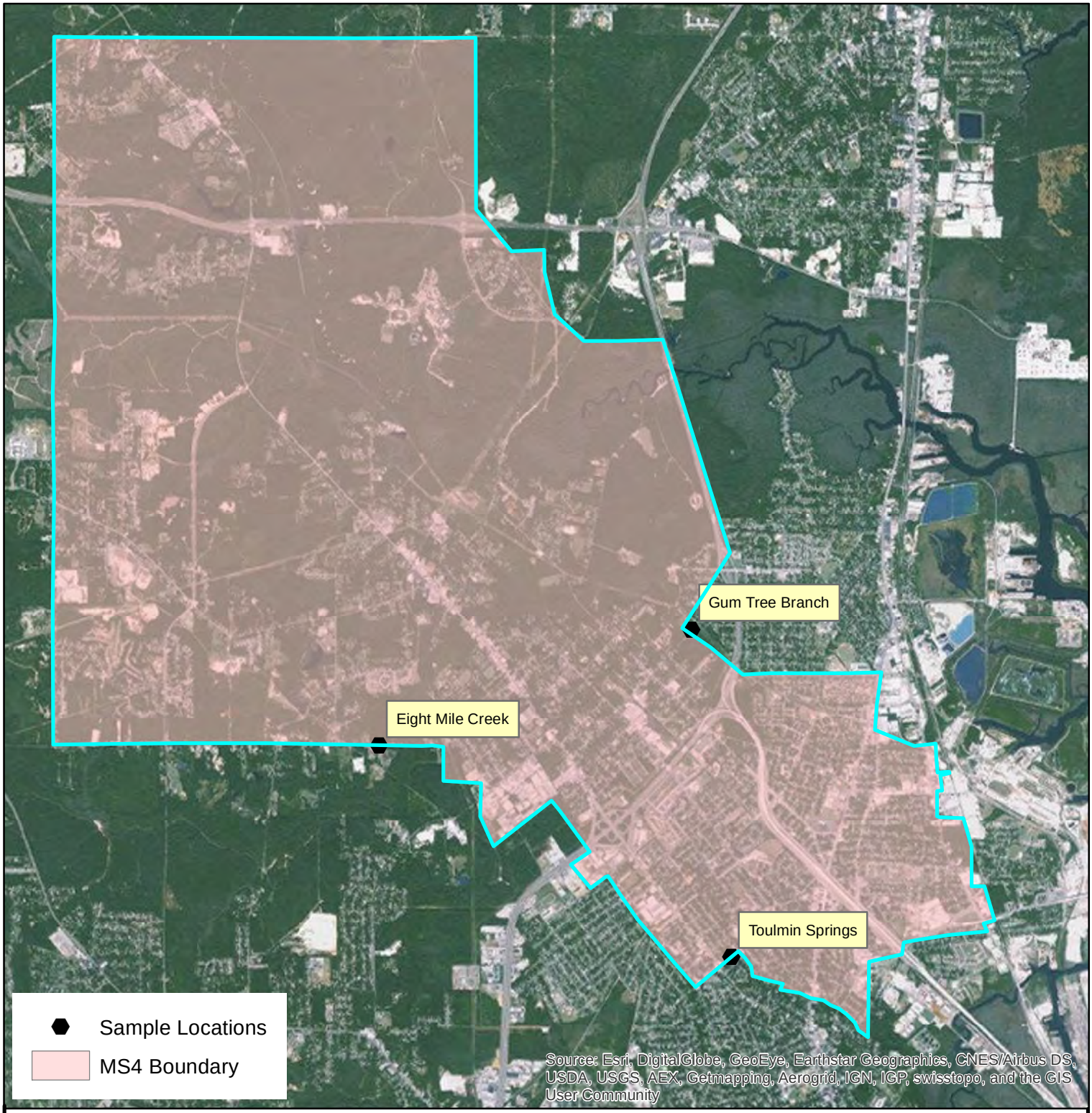
CITY OF PRICHARD
PRICHARD, ALABAMA
YEAR 2007 MS4 PERMIT
4096014

LINE CB - CHICKASAW CREEK WATERSHED
FIELD SCREENING
CITY OF PRICHARD

FEBRUARY 2008



MALCOLM PIRNIE	CITY OF PRICHARD PRICHARD, ALABAMA YEAR 2007 MS4 PERMIT 4096014	LINE CC - CHICKASAW CREEK WATERSHED FIELD SCREENING CITY OF PRICHARD	FEBRUARY 2008



Scale

0 4,250 8,500 17,000

Feet

N

W E

S

City of Prichard

Permit Number ALS000002

PAYNE ENVIRONMENTAL SERVICES

Figure 4

Wet Weather Sample Locations

FIGURE 5

CATCH BASIN LOCATIONS

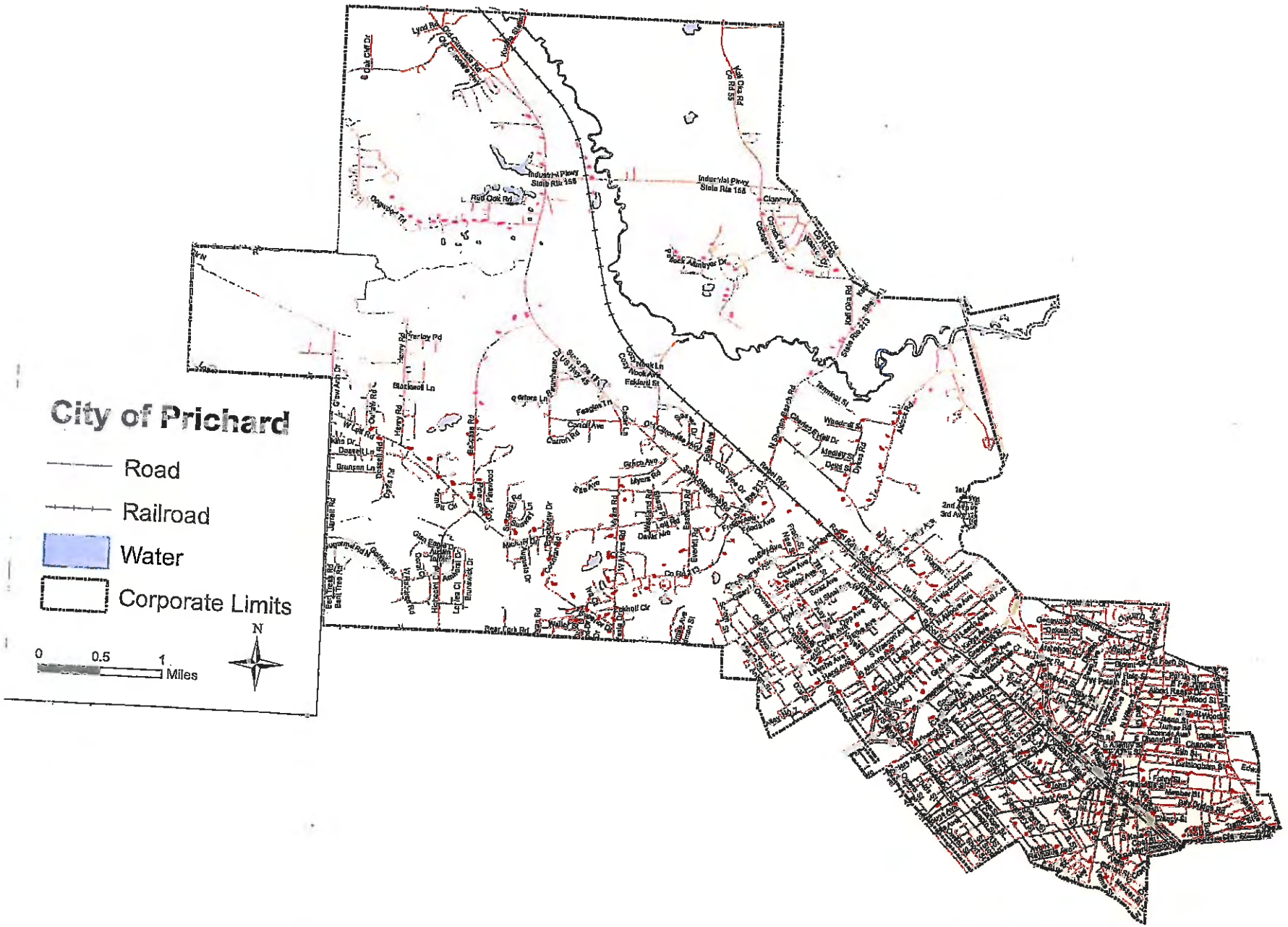


FIGURE 5 - CATCH BASIN LOCATION MAP

TABLES

TABLE 3

MUNICIPAL FACILITIES INVENTORY AND INSPECTION SCHEDULE

CITY OF PRICHARD SWMP PLAN

ANNUAL INSPECTION

INSPECTION DATE	GOAL MONTH	FACILITY NAME	CONTACT NAME	LOCATION ADDRESS	ZIP CODE
	JAN	City Hall	James Jacobs	208-16 E Prichard	36610
	JAN	City Hall Annex	James Jacobs	208-16 E Prichard	36610
	FEB	Club House	John Greggs	4603 Golfway	36610
	MARCH	Storage	John Greggs	4603 Golfway	36610
	APRIL	Fire Station	James Jacobs	949 St Stephens	36610
	MAY	Fire Station	James Jacobs	303 W Turner	36610
	JUNE	Fire Station	James Jacobs	303 W Turner	36610
	JUNE	Fueling Station	James Jacobs	303 W Turner	36610
	JULY	Auditorium	John Greggs	535 Main Blvd	36610
	AUG	Senior Citizens	John Greggs	2807 Whistler	36610
	SEPT	City Garage/Public	F. Billups	2402 Rebel Rd	36610
	OCT	Animal Shelter	F. Billups	2400 Rebel Rd	36610
	OCT	Gasoline Station	F. Billups	2400 Rebel Rd	36610
	OCT	Garage	F. Billups	2400 Rebel Rd	36610
	OCT	Library	John Greggs	4440 Highpoint	36610
	NOV	Police Annex	John Greggs	117 Phillips St	36610
	NOV	Police Storage	John Greggs	117 Phillips St	36610
	JAN	Sign Shop	John Greggs	117 Phillips St	36610
	JAN	STADIUM	John Greggs	222 Harold C	36610
	JAN	SCOREBOAED	John Greggs	222 Harold C	36610
	FEB	FIRE STATION	James Jacobs	4442 Highpoint	36610

	FEB	Old City Hall	James Jacobs	Highpoint Park	36610
	DEC	Leased Office	James Jacobs	743 Mt Sinai	36610
	DEC	Day Care Center	James Jacobs	530 Escambia St	36610

APPENDIX A

TRACKING SPREADSHEETS

YEAR SEVEN DRY WEATHER SCREENING SUMMARY CITY OF PRICHARD, ALABAMA

Grid Cell Number	Site Location	Flow	Odor	Color	Flotables	Deposits/ Stains	Vegetation Condition	Structural Condition	Biological
6/16/2021 HB-0	Hendrix @ Hog Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-24	Marsh Street	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-11	Diaz/ Hog Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-11	Telegraph @ Hogs Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-11	Rail Road @ Telegraph	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-7	Pershing St @ Hog Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-3	Martin Luther King/Hogs Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-6	Petain @ Hog Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-25	Rail Road @ Telegraph	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
6/16/2021 HB-7	Petain @ Hog Bayou	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-44	Hinson Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-33	Hinson Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-47	Thomas Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-31	Thomas Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-32	Thomas Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-1	Wolfridge/Hand Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE
1/22/2021 TA-3	Hand Avenue	NONE	NONE	CLEAR	NONE	NONE	NONE	NORMAL	NONE

YEAR SEVEN DRY WEATHR SCREENING SUMMARY CITY OF PRICHARD, ALABAMA

Grid Cell Number	Site Location	Flow	Odor	Color	Flotables	Deposits/ Stains	Vegetation Condition	Structural Condition	Biological
6/21/2021 T-1	Velma Street & Vernon	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
6/21/2021 T-1	Wilson Avenue @ Galaxy Club	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
6/22/2021 EA-22	Highway 45 @Elba Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
6/22/2021 EA-19	Wolfridge Road	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
6/22/2021 EA-8	Station Street	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-8-A	Whatley Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-32	Whatley Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-31	Whatley Ave/Warren Street	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-30	Whatley Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-28	Turner Road	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-27	Turner Road	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-7	West Turner Road	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-8	Gould Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-1	Anna Dixon Court	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-3	Warren/Whatley Streets	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/10/2021 EA-31	Warren Street	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE
7/22/2021 EA-21	Highway 45 @ Elba Avenue	NONE	NONE	CLEAR	CLEAR	NONE	NONE	NORMAL	NONE

APPENDIX B

TRAINING DOCUMENTATION

Certified Stormwater Inspector Recertification

Training in the following categories

Permit Compliance
Industrial
Construction
Municipal

Municipal Inspections
Commercial
Industrial
Construction
Pollution Prevention
Illicit Discharge

This Certificate and .4 CEUs(4 training hours) Awarded To

Gail Ambrose

In recognition of having completed all requirements of the Certified Stormwater Inspector Recertification course by the National Stormwater Center. This certification is effective for a period of five years.

John Whitescarver, President	5909	July 15, 2019
	Certificate Number	Date

The National Stormwater Center
A nonprofit foundation
www.npdes.com

APPENDIX C

FORMS

CITY OF PRICHARD INSPECTION DEPARTMENT

POPEYES FRIED CHICKEN			
ADDRESS	Permit No.	Permit Holder	PHONE No .
3000 St. Stephens Road			Cell - 601-818-88889
BLDG	83825	Advanced Building	Specialties, INC --- 7/23/2020
ELECTRICAL	27288	Wayne johnson& Son INC	8/5/2020
Temp Pole -	27320	Wayne johnson& Son INC	8/5/2020
HVAC	27442	Mayfield Heating & A/C	11/3/2020
Plumbing	83845	CDS Plumbing INC	8/6/2020
Sign Permit	84034	Capital Sign	12/3/2020
			C/O ISSUED:
LOCATION	3000 St. Stephens Road		
VALUE	$1,031,508.00		
OWNER	Out Of The Box Ventures LLC		
ZONE USE B-1	Commercial		
INSPECTIONS	DATE OF INSPECTION		INSPECTOR SIGNATURE
Site / Ero/ Sediment Ctrl	7/27/2020		Gail Ambrose
Footing	8/12/2020		James Jacobs
FOUNDATION	8/20/2020		James Jacobs
Framing	9/22/2020		James Jacobs
Ceiling Overhead	12/2/2020		James Jacobs
HVAC			
Duct Work	12/2/2020		James Jacobs
PLBG - R/I	8/14/2020		James Jacobs
PLBG - T/O	9/30/2020		James Jacobs
Grease Trap	11/9/2020		James Jacobs
PLBG - FINAL			
SEWER	11/9/2020		James Jacobs
Electrical R/I	12/2/2020		James Jacobs
Electrical Underground	8/20/2020		James Jacobs
Electrical Grounding	8/12/2020		James Jacobs
ELE - Final			
Service Release			
Temp Pole	8/12/2020		Walter Johnson
Comments			

CITY OF PRICHARD INSPECTION DEPARTMENT

New Car Wash			
ADDRESS	Permit No.	Permit Holder	PHONE No .
2966 St. Stephens Rd			Cell - 251-269-4790
BLDG	83734	Person Service Corp	8/28/2020
ELECTRICAL	27363	John Etheridge ELE. SVC	9/9/2020
Temp Pole -	27362	John Etheridge ELE. SVC	9/9/2020
HVAC			
PLUMBING	83957	E-Z Flow	10/16/2020
			C/O ISSUED:
LOCATION	2966 St. Stephens Rd		
VALUE	$ 1,295.719.00		
OWNER	ROB MYERS		
ZONE USE B-1	Commercial		
INSPECTIONS	DATE OF INSPECTION		INSPECTOR SIGNATURE
Site / Ero/ Sediment Ctrl	9/14/2020		Gail Ambrose
Slab Electrical	10/23/2020		James Jacobs
Slab Building	10/26/2020		James Jacobs
FOUNDATION/ Slab BLDG 1	11/3/2020		James Jacobs
Framing BLBG #1	12/31/2020		James Jacobs
Framing Canopy	1/8/2021		James Jacobs
Final Canopy			
BLDG / FINAL #1			
FOUNDATION/ Slab BLDG #2	11/3/2020		James Jacobs
Framing BLBG #2	1/8/2021		James Jacobs
BLDG / FINAL #2			
PLBG - R/I	10/19/2020		James Jacobs
PLBG - T/O	11/3/2020		James Jacobs
PLBG - FINAL			
SEWER			
Electrical Undergroung R/I	10/1/2020		James Jacobs
ELE - Final			
Service Release			
COMMENTS			

CITY OF PRICHARD LITTER BOOM INSPECTION FORM

Site: _____

Location: _____

Date: _____ **Time Checked:** _____

Debris Accumulation

None: _____ **Minimal Amount Of Debris:** _____ **Need Removal:** _____

Any maintenance other than debris removal needed Yes_____ **No** _____

Comments: _____

_____

Debris Removal is Necessary, Provide Most Recent Measurable Rain Event Date/Inches

Date: _____ **Inches:** _____

Time Job Completed: _____

Equipment Used: _____ _____

Amount of debris removed _____ **Cu. Yds.**

# of Employees Used: _____ **Department:** _____

Where was trash disposed at: _____

Work Completed By: _____ **Date:** _____

CONDITION OF BOOM	CONDITION OF ANCHOR	CONDITION OF ANCHOR @ BANK
	E.___ W.___ N.___S.____	E.___W.___N.____S._____
Useful working order:_____	**Useful working order:**_____	**Useful working order:**_____
Damaged: _____	**Damaged:** _____	**Damaged:** _____

Note: At a minimum, inspection must be conducted bi-weekly and immediately following a rainfall Event of 0.75 inches or greater

Note: Accumulation of ¼ cubic yards or greater requires immediate removal of debris

CITY OF PRICHARD LITTER BOOM INSPECTION FORM

Broken: _____	**Broken:** _____	**Broken:** _____
Other: _____	**Other:** _____	**Other:** _____

Comments:

Note: At a minimum, inspection must be conducted bi-weekly and immediately following a rainfall Event of 0.75 inches or greater

Note: Accumulation of ¼ cubic yards or greater requires immediate removal of debris

City of Prichard

MUNICIPAL FACILITY INSPECTION CHECKLIST

Date:	Facility #: MF-	Picture #:
Facility Name:		
Address:		
Contact Name:		
Title:		
Phone #:		
Principal Watershed:		
Number of Inlets:	Number of Outfalls:	

Facility Type

☐ Public Building	☐ Parks/Cemetery	☐ Public Works
☐ Storage/Maintenance/Corporate Yard	☐ Police/Fire Department	☐ Public Parking Facility
☐ Stable/Animal Shelter	☐ Sports Facility	☐ Other:

Stock Piles:	☐ Yes ☐ No	Towing Yard :	☐ Yes ☐ No
Storm Water Contact:	☐ Yes ☐ No	Sediment & Erosion:	☐ Yes ☐ No
Storage & Handling:	☐ Yes ☐ No	Exposed Processes:	☐ Yes ☐ No
Fueling Site:	☐ Yes ☐ No	Exposed Chemicals:	☐ Yes ☐ No
Leaks & Spills:	☐ Yes ☐ No	Hazardous Waste / Materials:	☐ Yes ☐ No
Vehicle Washing:	☐ Yes ☐ No	Vehicle Maintenance:	☐ Yes ☐ No
Equipment Washing:	☐ Yes ☐ No	Equipment Maintenance	☐ Yes ☐ No

Does facility discharge/connect to MS4? ☐ Yes ☐ No

Does water from facility discharge to street? ☐ Yes ☐ No

Does water from facility discharge to drainage ditch, creek or river? ☐ Yes ☐ No

Has the facility been inspected by the State? (According to above Contact)
☐ Yes ☐ No ☐ N/A Date:

Were there any deficiencies noted by the State? ☐ Yes ☐ No ☐ N/A
Describe if Applicable:

Has the Facility reported any Recent Violation? ☐ Yes ☐ No ☐ N/A
Describe if Applicable:

Comments:

Storm Water BMP Plan Inspection

Storm Water BMP Plan? ☐ Yes ☐ No ☐ N/A

Date Initially Completed or Updated:	BMPP needs to be updated? ☐ Yes ☐ No

Is facility following the recommendations in the plan? ☐ Yes ☐ No

Comments:

POST CONSTRUCTION SITE INSPECTION REPORT

DATE: _____ LOCATION: _____

USE: _____ APPROXIMATE AREA_____

DRAIN OUTLETS CLEAR _____ YES _____ NO

SURFACE TYPE PAVEMENT _____ GRASS _____ GRAVEL_____
CONDITION _____
COMMENTS_____

COMMENTS: _____

EXPOSED MATERIALS: _____ YES _____ COVERED_____ NOT COVERED_____
COMMENTS:
_____
_____
_____

DETENTION/RETENTION AREAS: _____ YES _____ NO

CONDITION_____
COMMENTS:_____
_____
_____

OTHER AREAS OF
CONCERN:_____
_____
_____

PLEASE HAVE THE FOLLOWING CORRECTIONS MADE BY _____

DATE: _____ INSPECTOR_____

PUBLIC WORKS DEPARTMENT
2402 Rebel Road
Prichard, Al 36610
(251) 452-7841 Fax: (251) 452-3476
"The City of Champions"

Troy Ephriam
Mayor

Eddie Brown
Public Works Director

Fernando Billups
Public Works Superintendent

Grenetta Ward
Parks & Rec Superintendent

Clifton Lambert
Public Service Supervisor II

Steve Lavender
Public Service Supervisor II

To: Fernando Billups, Superintendent of Public Works

Copy To: Troy Ephriam, Mayor
Eddie Brown, Public Works Director
Gail Ambrose, Inspections Department

From: April McCall, Public Works Office

Date: April 25, 2016

Re: Work Performance for the Week of April 18, 2016-April 22, 2016

Greetings,

Below you will find a chart listing the date work was performed, the district, the work performed, and which crew performed the assignment.

DATE	DISTRICT	WORK PERFORMED	CREW
4-18-16		Litter patrol at the following locations: Service Road, the Overpass, Loves Service Station, and finished Pollard Park.	Beautification Crew/ Team 3
4-18-16		Trimmed and edged Clark Street Park and on Clark Street from Main to Owens Street.	Beautification Crew/ Team 2
4-18-16		Cut, trimmed and edged Clark Street Park and on Clark Street intersection. Also, on Bay Bridge Road.	Beautification Crew/ Team 1
4-18-16	Garage	Opened doors and turned on the air compressor. John Deere Lawn Mower 1166 (PW) – Routine maintenance and repaired. John Deere Lawn Mower 2084 (PW) – Routine and maintenance. Jeep Cherokee (AC) – Repaired (INC). Made folders for every vehicle and equipment (INC) – Ford F150 7983 (PW) – Repaired. Turned off the air compressor, closed the doors, and locked the gates.	Garage
4-18-16	Service Station	Changed oil, cleaned the PW building, litter patrol in the area, fuel vehicles, and check vehicle fluids.	Service Station
4-18-16		Used asphalt to fill potholes at the following locations: Lott Road and Lott Road Extension.	Asphalt Crew

DATE	DISTRICT	WORK PERFORMED	CREW
4-18-16		Completed half of Thursday Route B from Bay Bridge Road to Montgomery Street. ([redacted])	Trash Crew
4-19-16		Finished installing pipes on Hobbs Street. Used dirt from the pit to cover the pipes.	Road and Drainage Crew
4-19-16		Litter patrol at the following locations: Service Road, the Overpass, Loves Service Station, Shelton Beach,and Pollard Park.	Beautification Crew/ Team 3
4-19-16	Service Station	Measure the gasoline and diesel. Cleaned the PW building, litter patrol in the area, fuel vehicles, and check vehicle fluids.	Service Station
4-19-16		Picked up litter, cut, edged, and blew on Price Avenue, and Bearfork Road to Owens Street.	Beautification Crew/ Team 3
4-19-16		Cut, edged, and blew at City Hall.	Beautification Crew/ Team 3
4-19-16		Graded the following streets: Woodruff Road, Rebel Road, Frank Street, Barnes Street, Oates Avenue, Siesta Drive, Eckhoff Drive, Ivaloy, and Cochran Road.	Beautification Crew/ Team 3
4-19-16		Completed Thursday Route B (Montgomery to Reeses Hill. Incomplete due to equipment being down. (216 yards)	Trash Crew
4-19-16		Opened the doors and turned on the air compressor. John Deere Lawn Mower 1166 (PW) – Repaired. Installed Automatic Flush on the urinal and tried to unstop the sink. Sterling Dump Truck 2475 (PW) – Repaired. Asphalt Spreader 1374 (PW) – Repaired. International Lowboy Trailer 4132 (PW) – Repaired. Frieghtliner Trash Truck 7620 (PW) – Repaired. John Deere Lawn Mower 1627 (PW) – Repaired (INC). Push Lawn Mower (FD) – Repaired. Piker- Repaired. Turned off the air compressor, locked the doors, and locked the gates.	Asphalt Crew
4-20-16		Picked up litter, cut, edged, trimmed, and blew on Hinson Avenue, Service Road next to Lovejoy Loop, and both parking lots complete.	Beautification Crew/ Team 2
4-20-16		Opened the doors and turned on the air compressor. John Deere Lawn Mower 1166 (PW) – Repaired. John Deere Lawn Mower 1627 (PW) – Repaired (INC). Push Mower 9601 (PW) – Repaired. Turned air compressor, closed the doors, and locked the gates.	Garage
4-20-16		Cut and repaired drain tops for drains throughout the City and Hand Avenue.	Road and Drainage Crew
4-20-16		Cut, edged, and trimmed Downtown fields, parking lots, and etc.	Beautification Crew/ Team 1
4-20-16		Litter patrol at the following locations: Service Road, the Overpass, Loves Service Station, and Pollard Park.	Beautification Crew/ Team 3
4-20-16		Graded the following roads: Old Citronelle Highway, Carroll Road, Dogwood Drive, and Red	Road and Drainage Crew

		Oak Road.	
4-21-16		Used asphalt to fill potholes at the following locations: Amboy Street, Dial Street, Presley Street, and Lott Road.	Asphalt Crew
DATE	**DISTRICT**	**WORK PERFORMED**	**CREW**
4-21-16		Litter patrol at the following locations: Service Road, the Overpass, Loves Service Station, Till Street, and Lawshe Avenue to next to Hardees.	Beautification Crew/ Team 3
4-21-16		Finished drain tops on Hobbs. Used the green grates from the PW yard and two bags of cement.	Road and Drainage Crew
4-21-16		Trimmed and edged on Clark Street in the curb near the bridge. Cut the weeds out the ditch on Missile Street. Picked up litter on Diary Street. Pulled weeds from the flowers in Prichard Mall and Wilson Avenue.	Beautification Crew/ Team 2
4-21-16		Cut, edged, and trimmed at the park Downtown and Wilson Avenue from Whistler Street to Chickasaw.	Beautification Crew/ Team 1
4-21-16	Garage	Turned on the air compressor and opened the doors. Freightliner Trash Truck 0967 (PW) – Routine maintenance. Ford Crown Vic. 7555 (PD) – Routine maintenance. Ordered parts. Cleaned up the shop. Turned off the air compressor and closed the doors.	Garage
4-22-16		Completed Monday Route A and ran half of Friday Route B. (120 yards)	Trash Crew
4-22-16		Cut, edged, and trimmed on Wilson Avenue.	Beautification Crew/ Team 1
4-22-16		Litter patrol at the following locations: Service Road, the Overpass, Loves Service Station, Highpoint Blvd., Shelton Beach Road, Myers Road, and Jarrett Road.	Beautification Crew/ Team 3
4-22-16		Cut, edged, trimmed, and blew at the Reading Park (dead end of Newton Street) and the Right-of-Ways on Mt. Sinai.	Beautification Crew/ Team 2
4-22-16	Garage	Opened the doors and turned on the air compressor. Asphalt Rake-Routine maintenance. Dodge Caravan 7867 (CH) – Repaired. Ford Crown Vic. 4566 (PW) –Removed the driver's side window tint. Closed the doors and turned off the air compressor.	Garage

If you have any questions, please contact me at 251-452-7841.

Thanks,
Public Works Office

APPENDIX D

EDUCATIONAL INFORMATION

Alabama is blessed with abundant rainfall, creeks, rivers, lakes, and reservoirs. Erosion problems should be addressed!

What Can You Do?

All landowners: Control erosion and minimize off-site sediment delivery at your sites.

Planner and designers of construction sites: Develop plans that use sound technology to minimize erosion and sediment delivery

Developers: Ensure that your newly developed sites do not create sediment and turbidity problems

Contractors: Install and maintain best management practices (BMPs) according to the stormwater pollution prevention plan

Local governments: Ensure that your regulations are sound and effectively followed

All Alabama citizens: Support local and state programs of soil and water conservation

Visit the website of the Alabama Soil and Water Conservation Committee for links to partnership participants: www.swcc.alabama.gov

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This brochure was developed under the leadership of the AL Soil & Water Conservation Committee with support of the Erosion and Sediment Control Steering Committee (members of the Steering Committee are representatives from the entities below):

AL Association of Conservation Districts
AL Department of Environmental Management
AL Department of Transportation
AL Soil & Water Conservation Society
Associated General Contractors of AL
Home Builders Association of AL
USDA-Natural Resources Conservation Service
(USDA is an equal opportunity provider and employer.)

With assistance from the:
Alabama Water Watch Program and Auburn University

Brochure partially funded by the Alabama Department of Environmental Management through a Clean Water Act Section 319(h) nonpoint source grant provided by the U.S. Environmental Protection Agency Region 4.

Let's Look at Sediment!

Sediment

Sediment

Sediment!

Why All The Fuss?

We often hear..."Sediment is the nation's biggest pollutant in our streams, lakes, and water courses."

Sediment impacts the environment! It costs land owners and local and county governments countless dollars.

This brochure has two purposes:

- Help readers gain a better understanding of the problems associated with sediment
- Stimulate stewardship of our land and water resources

Sediment is the soil particles that are detached during the erosion process. These particles are deposited somewhere down the slope. Likely locations for sediment deposits include ditches, ponds, lakes, creeks, and rivers. Some sediment reaches the Gulf of Mexico.

And there is more to the story. While some soil particles are deposited, other smaller soil particles can remain in the water for a long time. This water is "turbid" and damages the aquatic environment.

The impacts of sediment and turbidity can be seen in the pictures to the right.

Pictures on the back of this brochure show sites that may deliver sediment and turbid water and create problems to our waterways and the aquatic environment.

In addition to the purposes stated above, this brochure also illustrates why sediment and turbidity are considered non-point pollutants. These pollutants come from many sites and collectively create problems that need to be addressed.

As a concerned Alabamian - review this brochure closely, and then pass it on to someone else for their benefit.

Accelerated erosion, sediment, and turbidity. These natural process of erosion is accelerated by human disturbance of the land. The resulting sediment and turbidity are harmful to aquatic life in streams, reservoirs, estuaries and bays of Alabama.

Water-caused erosion produces sediments that enter local waterways and starts a journey downstream, maybe to Mobile Bay or other bays in the Gulf of Mexico.

Erosion occurring in Georgia, Mississippi, and Alabama contributed to the sediment plume at right that spans from the Mobile Delta through Mobile Bay out into the Gulf of Mexico.

Environmental Problems

Smothers Stream Bottoms and Clouds the Water. Sediment degrades aquatic habitat and turbidity restricts light and plant growth. This disrupts the food chain and impairs fish and aquatic insect populations.

Caddisfly *Darter* *Mayfly*

These aquatic insects and fish are important food sources for many sport fish found in Alabama.

Reduces Populations of Sensitive Sport Fish.

Suspended sediment reduces visibility and damage fish gills, affecting the ability of fish to feed and breathe. Pollution-sensitive sport fish such as bass and bream are often replaced with more pollution tolerant and less popular carp and suckers.

Black Crappie

Largemouth Bass

Redear Bream

Striped Bass

Desirable sport fish that are negatively affected by sediment.

Transports Harmful Levels of Pollutants.

Sediment carries pathogens, nutrients, and toxic materials such as heavy metals and chemicals into our waterways. These pollutants affect drinking water and surface water quality, contribute to increased water treatment costs, fish consumption advisories, and expand oxygen depleted "anoxic zones" commonly called "dead zones" in the Gulf of Mexico.

Pollutants accumulate in fish tissue and are hazardous to other organisms when consumed.

Sediment Impacts our Waterways.

Dredge removing sediment from the Alabama River.

Sediment Sources

Question: Why do we have off-site sediment and muddy water (turbidity) problems? The answers are in the pictures below and to the right.

Farms with Eroding Fields

Disturbed Forests with Ineffective BMPs

Abandoned Dirt Pits, Abandoned Surface Mines, and Access Roads that Need Stabilization

Abandoned Fields in the Urban/Agricultural/Forest Interface and Linear Construction

Construction Sites of <u>All Kinds</u> (subdivisions, commercial, schools, and roads)

Dirt Roads

A problem situation may have been left out, but you should get the picture . . .

Sediment and muddy water (turbidity) come from the land that needs stewardship of our soil and water.

WHO KNEW?

The Water Savers Issue

SEE where water comes from—and where it goes.

LEARN ways you can make a difference by saving water.

ACT in "It All Adds Up."

Play "Down the Drain!" with Mona & Ed

WATER...

what's the big deal?

People, plants and animals all need water to live. Without water, there would be no life on our planet!

Use the **Word picker** to fill in the blanks and learn some ways we depend on water.

- **You should** ☐☐☐☐☐ water every day.
- **Water in rivers** is used to produce ☐☐☐☐☐☐☐☐☐☐ for millions of people.
- **You use water** for ☐☐☐☐☐☐☐, like taking a bath and brushing your teeth.
- **Water is used to** grow ☐☐☐☐☐ for food.
- **Water is used for** ☐☐☐☐☐☐☐. How could you wash veggies or have soup without it, for example?

Word picker

HYGIENE
cooking
drink
crops
electricity

Word POWER!

Do you know what the words that look like **THIS** in this magazine mean? If not, look them up. And look for them in Word Power on our Web site, too.

GO TO

Location: **www.whoknewwatersavers.com**

(password: Water4Life) for more information and lots of fun activities!

2008 Edition

Channing Bete Company, One Community Place, South Deerfield, MA 01373
To reorder call (800) 628-7733 or visit www.channing-bete.com and ask for item number PS91931 Ages 9-11 (06-07-A) Price List B

Check out our blue planet's COOL water cycle.

cool science

Water is found in 3 forms: solid (frozen), liquid and gas (VAPOR).

Water moves in a constant cycle, changing form along the way. Every drop on Earth is used over and over again. It's the same water now as when the dinosaurs were alive!

The sun heats the water in the oceans and in other bodies of water. Some water becomes vapor (EVAPORATION).

The vapor rises and collects as clouds. When cloud particles become too heavy (CONDENSATION), fresh water falls back to Earth as rain, snow or hail (PRECIPITATION).

Some water stays solid in GLACIERS or ice caps for thousands of years.

Most of Earth's water is in its oceans. This liquid is salty and not good to drink.

Eventually, water makes it back to the oceans.

Fresh surface water collects in lakes, swamps, rivers and other bodies of water.

Ground water is water that soaks into the earth and collects in layers of rock and sand underground.

How is WATER cleaned for drinking?

Follow this maze and learn about water's typical journey from source to tap.

START

Fresh water is piped to a treatment plant.
It may be either surface water or ground water.

Dirt and large particles are taken out.
They sink to the bottom while the water moves on.

The water is filtered.
This removes smaller particles. It also helps make the water clear.

The water is disinfected to make it safe to drink. For example, chlorine may be added to kill **BACTERIA**.

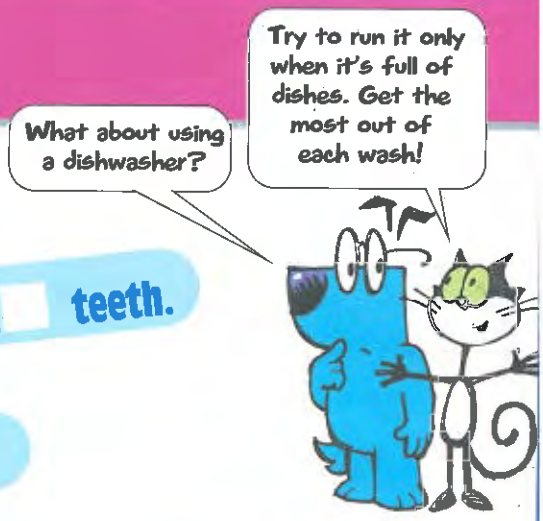
The WATER is ready to use.
Turn on your tap and there it is—clean and ready to drink!

FINISH

Use every drop wisely.

It may seem like there is a lot of water in the world. But we use water faster than the water cycle moves it. It's important to save water every chance we get.

Fill in the missing Ds, Rs, Os and Ps for some ways you can help CONSERVE our water.



1. Take sh te sh we s.

Set a timer for 5 minutes. Get out when the timer rings.

2. Tu n ff the ta when b ushing y u teeth.

Turn the water off any time you are not using it.

3. n't flush t ash wn the t ilet.

Toilets use a lot of water. Only flush when you must!

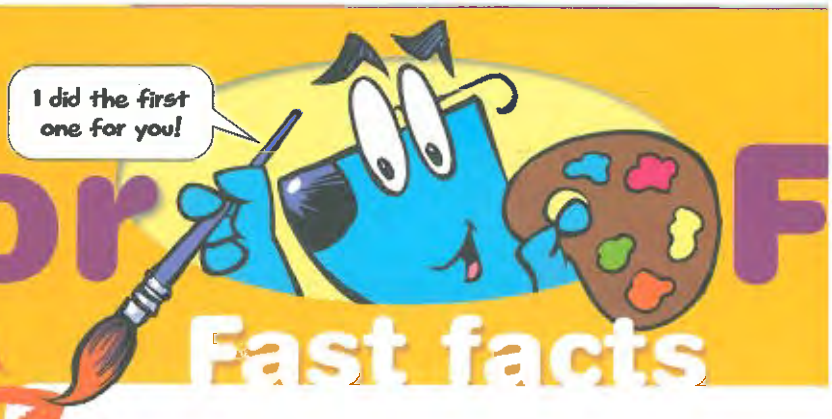
4. Kee a itche f inking wate in the f i ge.

You won't have to wait for water to run cold.

5. Wash ishes in a basin f s a y wate .

Only turn on the tap when you're ready to rinse.

TRUE or F



Fast facts

Check out how much you know (or don't know) about protecting water.

1. Circle TRUE or FALSE for each statement.
2. Find the "fast facts" (A-E) that go with each statement.
3. Draw a line from each statement to the correct fast fact.

1. Trash can **POLLUTE** our water supply. — TRUE / FALSE

2. It's OK to pour **HAZARDOUS** chemicals down the drain or in the street to get rid of them. — TRUE / FALSE

3. During a drought or water shortage, it's too late to try to save water. — TRUE / FALSE

4. After water is used, it may go to a treatment plant for cleaning. — TRUE / FALSE

5. If a pond or river looks clean, it is OK to drink from it. — TRUE / FALSE

6. Our water supply is planned and managed by experts. — TRUE / FALSE

A. True! If garbage is not handled properly, it can make water unclean and unsafe to use. Polluted water can make people, plants and animals sick. Don't throw any kind of trash into water or in a drain.

B. False! A drought or shortage is when there is less water than normal—from dry weather or too many people using water, for example. During these times, it does help to save water whenever possible. It may even be required!

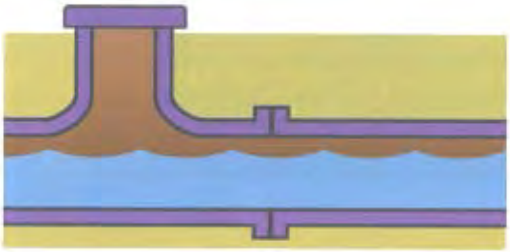
C. False! Water that looks clear and clean could still be **CONTAMINATED**. It could contain germs that cause diseases. Or it could be polluted with waste, such as pesticides (poisons that kill insects).

D. True! Many people are behind the clean water that runs from our taps. They include chemists, engineers, state officials and treatment plant operators. Experts may also study the weather to **PREDICT** water shortages.

E. False! Dumping chemicals causes problems down the line. Poisons can get carried to rivers, lakes and oceans. There they could harm plants, wildlife, people—even you!

F. True! **WASTEWATER**—from inside drains, washers, toilets, showers and so forth—travels through sewers to water treatment plants. It is cleaned before returning to the water cycle in lakes, streams, oceans, etc. (Houses with no sewer connection may have a private septic system to clean water.)

ALSE?



Who's down the stream?

We all are. **When water gets polluted, it hurts everyone. That's because we all share the same water in this world. What can we do to improve water QUALITY?**

Get rid of hazardous wastes properly. (These include paint thinner, used motor oil and used batteries.) Ask a parent to take them to a collection site.

Use safer cleaning products that won't mess up the water supply. For example, some soaps are made with vegetable oil.

Recycle or reuse containers and paper whenever you can.

ACT it out!

Cast:
- Gabi
- Nick
- Isaiah
- Victoria
- Ms. Grove

It All Adds Up

Scene 1

Gabi, Isaiah and Nick are in a group in science class together. The teacher is explaining their assignment.

Ms. Grove: For the next part of our water unit, we'll be doing personal water audits. Who can tell us what an "audit" is?

Gabi raises her hand.

Ms. Grove: Yes, Gabi?

Gabi: It's like a review of something, to see how it's going.

Ms. Grove: Yes, it helps you review a situation. So you'll be reviewing your water use. Groups will report on their audits next week.

Ms. Grove passes out worksheets. The groups meet to plan their audits.

Isaiah (*reads the worksheet and laughs*): We're supposed to count how many times we flush the toilet this week?

Gabi: Looks like it! And we need to time how many minutes we run faucets, too.

Isaiah: How are we going to keep track of all this?

Gabi: Maybe we could make a chart to carry around and fill out. We could check a box for each toilet flush.

Nick: And in spaces below that, we can write how long we run water each time, and what it's used for.

Gabi: Great! I'll make copies so we'll each have a chart. Are you ready to count flushes, Isaiah?

Isaiah: I guess. But I don't get why we have to keep track of water. It's like auditing air. It's there, so we use it. Why bother adding it up?

Nick: I'll guess we'll find out!

Scene 2

In the middle of the week, Gabi, Isaiah and Nick meet at Gabi's house to talk about their project.

Nick: This is interesting—this Web site says the average toilet flush takes over a gallon of water.

Gabi: Wow! So if we count our daily number of flushes, we can figure out about how many gallons of water we flushed.

Isaiah: What about running the tap? I ran it for 10 minutes yesterday while I washed dishes!

Gabi: Let's see. If we could figure out the gallons we used for running water, we could add it to our gallons flushed. Then we'd each have a grand total in gallons.

Nick: I have an idea. Gabi, do you have a bucket and a timer?

Isaiah: Here—my watch can be the timer.

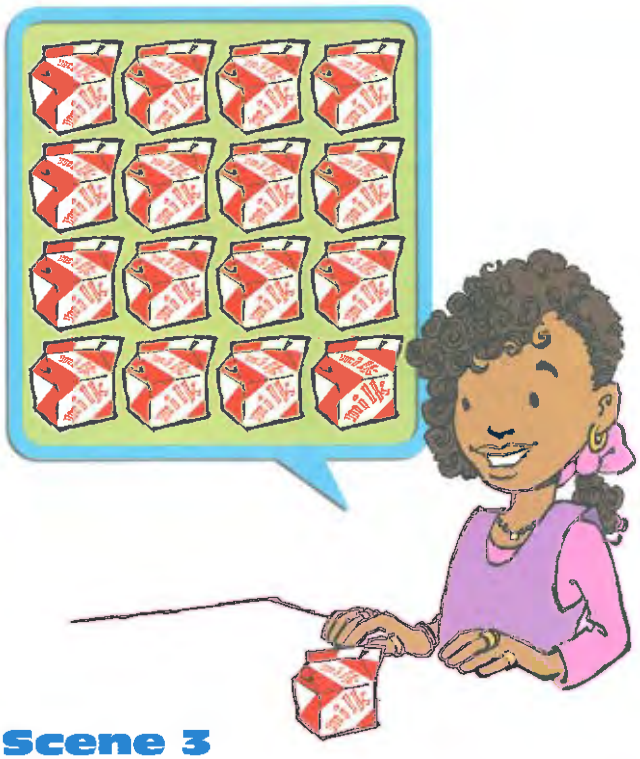
Gabi: I'll go ask Mom about a bucket.

Gabi leaves the room.

Isaiah: All this talk about gallons.... I just can't picture it.

Nick: I think my idea will help!

"We figure every minute we run the tap, we've used 2 gallons of water."



Scene 3

The next day in the lunchroom, Gabi, Isaiah and Nick are sitting with their friend Victoria.

Victoria: Isaiah, you're so busy reading that book you're not even eating!

Isaiah: I'm working on our water audit project.

Victoria: For Ms. Grove's class? How is that going?

Gabi: OK. We're keeping charts of the times we use water every day.

Nick: And yesterday we figured out how the number of minutes we run water can be used to get a number in gallons.

Victoria: How do you do that?

Nick: Well, Gabi has a bucket that holds 1 gallon of water. We timed how long it took to fill the bucket from the tap.

Gabi: It took about 30 seconds.

Nick: So, we figure every minute we run the tap, we've used 2 gallons of water.

Gabi: Right. If the tap runs 1 gallon of water in 30 seconds, then it runs 2 gallons in 60 seconds.

Victoria: That makes sense. But what does a gallon look like anyway? Is it a lot?

Isaiah (*looks up from his book*): That's just what I was wondering! I've been doing some research. 1 gallon is 16 cups. That carton of milk you're drinking is 1 cup. So it would take 16 of those cartons to make a gallon of milk.

Victoria (*laughs*): That's way more than my lunch money would cover!

Isaiah (*seriously*): Guys, did you know that while we're using 2 gallons a minute from the tap and flushing more than a gallon at a time, millions of people in the world have no running water at all?

Gabi: This water audit is getting pretty interesting!

Scene 4

Ms. Grove's students are reporting on their water audits.

Ms. Grove: Nick, Gabi, Isaiah—how did your water audits go?

Gabi: I figured out I used about 170 gallons of water last week.

Nick: And I used 208!

Isaiah: I used 104 gallons.

Ms. Grove: Your number seems a lot lower, Isaiah. Why is that?

Nick and Gabi: Yeah, why is that?!

Isaiah: I made my showers really short. I turned the tap off all the time—like when I brushed my teeth. Next week, I want to get even lower! I asked my dad about getting faucet aerators that will help us use even less water.

Ms. Grove: It sounds like you're learning about the value of water, Isaiah.

Isaiah: We're pretty lucky to just turn on the tap and have water. We should take care not to waste it.

Ms. Grove: Well, that brings me to the next part of our water unit—water conservation. Our class will investigate how much water we save if we follow certain tips.

Nick: Sounds like you have a head start, Isaiah!

Isaiah: Yeah, it's all adding up now!

The friends laugh.

Think about it:

- **How do you think** your own water use would compare with Nick's, Gabi's or Isaiah's?
- **Why do you think** Isaiah got so interested in saving water?
- **What did you learn** from this play?

Down the Drain!

Start here

Can you be a great water saver? Be careful—if you make water-wasting choices, you'll go down the drain!

Here's a game for you and your friends.

To move, flip a penny.

HEADS: go forward 1 space

TAILS: go forward 2 spaces

You sweep the sidewalk with a broom instead of hosing it off.

MOVE AHEAD 1 SPACE.

You leave water running while you answer the phone.

LOSE A TURN.

You help wash a car using a bucket of water instead of running the hose.

MOVE AHEAD 1 SPACE.

You notice a tap is leaking at home, but you don't say anything.

DOWN THE DRAIN!

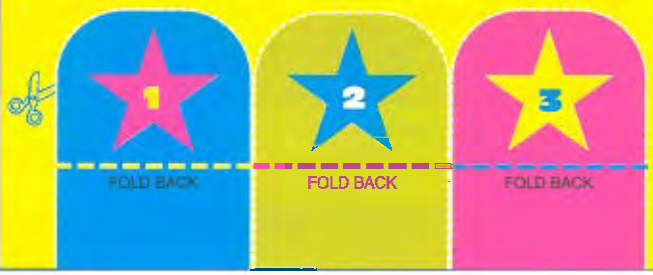
After supper, you put scraps in the trash instead of running the garbage disposal.

MOVE AHEAD 2 SPACES.

A leak wastes many gallons of water until it is fixed. Help repair any leaks as soon as possible!

MOVE TO THE FROG ON YOUR NEXT TURN.

USE THESE AS PLAYING PIECES



You help a parent install a "low-flow" shower head to save more water.

MOVE AHEAD 1 SPACE.

When you run water for it to get hot, you catch some to give your plants.

MOVE AHEAD 1 SPACE.

You use a hose to clean up after your dog.

DOWN THE DRAIN!

Cleaning up is great. But washing pet waste into the street or down a drain sends it into the water supply. It's best to scoop and put it in the trash.

MOVE TO THE DRAGONFLY ON YOUR NEXT TURN.

It's laundry day! You forget to set the load size setting on the machine.

MOVE BACK 1 SPACE.

You wash a bunch of carrots under running water.

DOWN THE DRAIN!

Wash fruits and vegetables in a bowl of water to avoid running the tap. It might seem like a small change, but changes large and small all help save more water!

MOVE TO THE NEWT ON YOUR NEXT TURN.

You talk to your family about how saving water helps save money and the environment.

MOVE AHEAD 1 SPACE.

Finish!

Parents! Read through the magazine with your child. Share your views about saving water with each other.

Home Page

TALK ABOUT IT

Take this page home and "interview" a parent or another trusted adult.

1. What ways does our family use water every day? Do we use more in certain seasons, like summer?

2. What do you know about problems with polluted water or water shortages?

3. What steps do we take to save water?

4. What else can we do to help take care of the earth's water supply?

FAMILY FUN STUFF

1. **Do a family audit.**
Chart your family's water use. Encourage each other to use tips from this magazine to save more water.

2. **Go on a water discovery trip.**
Take a trip to a stream, lake, river, canyon, pond or beach. Talk about what the area means to you, and how it might change (or has changed) from pollution or drought.

3. **Make a poster.**
Have each family member cut out pictures of water or water-related activities from newspapers or magazines. Paste them on poster board and discuss different uses of water in everyday life.

Check out

www.whoknewwatersavers.com

(password: Water4Life) for more information and lots of fun activities!

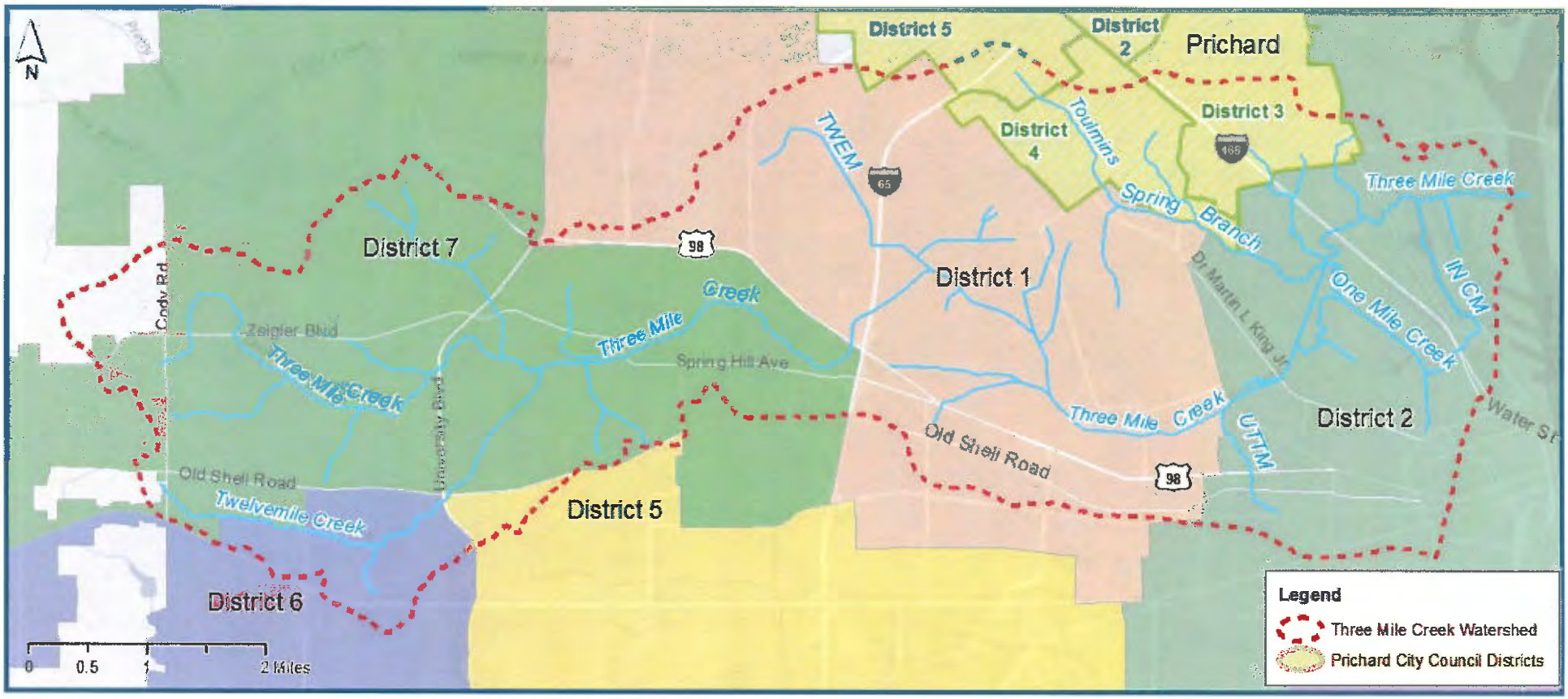
Channing Bete® COMPANY

Restoring Three Mile Creek

One Neighborhood at a Time

Imagine Three Mile Creek flowing through the heart of Mobile

with trails along its banks – a greenbelt stretching from the University of South Alabama to the Mobile River – with neighborhoods linked by walking and biking trails and a series of anchor parks along the creek, some existing and some new.



Mobile and Prichard city council districts in the Three Mile Creek Watershed.

Community Partners

- U. S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U. S. Fish and Wildlife Service
- Natural Resources Conservation Service
- Alabama Department of Conservation and Natural Resources
- Alabama Department of Environmental Management
- Alabama Department of Transportation
- Alabama Forestry Commission
- Dauphin Island Sea Lab
- Geological Survey of Alabama
- Mobile Bay National Estuary Program
- Coastal Alabama Clean Water Partnership
- Bishop State Community College
- University of South Alabama
- City of Mobile
- City of Mobile/Keep Mobile Beautiful
- City of Prichard
- Mobile County Commission
- Mobile Housing Board
- Mobile Area Water and Sewer System
- Water and Sewer Board of Prichard
- Alabama Power
- Mobile Area Chamber of Commerce
- Mobile Gas/Sempra
- Scotch Gulf Lumber
- SIMS Metal
- Infirmary Health System
- USA Medical Center
- USA Children's & Women's Hospital
- Alabama Coastal Foundation
- J. L. Bedsole Foundation
- MLK Redevelopment Corporation
- Mobile Baykeeper
- Partners for Environmental Progress
- The Nature Conservancy

The Three Mile Creek Watershed: *A Target of Transformation*

Three Mile Creek and its surrounding watershed present an extraordinary opportunity to the cities of Mobile and Prichard to transform a community liability into a community amenity and waterway destination. Crossing and draining suburban and urban landscapes of greater Mobile, Alabama, TMC suffers from the negative effects of stormwater runoff and decaying infrastructure. Sources of degradation include trash/litter, bacteria from sewage (pathogens), excessive nutrients, invasive species, and erosion and sedimentation.

Until the mid-twentieth century, this creek, originally called the Portage on Bayou Chatoge (*SHAT-oh-gay*) by the French, was Mobile's source of drinking water. A combination of insufficient quantity and impacts to quality caused by increasing urbanization forced the city to go farther west to Big Creek Lake for its water in 1952. By the end of the twentieth century, urbanization had deteriorated the water quality of the creek to a level only recommended for Agricultural and Industrial Water Supply, the lowest of the State of Alabama's water use designations and quality standards. **The stream failed to meet even those lowest of water quality standards** as it carried stormwater from city streets and wastewater discharge from treatment plants to the Mobile River. Its waters have been **placed on the State 303(d) list for impairment by organic enrichment and low dissolved oxygen, nutrients, and pathogens.**

The majority of TMC's 30-square mile watershed lies within Mobile city limits and includes portions of five City Council Districts, all three Mobile County Commission Districts, and portions of three City Council Districts of the City of Prichard. Along its banks are the University of South Alabama (USA); the USA Medical Center, the Mobile Infirmary, and USA Children's and Women's Hospital; Langan, Lyons, and Tricentennial parks; several public housing developments; and a historically significant area known as the Bottom. It drains neighborhoods in west Mobile, northern Spring Hill, Crichton, Midtown, Toulminville and the Bottom before winding through wooded wetlands and heavily industrialized areas before discharging into the Mobile River. The diversity of residents within the TMC Watershed deserves special attention. The urbanized downstream area that includes the Bottom is populated by a traditionally-underserved African-American community. Nearly 25% of household incomes across the watershed fall below the national poverty line. The creek provides valuable resources to these residents, not only in terms of drainage infrastructure, but also as a source of food. On any given day, many can be seen along the creek fishing from its banks.

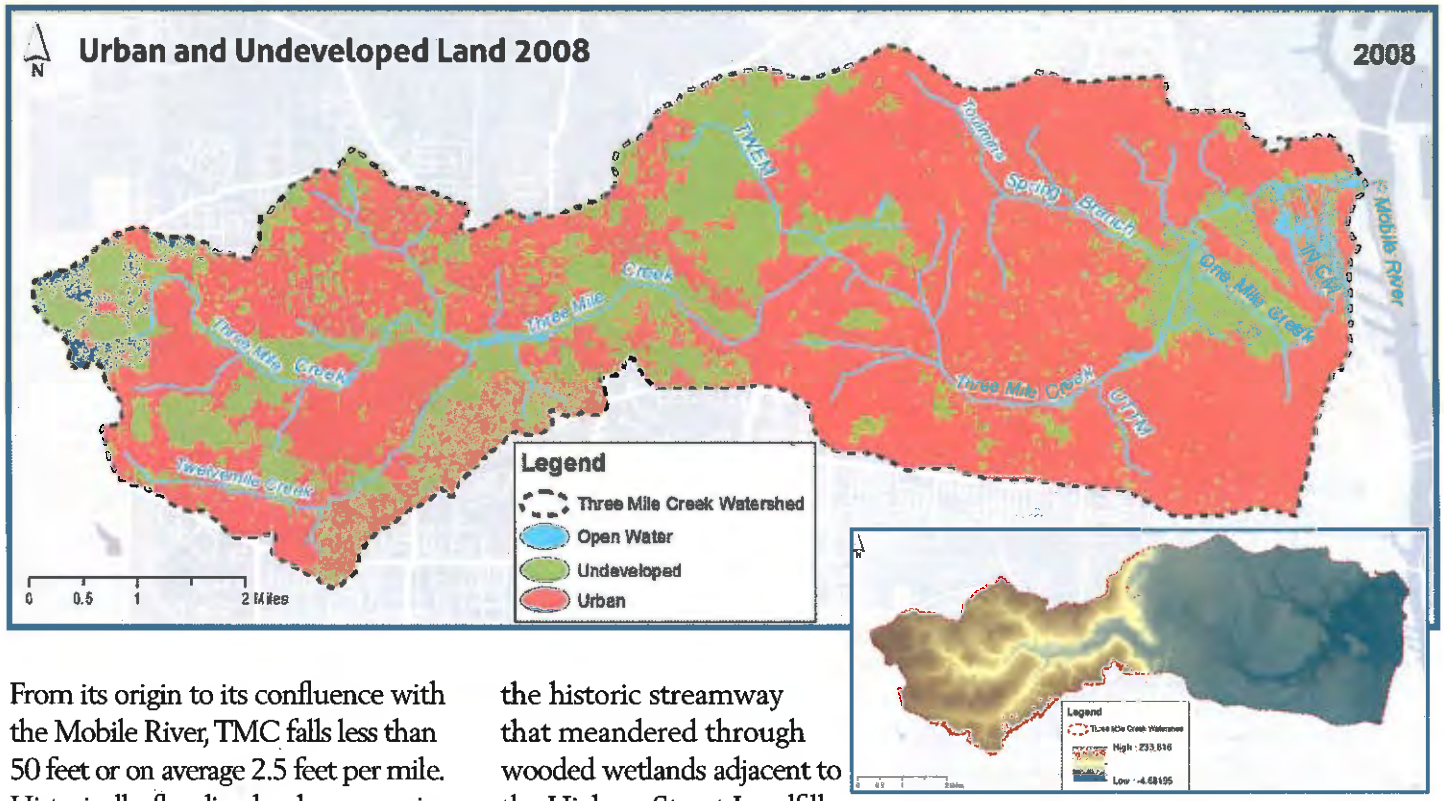
Images of creek baptism in Three Mile Creek. *Photo credit Billy Skipper papers, courtesy of The McCall Library, University of South Alabama.*

TMC is physically, spiritually, and historically ingrained into the fabric of the Mobile community. After the Civil War, an economy based in riverboat trade along the Mobile River and lumber industry triggered new development throughout the area, including a bustling African-American community. Churches used the creek for baptisms, historical paintings depict horse races and hotels along its banks, and kids swam in its as-yet-unspoiled waters.

The cost of fully implementing this plan today will be in the millions of dollars. However, the cost of doing nothing is exponentially greater. Reduced property values, loss of tax revenue, an increased need for infrastructure repairs, and continued disruption and damage to valuable ecosystem services will cost far more over the long run.

Watershed Characteristics

The Three Mile Creek Watershed, located in Mobile County, Alabama drains 19, 237 acres (30.06 mi) and stretches 14 miles from Cody Road, west of the USA, east to a confluence with the Mobile River. TMC is fed by six principal tributaries: Twelve Mile Creek (three miles long with a confluence at Langan Park), the Central Northern Tributary (two miles long with a confluence just east of I-65), an unnamed (central) tributary to TMC (one mile long with a confluence east and adjacent to the Mobile Infirmary), Toulmin Springs Branch (2.5 miles long with a confluence at the northern end of the bypass channel, just south of Conception Street Road), One Mile Creek (almost two miles long with a confluence with the historic streamway east of the bypass channel), and the Industrial Canal (about one mile long with a confluence just west of the Mobile River). Wetlands comprise less than 10% of the total area of the watershed (mostly in the north-central watershed around the Central Northern Tributary or in the lower watershed surrounding the historic streamway), with 1.5% open water (lakes, ponds, and stream), and the remaining 90% upland.



From its origin to its confluence with the Mobile River, TMC falls less than 50 feet or on average 2.5 feet per mile. Historically, flooding has been a major concern, especially in the lower reaches of TMC, which led to federal projects to reduce flooding in the 1980s. The U. S. Army Corps of Engineers widened and straightened the lower one-third of the creek, constructed a bypass channel between MLK Boulevard and Conception Street Road, and added five sets of water control weirs between Brawood Drive and Tricentennial Park. Construction of the bypass channel cut off flow into the historic streamway that meandered through wooded wetlands adjacent to the Hickory Street Landfill.

Upstream near I-65, a natural ridge of 50-foot elevation crosses the watershed and its character changes from low coastal plains and tidal marsh into gently rolling terrain characteristic of pinewoods uplands with a maximum elevation of 256 feet.

In 2010, the population within this watershed was 99,039, comprising about 25% of the total population of Mobile County. The predominant land use in the watershed is residential, consisting of almost 42% of the total area, followed by commercial (26%) and transportation (17%). The remaining portions are industrial (6%) and undeveloped (9%, predominantly wetlands). Future growth is not expected to be a significant factor in the recovery of this watershed, since it is over 90% developed with greater than 37% impervious cover.

Impacts on the Watershed

Concrete-lined channels, like this one on Toulmins Spring Branch, prohibit infiltration and increase stormwater runoff volumes and pollutant loads to Three Mile Creek, degrading water quality and habitat.

Untreated stormwater runoff and pollutant loads from developed areas discharge directly to TMC and its tributaries. The discharge of untreated stormwater runoff to TMC is primary among sources of surface water quality degradation. The major challenges facing the TMC Watershed include:

1. Excessive water quality pollutants – "Gross pollutants," like trash and organic debris, block drainage capacity, contribute nutrients, and decrease dissolved oxygen (DO), necessary for fish and other aquatic organisms. Nutrients from fertilizer, pet waste, and waste treatment output and pathogens from compromised infrastructure or sanitary sewer overflows also impair water quality in TMC.

Impacts on the Watershed

Erosion caused by stormwater runoff threatens infrastructure throughout the watershed. In this photo, bank erosion has exposed a section of sanitary sewer pipe along Twelve Mile Creek, increasing the risk of illicit discharges to the stream.

2. Illicit connections – Sanitary sewer pipes improperly connected to stormwater drainage systems or compromised over time provide a source of pollutants into stormwater outfalls and groundwater entering TMC. High concentrations of organic wastewater compounds and elevated pathogen concentrations during dry weather, especially in the downstream end of the creek, provide further evidence of illicit connections.

3. Effects of stormwater runoff – Stormwater runoff discharging from streets, parking lots, and rooftops of the developed watershed underlie a host of water quality problems, most visibly trash and litter but including stream bank erosion and sedimentation from increased stormwater volume and velocity; increases in stream temperature; and pollutant loadings from trash, sediment, grass clippings, fertilizer and pet waste, and heavy metals and petrochemicals from road surfaces.

Impacts on the Watershed

Kayakers embark on their journey after another challenging portage.

4. Altered watershed hydrology – The flood control project completed by the USACE in the 1980s substantially altered the hydrology of the watershed. Weirs installed to provide storage and slow flows through the channel blocked tidal influence upstream. Berms constructed adjacent to the creek isolated it from its floodplain. Channelization of TMC downstream resulted in isolation of the creek from its historic streamway and adjacent tidal wetlands.

5. Altered creek geomorphology – Over the past decades the creek and its tributaries have been altered to suit immediate needs. Vegetated stream banks have been replaced by concrete-lined channels, improving stormwater conveyance but blocking infiltration, eliminating habitat and natural cleansing processes, and increasing runoff volumes, velocity, and pollutant loads. Riprap and gabions used to create vertical channel banks eliminate riparian buffers and natural connections to flood plains. Lost with those buffers are trees that provided shade that reduced water temperature, cover and resting and nesting areas for birds, and roots that stabilized stream banks and provided structure for fish.

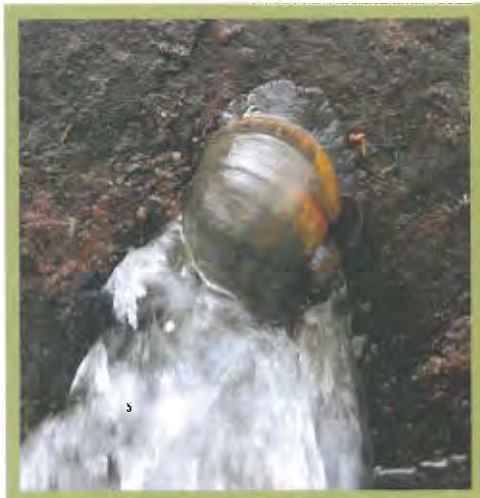
Impacts on the Watershed

6. Submerged aquatic vegetation – Dense beds of largely exotic nuisance species of aquatic vegetation slow water flow, impede recreational paddling, and contribute significantly to low DO.

7. Potential groundwater contamination – The 57-acre Hickory Street Landfill, adjacent to One Mile Creek, was an unregulated dump from 1940 to 1970 and contains five million cubic yards of industrial and commercial waste. In the early 1980s it was covered with a two-foot clay cap that has subsequently been compromised by erosion. The eight-acre Mobile Gas Restoration Site at the headwaters of OMC was used from the early 19th through the late 20th centuries to make natural gas from coal and later as a school bus farm, so it is currently being monitored for potential groundwater contaminants. Both sites warrant further groundwater and sediment monitoring to determine if they are adversely affecting OMC or TMC.

Dense emerged vegetation along the creek's margins (Hygrophila sp.) inhibits recreation. (Location: Three Mile Creek downstream of Summerville Street.)

8. Abundance of invasive species – Since their discovery in TMC ten years ago, Island Apple Snails have proliferated, leaving pink egg cases on emergent surfaces from Langan Park downstream to Telegraph Road. This exotic nuisance species threatens native aquatic vegetation species, especially in the Mobile-Tensaw Delta, despite efforts to eradicate them. Increasingly, Chinese tallow (popcorn trees), taro (elephant ears), alligator weed, and other invasive nuisance plant species displace native plants and the services that they provide to wildlife.



Island Apple Snail

Island Apple Snail eggs are prevalent throughout the downstream segments of Three Mile Creek.

Watershed Management Measures

The effects of stormwater runoff in the Three Mile Creek watershed include excessive loadings of trash and litter, nutrients, oxygen-demanding substances, and pathogens. Once these pollutants are in Three Mile Creek, they produce elevated nutrient and pathogen levels and reduce dissolved oxygen in the water. Elevated nutrients and pathogens in the creek can also affect human health and welfare by making the water unsafe for human contact and producing algal blooms that limit recreation opportunities. Without more effective stormwater management, water quality and stream conditions within the watershed will continue to deteriorate. Because ongoing problems are made worse by each significant rain event, timely action is critical. By successfully addressing excessive stormwater runoff and the sedimentation that it causes, the long-term health of the streams, wetlands, and bays can recover.

Take Pride in Toulminville, Nov. 23, 2013.

The management measures recommended in the plan include restoration or mitigation of past environmental impacts, policy and regulatory changes, and opportunities to employ "cutting-edge" technologies for "green infrastructure" and "Low Impact Development." The WMP recommends implementation of structural and non-structural management measures designed to achieve the goals established for TMC that target the primary causes of degradation. These include, but are not limited to, the following:

Five primary goals guided the development of the conceptual measures addressed in the plan:

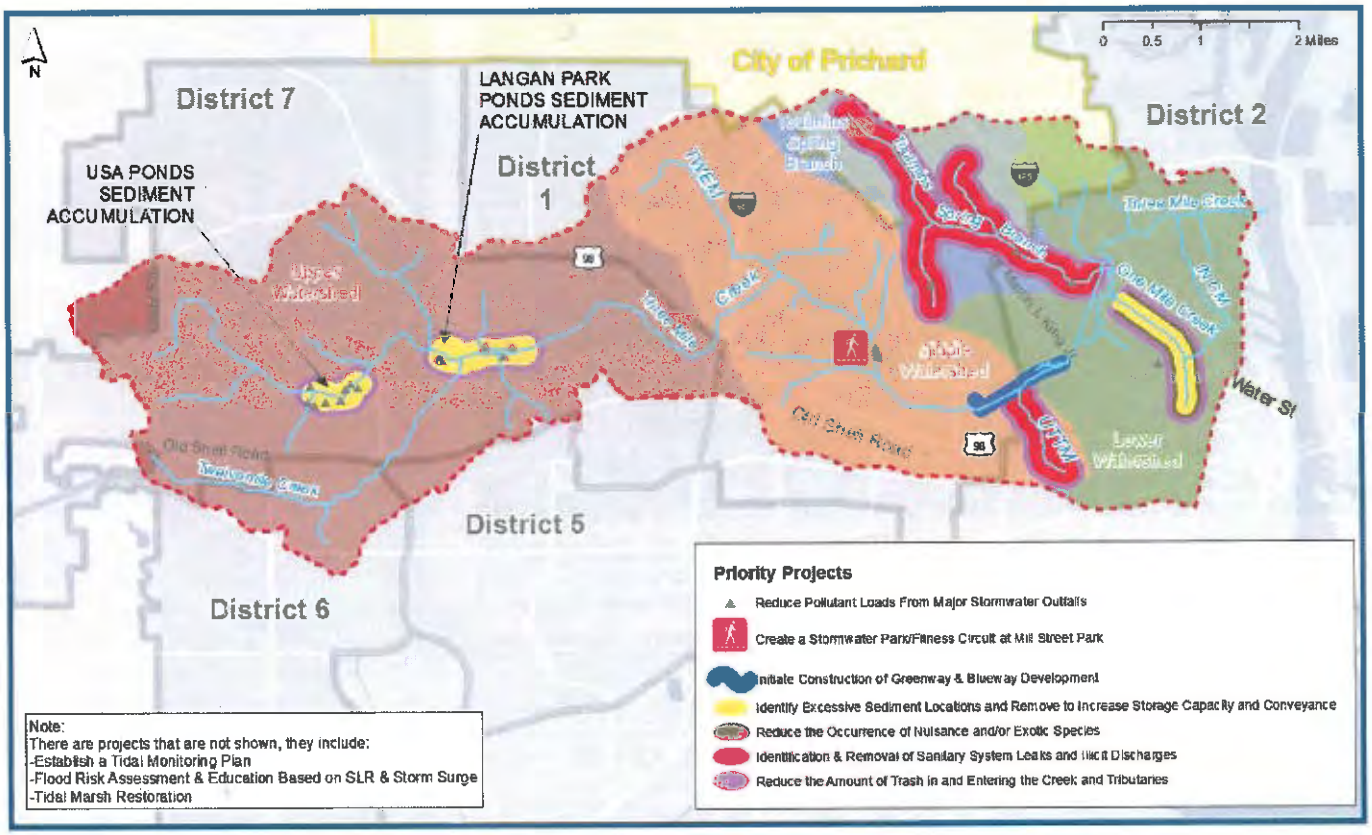
- Improve water quality.
- Provide access to resources.
- Protect and improve the health of fish and wildlife.
- Restore the heritage and cultural connection between the watershed and the community.
- Plan and prepare for climate resiliency.

Secondary objectives that influenced the formulation of management measures included:

- Develop 12.3 miles of continuous greenway.
- Develop a strategy for reducing pollutants in coordination with ADEM.
- Achieve State water quality standards for warm water fisheries.
- Eliminate all known illicit connections/sanitary inputs.
- Reduce amount of trash in waterways by 75%.
- Maintain design level of service for flood protection from USACE dams.
- Install environmental education signage in six existing or proposed parks.

Watershed Management Measures

The following projects have been identified as having the greatest potential to provide significant early benefits towards reaching the goals specified in the WMP and have been prioritized for early implementation. These projects are made up of one or more management measures and are distributed so that communities throughout the watershed will realize initial benefits from this restoration process.



Stormwater

- Install Green infrastructure retrofits in public areas.
- Remove sediment (USA wet detention and Langan Park).
- Construct energy dissipater on Twelve Mile Creek.
- Improve trash management; initiate water-based collection program, and install GPRS strategically.

Wastewater

- Remove illicit discharges to stormwater system.
- Remove failing septic systems.

Ecology

- Improve management of invasive species.
- Restore streambank and riparian buffers.
- Restore wetlands.

Access

- Build greenway(public/private easements).
- Build blueway (three access points, five portage enhancements).

Sea Level Rise

- Restore tidal marsh landward of existing marsh.
- Install backwater control valves.

Cost Estimates and Financing Options

The costs of correcting the significant problems affecting the Three Mile Creek Watershed are anticipated to range between $43 million and $145 million, which includes addressing lack of recreational access and mitigating impacts associated with sea level rise. Doing little or nothing will result in deferred costs that will escalate as environmental deterioration continues. Implementing the measures in the plan will require a significant, steady stream of funding

Alternatives for funding and financing improvements in the Three Mile Creek Watershed include:

- Water use service fees (i.e. stormwater utility fees)
- Funding from non-governmental organizations and other private sources
- Mitigation banks
- Impact fees
- Special assessments
- System development charges
- Environmental tax shifting
- Municipal bonds
- Capital improvement cooperative districts
- Alabama improvement districts
- Tax increment financing districts
- Federal grants, loans, and revenue sharing
- "Green" stimulus funding
- RESTORE Act/NFWF GEBF funding

First Steps

Successful implementation of the **44 management measures** recommended in the WMP will require the **long-term commitment** of significant **financial resources** and community support. Many financial opportunities, primarily federal grants and cooperative agreements, are available to help restore, enhance, and reconnect TMC to its surrounding communities. In recent years, increases in watershed recovery efforts by communities around the nation have significantly increased the competition for these resources. In order to be competitive in this environment, the WMP recommends establishing a model **Three Mile Creek Partnership (TMCP)** representing three primary support sectors:

- **Public** (local government)
- **Private** (business & industry)
- **Community** (place based civic, non-profit)

The TMCP can be created as a public-private partnership among the three entities mentioned above, or it could be established through a grassroots effort (e.g., a 501 [c][3] organization). The TMCP would be the coordinating body for all implementation activities specified in the WMP.

Community Outreach

A Community Outreach and Public Education Plan has been developed to promote the importance of implementing the management measures outlined to achieve:

- improvements in environmental quality;
- enhancements of the quality of life; and
- sustained or improved property values throughout the watershed into perpetuity.

The support of all stakeholders – including residents and those with commercial interests in the watershed – is vital to achieving the measures recommended in the plan.

The Vision is Simple

Three Mile Creek will once again

be a culturally, ecologically and economically important waterway for Coastal Alabama.

For more information go to www.mobilebaynep.com

A biannual newsletter of the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section and the Mobile Bay National Estuary Program

Alabama current connection

SUMMER 2016 • Vol. X, Issue 1

Tracking Progress on Watershed Plans

By Christian Miller, Non Point Source Pollution Outreach, Auburn University and Mobile Bay National Estuary Program

As you will read in this edition's *Estuary Reflections*, the Mobile Bay National Estuary Program (MBNEP) has embarked on a wholesale watershed-based approach to ecosystem restoration and protection that is initiated by development and implementation of comprehensive watershed management plans (WMPs) for all tidally-influenced watersheds in coastal Alabama. What follows is an update of the WMPs in process, which encompass 15 coastal watersheds.

Fowl River was recently assessed by the Geological Survey of Alabama and found to be one of the most pristine watersheds yet monitored in the State. The recently completed WMP for Fowl River highlights the importance of conserving upland wetland and riparian areas to preserving the function of critical habitats throughout the watershed and maintaining healthy streams.

Continued on page 10

Currently Inside

Coastal Corner

By Phillip Hinesley, Coastal Section Chief,
Alabama Department of Conservation and Natural Resources
State Lands Division

Coastal Resiliency and Coastal Hazards Along the Gulf Coast

According to the National Oceanic and Atmospheric Administration (NOAA), in 2010, 123 million people, or 39 percent of the United States population, lived in counties directly on the shoreline. Of these, over 60 million people in the U.S. call the Gulf of Mexico their home, with about a third of those living in coastal counties or parishes. The warm climate, low cost of living, laid back lifestyle and the natural beauty act like a magnet to attract people to the region. With the additional population increases, Baldwin County is now the fastest growing county percentage-wise in the state of Alabama, and Mobile is the second largest county in population in the state.

With these population increases, homes, businesses, and infrastructure are at great risk of damage from hazards such as hurricanes, coastal storms and flooding. Communities that prepare for short- and long-term impacts, consider hazards, risk, and land-use planning, and assess development and management of natural habitats are more resilient communities and are able to recover from disasters more quickly.

So it is probably no surprise that the Alabama Coastal Area Management Program (ACAMP) listed coastal hazards (i.e. storms, flooding, sea level rise) as a high-priority area for funding from the NOAA Coastal Zone Enhancement Program. The enhancement program is an opportunity for states and territories with coastal programs, like Alabama, to complete an assessment every five years to determine priority needs and opportunities for improvement in one or more of nine areas: wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area management plans, ocean and Great Lakes resources, energy and government facility siting, and aquaculture. Once the priorities are identified, the states then develop a multi-year strategy that focuses on one or more of the priorities and submits the plans to NOAA for approval and funding.

In the current five-year cycle, the ACMP proposes to use NOAA funds to implement a project entitled Community Resiliency Initiative: Planning for Resilient Communities. This project will help coastal communities mitigate and adapt to coastal hazards and stressors through enhanced floodplain management, technical assistance, and public outreach programs. To implement the initiative, the Alabama Department of Conservation and Natural Resources (ADCNR) will develop a grant program to provide guidance and funding to local governments within Mobile and Baldwin counties for the purpose of becoming active in the Community Rating System (CRS) and developing and implementing local ordinances related to floodplain management and community resiliency from coastal hazards. Included in the initiative is the establishment of a public awareness program by local governments relating to coastal resiliency. Guidance will be provided through ADCNR with an advisory committee of local partners, such as the Alabama Department of

Damage to beach front condos in Gulf Shores, Alabama from Hurricane Ivan.

Economic and Community Affairs (ADECA), Mississippi/Alabama Sea Grant, Alabama Association of Floodplain Managers, Mobile Bay National Estuary Program, academic institutions, etc.

Throughout the initiative, ADCNR will require an outreach component where local governments incorporate actions that engage the public in the process by conducting public forums, public service announcements and other actions at strategic points in the process. ADCNR, an advisory committee of local partners (created for the strategy implementation), and other coastal partners of ACAMP will work with communities to develop and disseminate information and presentations targeting public awareness and input.

ADCNR will work closely with the ADECA, Office of Water Resources (OWR), on training materials and information sources related to OWR floodplain management programs. This is done in conjunction with FEMA and local communities to build relationships and to strengthen mitigation plans and actions to better protect residences and communities through flood mapping and flood studies.

Additional partners in the effort could include the Alabama Association of Flood Plain Managers, who sponsor conferences and seminars that provide up-to-date educational programs and network opportunities with other partners interested and experienced in floodplain management.

***Damage** to beachfront home from Hurricane Dennis.*

The goal is to educate local communities about the CRS and encourage local communities to participate in CRS which will benefit all parties. (For more information on this effort, go to http:/ www.outdooralabama.com/)

In addition to the ACAMP effort, NOAA has also funded the Gulf of Mexico Alliance (GOMA) to address coastal resilience. The GOMA, based in Ocean Springs, Mississippi, is a partnership working to sustain the resources of the Gulf of Mexico. Led by the five Gulf States, the broad partner network includes federal agencies, academic organizations, businesses, and nonprofits in the region. Its goal is to significantly increase regional collaboration to enhance the environmental and economic health of the Gulf of Mexico. GOMA has six priority issue areas: education and engagement, data and monitoring, habitat resources, water resources, wildlife and fisheries, and coastal resilience.

The GOMA received a major NOAA Coastal Resilience Grant recently. Two of the six GOMA teams, Habitat Resources and Coastal Resilience, will work with ten coastal Gulf-wide communities to foster resilience planning and promote best practices for future mitigation actions. The award will support the update of existing tools identified by communities as vital to the decision-making process. The project aims to improve risk communication and will develop a Coastal Resilience Roadmap for use by communities throughout the Gulf to prepare for future hazards.

"The challenges confronting our nation's coastal communities are incredibly complicated. Effective solutions are going to require strong science, ingenuity, and collaboration if they are going to safeguard and ensure the future vitality of our economy and valuable natural resources," said Dr. Jeffrey Payne, Acting Director of the NOAA Office for Coastal Management.

GOMA was awarded one of six grants totaling $4.5 million. NOAA received 132 proposals, creating a highly competitive selection process. The chosen projects improve coastal risk assessment and communication, promote collaborative resilience planning, and better inform science-based decisions.

Damage to a local Gulf Coast marina from Hurricane Ivan.

"The projects approved for funding represent opportunities to do just that. We are excited about what these partnership projects will accomplish at the local level and the positive impact this program will have on our nation." Payne said.

Gulf of Mexico coastal communities will enter a competitive process for selection as one of the ten projects worth $45,000 each. The communities will evaluate ways to enhance resilience by working with experts from the GOMA teams. As the communities take new steps to become risk-resilient, they will become part of a Resilience Community of Practice. Here, they will share their experiences with their peers and establish protocols from which others may learn. For more information on this project, go to: www.gulfofmexicoalliance.org.

By Roberta Swann, Director,
Mobile Bay National Estuary Program

Half Way There –

Achieving the 5-Year Goals of the CCMP

The Mobile Bay National Estuary Program's *Comprehensive Conservation and Management Plan (CCMP) for Alabama's Estuaries and Coast 2013-2018* was developed in collaboration with government agencies, industry, academia, and citizen groups to protect water quality, sustain populations of key living resources, manage vital habitats, mitigate human impacts, and build citizen stewardship. This CCMP includes actions prescribed by teams assembled around the six things people value most about living in coastal Alabama: Access, Beaches and Shorelines, Fish and Wildlife, Environmental Health and Resiliency, Heritage and Culture, and Water Quality. Over 140 actions were compiled, posted for public review and, with input from 232 respondents, distilled, prioritized and included in five-year strategies under one of the following areas: **Estuary Status and Trends, Ecosystem Restoration and Protection, Technical Assistance and Capacity Building**, and **Education and Public Involvement.** It's now 2016 – halftime – when coaches review and evaluate progress to ensure a strong second-half performance by their team. So how did we do in the first half?

Estuary Status and Trends (EST) addresses "biological integrity," particularly in the most- and least-stressed habitats and watersheds, what monitoring and research are needed, and how we can reduce stressors and then communicate the biological changes that result. The MBNEP's Science Advisory Committee (SAC) has overseen important data development and mapping initiatives funded through the National Fish and Wildlife Foundation's Gulf Environmental Benefits Fund (NFWF GEBF). Mapping of coastal submerged aquatic vegetation (SAV), previously undertaken in partnership with the State in 2002 and 2008-2009, is currently nearing completion. High-resolution habitat mapping to establish a present-day baseline of distribution and coverage and an updated soil survey, both of the two-county area, have also been initiated. Discussions are currently under way with the Dauphin Island Sea Lab over establishment of a data repository accessible to resource managers and investigators.

Another CCMP-prescribed EST initiative is the development of a Habitat Restoration Plan and a Mapping Tool to identify critical habitat restoration needs to improve ecological function and to provide a tool to track progress of conservation and restoration activities. The Habitat Restoration Plan will combine data from habitat and SAV maps, as well as digital information and recommendations from completed watershed plans, to determine where restoration and conservation activities will provide the greatest "bang for the buck" towards restoration and protection of ecosystem services. This plan will include an inventory of restoration and conservation opportunities to guide future NFWF GEBF and other funding source requests. The online decision support mapping tool will utilize a number of statewide data sets and data gleaned from ongoing watershed management planning to provide scientific information to support decisions about watershed and estuarine resources along with access to all data sets. It would supplement the ongoing development of coastal watershed management plans by providing a resource for community stakeholders and planners to prioritize and monitor the implementation of management recommendations and to guide NFWF, RESTORE, or other funders to determine where restoration efforts should be used.

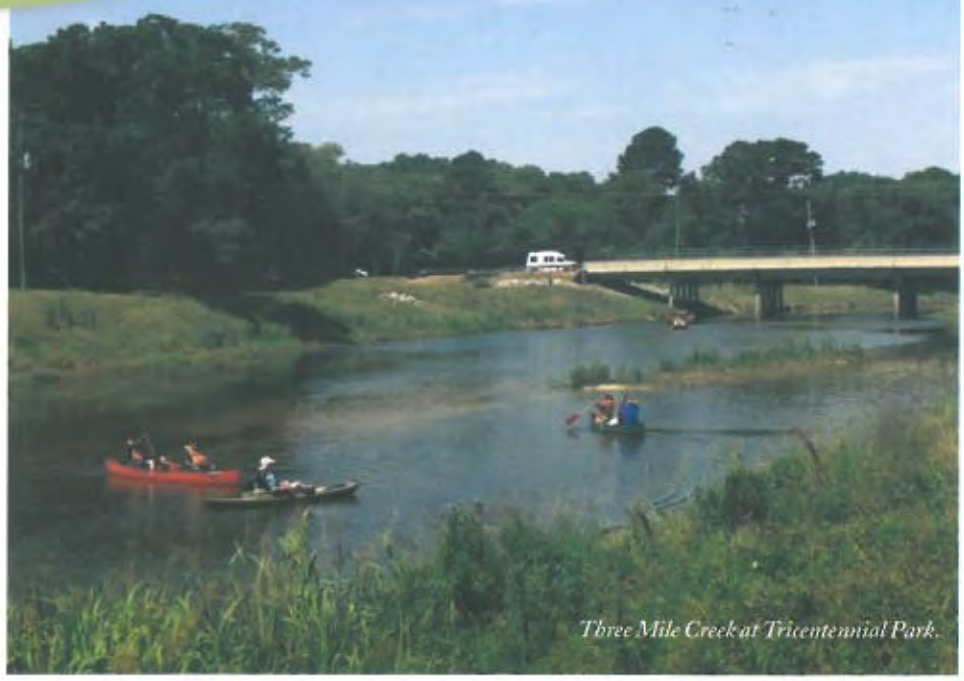
Meanwhile, towards development of a Biological Condition Gradient (BCG) to track the health of critical habitats, the SAC has developed a standardized monitoring framework to assess water quality, understand freshwater flow and sedimentation, and relate the condition of habitats to the impacts of development. Wetland assessments delivered as part of the habitat mapping effort and indices

developed for local streams and their banks will be used to calibrate this tool to understand trends and condition and to guide management actions. The BCG framework will be tested in the D'Olive Watershed, where stream restoration activity is ongoing and impacts to SAV are apparent. Sediment analyses to determine baselines and track restoration success are also happening on both sides of the Bay.

The CCMP prescribes scientifically-based **Ecosystem Restoration and Protection** measures developed and recommended through, and including, watershed management planning. This CCMP has garnered national attention for a watershed approach that prescribes watershed management plans (WMPs) to ensure restoration projects are based in science and fit into an overall management program. This approach is a shift in paradigm from traditional municipal or county planning, where geopolitical boundaries limit actions.

Suggested activities in the CCMP's ERP strategy are highlighted by development and implementation of WMPs and a protocol that involves sediment-loading analysis as a precursor to WMPs. Recognizing the value of this approach, NFWF GEBF funding has allowed us to move quickly towards fulfilling these recommendations. NFWF funded a sediment analysis and WMP for Fowl River, both recently completed, and sediment analyses are underway for Bayou La Batre, Dog, and Fish rivers' watersheds. A subsequent GEBF award funded WMPs for Bayou La Batre River, Dog River, and Fish River, Bon Secour River (all in progress) and the Wolf Bay and Apalachee-Tensaw complexes (anticipated to begin soon). The Federal RESTORE Council has approved funding WMPs for all 19 remaining tidally-influenced watersheds in Baldwin and Mobile counties. Planning for West Fowl River/Delchamps Bayou and Dauphin Island will be incorporated into the Bayou Le Batre effort, leveraging RESTORE funding and the Corps of Engineers, State, and USGS Alabama Barrier Island Study.

Implementation of stream restorations recommended in the 2010 D'Olive Creek WMP is progressing with dramatic early results. The award-winning 2012 construction of the step pool stormwater conveyance in the Joe's Branch subwatershed and the NFWF-funded restoration of JB Phase 2 resulted in an over 90 percent reduction of downstream sediment loads. The five remaining NFWF-funded Joe's Branch restorations are currently underway. The Tiawasee Creek restoration, implemented by a partnership between MBNEP with NFWF funds and the City of Daphne with Coastal Impact Assistance Program funds is substantially completed. Restoration of the chronically degraded D4-D6 tributary to D'Olive Creek between Interstate 10 and U.S. Highway 90 will be underway in May, and remaining NFWF-funded D'Olive Creek restorations are all in planning phases.



Three Mile Creek at Tricentennial Park.

WMP implementation of the west side of the Bay is ramping up, with several recommendations from the 2013 Three Mile Creek (TMC) WMP underway or planned. MBNEP has:

- Helped the City of Mobile secure National Park Service and Mobile County Health Department funding to construct the first leg of the TMC Bicycle Trail and Kayak Launch.
- Collaborated with the MLK Jr. Avenue Redevelopment Corporation to establish and conduct a successful Leadership Academy.
- Funded an Auburn University analysis and hydrologic modeling of areas draining into Toulmin Springs Branch and a Mobile County drainage study to guide drainage improvements to alleviate flooding.
- Conducted intensive community adaptation planning at churches across the lower TMC watershed to determine where environmental protection is needed, what parts of the community can be accommodated, to set a course for future resiliency planning for critical infrastructure, and to identify areas that may need to be vacated as waters rise.
- Cultivated a partnership with the University of South Alabama towards increased use of low impact development (LID) and collaboration on engineering initiatives.
- Been involved in Three Mile Trace Neighborhood of Choice planning initiative.
- Partnered with The Nature Conservancy in planning a Toulmins Spring Branch Stormwater Park.

Other WMPs are also being implemented. In the Eight Mile Creek Watershed, an assessment of failing septic systems has been completed, and the Mobile County drainage study will guide improvement plans. In Fowl River, a construction contract has been awarded to restore the shoreline along the northern end of Mon Louis Island to its 1995 footprint, create an additional four acres of salt marsh, and dredge the shallow navigation channel through the river mouth into Mobile Bay.

Continued on page 9

Marsh Island (Portersville Bay)

Restoration Project Update

Looking west along the northern shoreline of Marsh Island in Portersville Bay

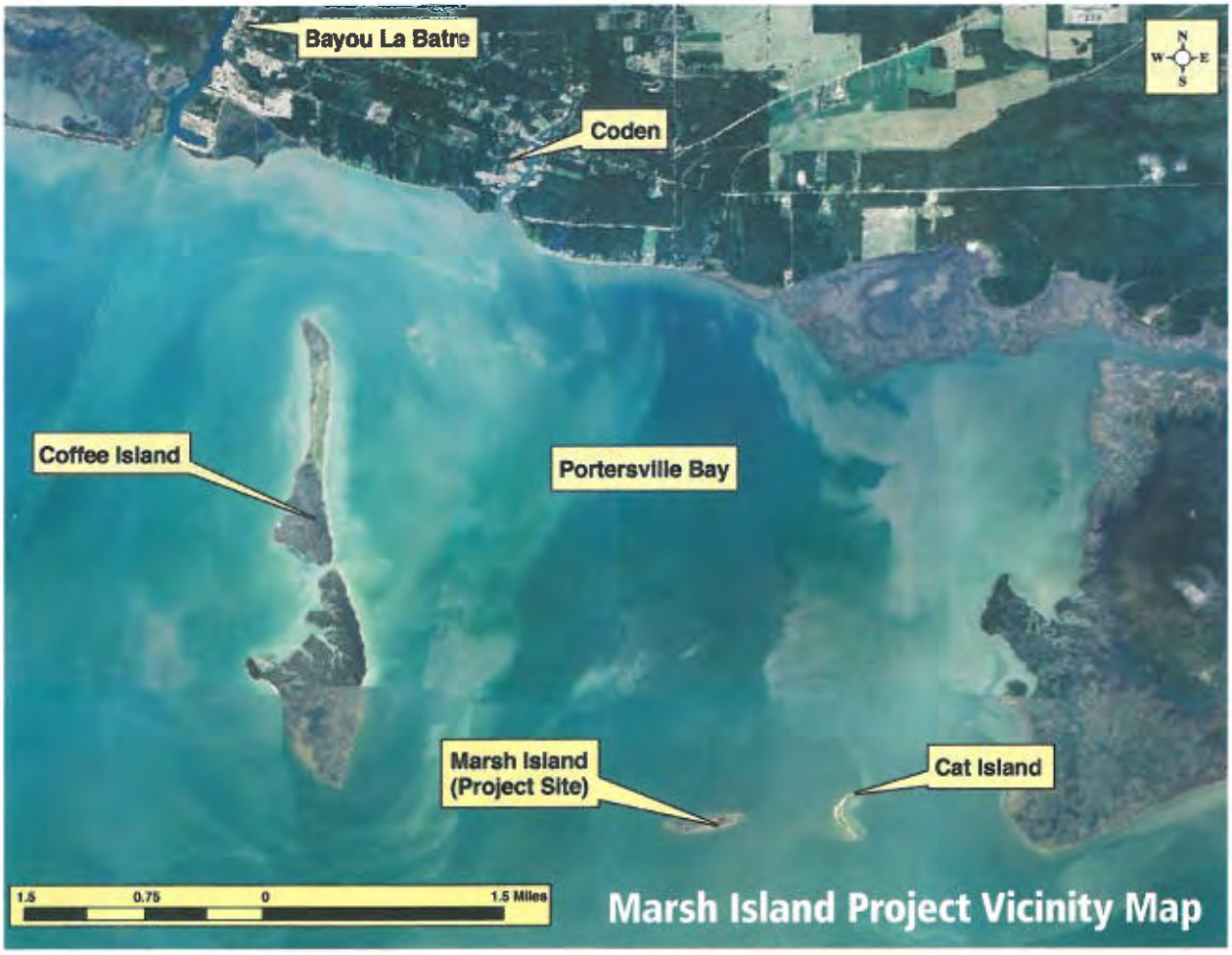
By Carl Ferraro, Biologist III, Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section

As part of the Deepwater Horizon Natural Resource Damage Assessment Phase I Early Restoration Plan (DWH-NRDA-ERP), the Alabama Department of Conservation and Natural Resources (ADCNR) has initiated construction of the Marsh Island (Portersville Bay) Restoration Project. A construction contract was recently awarded, and at the time this article was written, construction was scheduled to begin in early May 2016 and should be well underway by time of the printing of this issue of *Alabama Current Connection*.

State-owned Marsh Island is in the Portersville Bay portion of Mississippi Sound, located approximately four miles south of Coden in southern Mobile County. The island is mainly covered by low-lying salt marsh with some higher areas comprising oyster shell hash and salt-tolerant shrubs. Early 1800s historic navigation charts indicate that the island was over 175 acres in size. By 2010, due to sea level rise, wave action, storms and other factors, the island had been reduced to less than 24 acres. The Marsh Island restoration project was originally proposed in 2011 as part of DWH-NRDA-ERP-Phase I. The project will restore at least 50 acres of salt marsh and tidal creeks on the north side of the island. Additionally, a breakwater will be constructed along its southern shoreline to reduce wave energy and further erosion.

The project will restore at least 50 acres of salt marsh and tidal creeks on the north side of the island.

After the project was approved as part of the DWH-NRDA-ERP Phase I, the ADCNR entered into a professional services contract with Thompson Engineering, who have since provided design, engineering and



regulatory compliance services. This has included conducting field surveys and environmental assessments, geotechnical investigations, wave modeling, preparing drawings and construction documents, and assisting in obtaining a U.S. Army Corps of Engineers permit for the project.

Once all regulatory and environmental requirements were met, permits for the project were received by the ADCNR in late August 2015. The Thompson team then went to work finalizing the project manual, drawings and bid documents. A request for bids was released on November 15, 2015, and bids were opened on January 13, 2016. 4-H Construction was the low bidder on the project, and a contract was executed with 4-H on March 11, 2016.

The Marsh Island Restoration Project is another step in continuing to address ecological injuries caused by the oil spill.

The first phase of construction will involve creating containment dikes around the 50-acre marsh restoration area on the north side of the island. Once dikes are in place, dredging and placement of sediment will commence, as will construction of the breakwater on the south side of the island. Active construction is expected to take approximately 240 days. The sediment will then be allowed to settle and consolidate before the excavation of the tidal creeks and the planting of marsh vegetation. Commencement of construction to completion of planting could take up to 500 days.

The Marsh Island Restoration Project is another step in continuing to address ecological injuries caused by the oil spill. Look for updates on this and other coastal restoration projects in the Fall 2016 issue of *Alabama Current Connection*.

Alabama's RESTORE Act Center of Excellence

What Is It and What Will It Do?

By Renee Collini, Science Coordinator, Mobile Bay National Estuary Program and John Valentine, Director, Dauphin Island Sea Lab

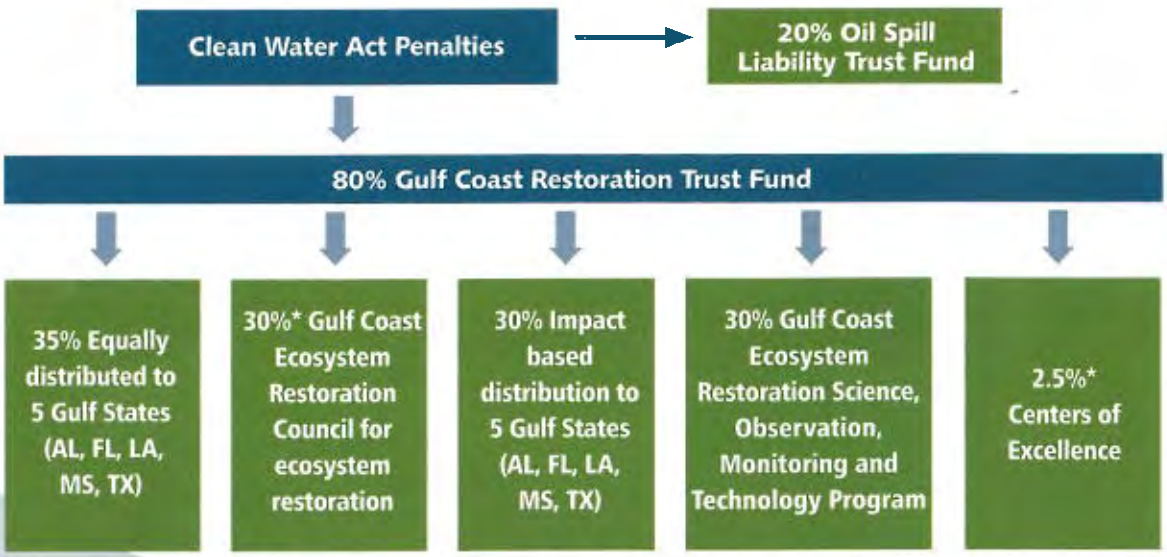
April 2010 saw the Gulf Coast rocked with the Deepwater Horizon oil spill. In addition to effects off-shore in the Gulf, coastal ecosystems and economies suffered negative impacts. Recognizing this, in July 2012, Congress passed the Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act). The RESTORE Act ensures that 80 percent of all administrative and civil penalties, often referred to as "Clean Water Act Penalties," related specifically to the Deepwater Horizon spill will be utilized to restore the ecosystems and economies of the Gulf Coast. The 80 percent is placed into what is called the Gulf Coast RestorationTrust Fund (Trust Fund).

The monies dedicated to the RESTORE Act are then divided into five different sections called "pots" or "buckets" (Fig 1). One of these five buckets is dedicated to the development of Centers of Excellence in each state. The Centers of Excellence bucket contains 2.5 percent of the total funds that enter into the Trust Fund and 25 percent of the interest generated by the Trust Fund. Those monies are then divided among the states to develop Centers of Excellence.

What is a Center of Excellence and what does it do?

A Center of Excellence, will distribute the funding from the Trust Fund in the form of grants to further science, technology, and monitoring related to Gulf restoration. To become a Center of Excellence, U.S. Treasury regulations stipulated that a competitive process must be run in each state to identify the best consortium or institution for the job. In Alabama, the Alabama Gulf Coast Recovery Council put out a Request for Proposals (RFP) inviting institutions and consortiums to apply to be the Center of Excellence. Based on the submitted proposals on December 4, 2015,

Allocation of Gulf Coast Restoration Trust Fund



***Supplemented by interest generated by the Trust Fund (50% to Gulf Coast Ecosystem Restoration Council, 25% to Science Program, 25% to Centers for Excellence)**

Visual of the allocation of the Gulf Coast Restoration Trust Fund. Image courtesy of www.restorethegulf.gov

the Alabama Gulf Coast Recovery Council voted unanimously to recommend that the State of Alabama enter into contract negotiations with the Dauphin Island Sea Lab (DISL) to be Alabama's Center of Excellence. Those contract negotiations have begun and are the first in a series of actions required to officially be recognized as Alabama's RESTORE Act-funded Center of Excellence.

Once a Center of Excellence has been identified, each state has adopted different ways to go about distributing the funds. Each Center of Excellence has to identify focus areas from U.S. Treasury-defined priority disciplines. Dauphin Island Sea Lab chose to focus on four of the five:

- Coastal and deltaic sustainability, restoration and protection, including solutions and technology that allow citizens to live in a safe and sustainable manner in a coastal delta in the Gulf Coast Region;
- Coastal fisheries and wildlife ecosystem research and monitoring in the Gulf Coast Region;
- Sustainable and resilient growth, economic and commercial development in the Gulf of Mexico; and
- Comprehensive observation, monitoring, and mapping of the Gulf of Mexico.

The funds awarded to each Center of Excellence will then be utilized to further the science, technology, and monitoring under these specific priority disciplines. The Alabama Center of Excellence will do this through a competitive grants process and will coordinate with the other four Centers of Excellence and the Gulf of Mexico University Research Collaborative to reduce duplicative efforts. Additionally, outreach will be conducted utilizing Mobile Bay National Estuary Program and Mississippi-Alabama Sea Grant to inform policy-makers and concerned citizens about the importance of our coastal resources to successful coastal communities.

Research from the Alabama Center of Excellence will provide improved understanding and insight to decision-makers working for strong and resilient Alabama communities, ecosystems, and economies. ■

Creekfest 2015

Half Way There – *Achieving the 5-Year Goals of the CCMP* *Continued from page 5*

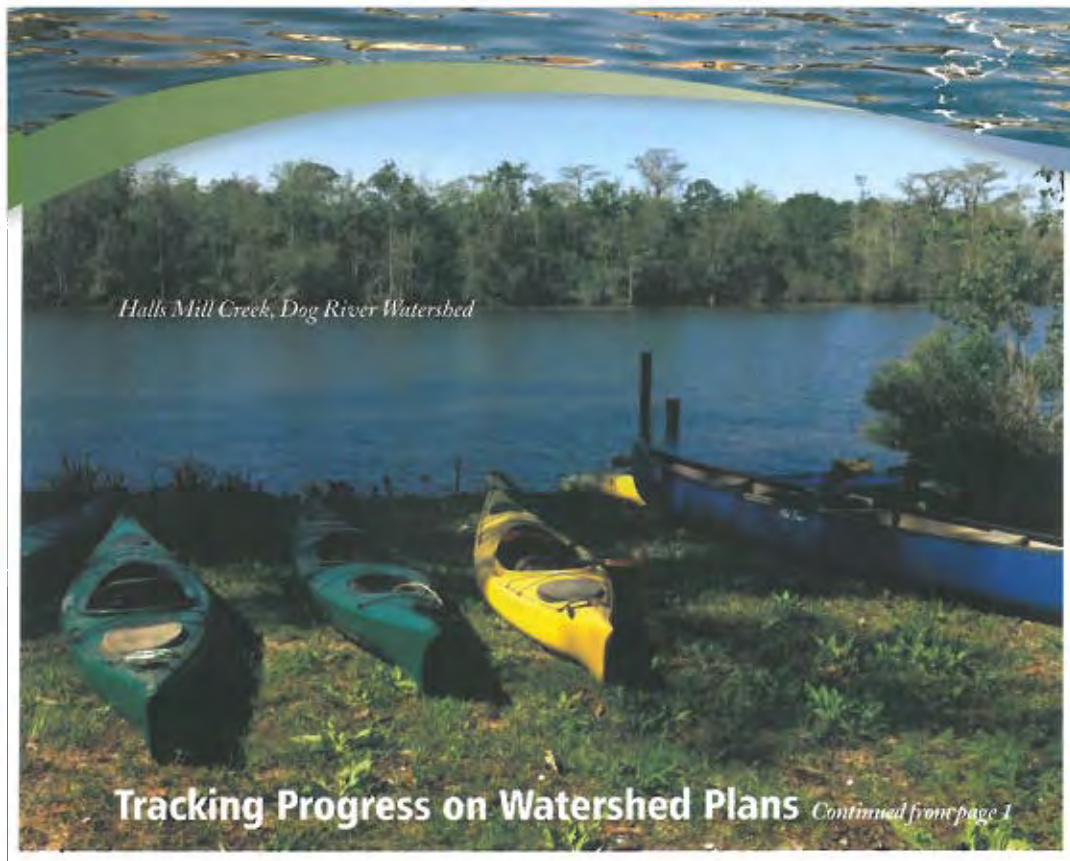
Towards **Technical Assistance and Capacity Building**, MBNEP has worked to improve private sector/business understanding of coastal assets by hosting boat trips in TMC and on the Bayou La Batre River, tours of restoration projects, and various community presentations. Working with a broad range of partners, the Create a Clean Water Future Campaign has gained traction with adoption by local business interests, recent introduction of an informative website, and a public outreach campaign with billboards and signage encouraging reduction of litter. A video was produced to educate municipal officials on MS4 permit requirements, and another, *Slowing the Flow*, is being produced to encourage the use of Low Impact Development (LID) practices. MBNEP provided a Living Shorelines Manual for property owners and are involved in an effort to educate contractors in living shorelines practices with production of another manual.

Education and Public Outreach efforts are critical to encouraging wise stewardship of coastal assets, and most MBNEP initiatives direct significant energy towards this area. MBNEP continues to:

- Provide community presentations and workshops;
- Engage watershed groups in WMP development;
- Promote and support volunteer water quality monitoring;
- Host community cleanups to encourage positive behavior changes and ommunity ownership; and
- Participate in environmental festivals and celebrations of heritage and culture.

In addition, MBNEP's Community Action Committee has sponsored fundraising workshops, volunteer monitoring trainings, and a grant-writing workshop.

Halfway through our 5-year strategies, we can take some satisfaction in progress achieved while maintaining respect and recognition of CCMP-prescribed activities not yet checked off the list. The groundwork has been laid for a solid second half, ensuring a strong finish in achieving the 5-year goals of the CCMP.



Halls Mill Creek, Dog River Watershed

Tracking Progress on Watershed Plans *Continued from page 1*

The WMP acknowledges that although the overall health of Fowl River is good, nutrient loading, stormwater runoff from land use change in the headwaters, and habitat loss are all issues that need to be addressed and monitored. Recommendations for initial implementation focus on restoring and stabilizing shorelines in the lower watershed, habitat restoration, stormwater project opportunities, and initiation of a public education and outreach program.

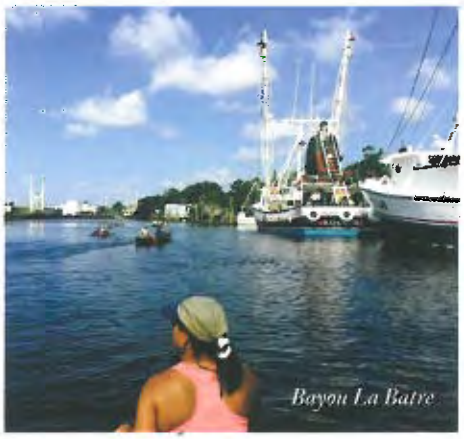
"We are happy to announce that the Final Fowl River Comprehensive Watershed Management Plan has been published. The plan is actively being utilized as funding requests have already occurred to implement high-priority projects outlined in the plan. We are extremely grateful to the many active and engaged citizens that were vital in the effort to protect the important natural resources throughout Fowl River. Special thanks to Mobile Bay NEP for spearheading this effort and their collaborative work to protect our coastal watersheds throughout Mobile and Baldwin Counties." – Lee Walters, ***Director of Environmental, Goodwyn Mills and Cawood***

Dog River flows through the heart of Mobile and drains over 60,000 acres of mostly urban or transitioning land. Community input to the Dog River and Garrow's Bend WMP indicates improving water quality, litter reduction, and increasing recreational access to be among the most important issues. The Goodwyn Mills and Cawood (GMC) team leading the project has focused on assessing available water quality data and looking for ways to supplement this with additional monitoring where needed. Another component the watershed team has focused on is an assessment of critical habitats in the watershed. With so much of the upper portions of the watershed being highly urbanized, identifying and protecting remaining headwater wetlands and riparian areas is a paramount concern.

"The development of an updated watershed management plan for Dog River is crucial to providing the scientific background necessary for us to successfully compete for funding for projects with a long-term benefit to Mobile's Dog River. Protection of critical wetlands, expansion of public access, and involvement of citizens in meaningful water quality monitoring throughout the watershed help to give citizens of all ages a connection to the river. The watershed management plan gives everyone a chance to speak out and work together to make Dog River an amenity for all Mobilians." – Dr. Mimi Fearn, ***University of South Alabama Associate Professor of Geography, Retired***

Bon Secour has long been associated with Alabama's seafood industry, a fact reflected in stakeholder surveys and input sessions that have been a part of the planning process for Bon Secour, Oyster Bay, and the Skunk Bayou watersheds. Community input has focused on the importance of protecting the fisheries, improving water quality, and reducing the impacts of stormwater related to urbanization in the headwaters of the Bon Secour River. The Volkert team has recently been focusing on completing field assessments throughout the planning area and identifying potential management managers that address stakeholder concerns.

"Bon Secour River has a long, rich history for recreation and seafood so our goal is to restore and protect the river for our future generations. Local participation will be key, as there are many diverse interests throughout the watershed." – Leslie Lassitter Gahagan, ***Environmental Programs Manager, City of Foley***



Bayou La Batre

Bayou La Batre is intimately tied to the coastal habitats supporting fisheries that are the local economy's main driving force. In the Bayou, an ongoing effort to engage the community coalesced around two central themes: creating additional public access points for the Bayou's waterways and increasing the community's resiliency or ability to withstand future storms and sea level rise. The Dewberry team has focused the science on cataloging the current health and function of the Bayou's waters and ecosystems and developing a suite of recommended management measures encompassing everything from habitat protection to improving city stormwater and sanitary sewer infrastructure.

Stakeholder workshop for Weeks Bay Watershed Management Plan.

"The resident watershed stakeholders are very adamant that protecting the natural habitat is paramount to preserving their history and culture." – Chris Warn, ***Project Manager, Dewberry***

Weeks Bay is the receiving water of both the Fish and Magnolia rivers, which collectively drain over 200 square miles in western Baldwin County. At the end of 2015, a team led by Thompson Engineering was selected to produce the WMP for the Weeks Bay Watershed. A Stakeholder Working Group was formed in early 2016 to help guide the development and early implementation of the plan and helped facilitate a stakeholder workshop drilling down into the perceived strengths, weaknesses, and opportunities within the watershed. Concurrent to the WMP effort, an assessment is underway within the watershed that will quantify sediment transport and examine impacts of land-use change and associated impacts on water quality.

"The Thompson team brings a great deal of expertise and technical qualifications. As a member of the stakeholder working group, I see the ongoing modeling, research, monitoring, and public participation resulting in development of strategies that effectively address challenges in a rapidly changing area." – Mike Shelton, ***Training and Watershed Program Coordinator, Weeks Bay Reserve***

Mobile Bay National Estuary Program Continues to Grow: *Welcomes Two New Employees*

By Mobile Bay National Estuary Program Staff

Ben Brenner, Digital Production Coordinator

Ben Brenner is an independent video and web producer based in Mobile, Al. For the past decade, he has been helping a variety of small businesses and nonprofits throughout the country with their marketing and digital production. Ben's role at the MBNEP is filming and production of video content, websites, and other digital media. When not working on a project, you'll find him on a bicycle or in a kayak exploring the many trails and waterways the area has to offer.

Dixie Pomerat Program Administrator

Dixie Pomerat has provided administrative support, technical writing, social media and content development for digital imaging businesses in Mobile as well as for nonprofit organizations in North Carolina and Alabama. The mother of three children, she likes to cook, read and hike. At Mobile Bay National Estuary Program, you will often find her working at her standing desk.

Volunteers with Coastal Cleanup gather roadside tras

Community Collaboration *Leads to Cleanup Success*

By Angela Underwood, Natural Resources Planner, Alabama Department of Conservation and Natural Resources, State Lands Division – Coastal Section

September 17th will mark the 29th anniversary of the Alabama Coastal Cleanup. Hard work and the participation of over 5,500 community members lead to the continued success of Alabama's largest volunteer effort. With 31 cleanup zones representing coastal and inland waterways, dedicated zone captains are critical to ensuring that volunteers have the supplies and support they need to accomplish litter removal on such a large scale. Zone captains distribute supplies, ensure volunteer safety and comfort, and tally the totals of trash removed from each zone. To recognize the outstanding work accomplished by volunteers across the state, zones are chosen each year to receive the Alabama People Against a Littered State (AL PALS) Governor's Award. In 2015, the Theodore Industrial Canal (TIC) zone in Mobile County and the Daphne zone in Baldwin County were honored. The cleanups at both sites are truly community events, with several partnering groups at each site working to implement the event.

The TIC zone was started in 1999 and captained by Travis Osborne, current Environmental Manager at Holcim U.S. Inc. As participation increased, Travis enlisted Mitzi Houk, former Alabama Power employee now with Southern Company, to be his co-captain. Over the years, Holcim and Alabama Power have been great supporters of Coastal Cleanup, providing not only volunteers, but the small details such as drinks, snacks, gloves, sunscreen, bug spray, and hand sanitizer that go into making a cleanup event safe and successful. After the cleanup, the volunteers are invited to Holcim to debrief while they enjoy free pizza provided by local vendors. The volunteers look forward to talking about the unusual things they found and stories about the day. Travis and Mitzi comment that it is a hard day's work (especially those years when it rains or is extremely hot), but the sense of pride and accomplishment at the end of the day is felt by all. The zone had a record of 187 volunteers last year, many of them Holcim and Alabama Power employees, and is now the largest environmental community outreach event Holcim sponsors each year.

Organizers of the Daphne site feel that the cleanup is an opportunity to teach resident children, from an early age, the long-term benefits of taking care of the environment.

Daphne has been involved with Coastal Cleanup since 1992 and is one of the largest zones with 600 volunteers participating last year. It takes coordination among the two zone co-captains (Priscilla Dabney, a teacher of Marine Science at Daphne High School, and Amy Gohres, an environmental consultant), workers from the City of Daphne public works department, Daphne Utilities, and volunteers enlisted from the Daphne High School Key Club and Girls Service Club to manage such a large zone.

Continued on page 16

Alabama Coastal Comprehensive Plan (ACCP)
A Guide for Resiliency

By Eliska Morgan, Coastal Restoration Coordinator, Alabama Department of Conservation and Natural Resources

As reported in a previous issue of *Alabama Current Connection*, the Alabama Department of Conservation and Natural Resources has partnered with the U.S. Army Corps of Engineers - Mobile District (USACE), the Mississippi-Alabama Sea Grant Consortium, and the Mobile Bay National Estuary Program (MBNEP) to develop a constituent-informed, science-based coastal comprehensive plan to strengthen the economic, environmental, and social resilience of coastal Alabama for current and future generations.

By maximizing the use of resources in support of this comprehensive planning effort, the ACCP will create a roadmap for local, state and federal officials as they seek to

- **Reduce the susceptibility of residential, commercial and public infrastructure to storm damages, climate change, and sea level rise;**
- **Improve habitats for freshwater, coastal, and marine resources to support commercial and recreational harvest;**
- **Assist in the restoration of natural and human-made features damaged by erosion or unwise land use or development decisions;**

- **Promote long-term erosion reduction during future natural hazards; and**
- **Promote diversification of economies within the two coastal counties as a means of economic resilience from future hazards.**

As part of the initial development of the ACCP, 19 visioning sessions were conducted last year – 17 with targeted focus groups and two with a broader public audience. Using input received in the visioning sessions, a survey is being developed by the MBNEP to further identify and classify priority issues. When given the opportunity, we hope you will take the time to participate in the MBNEP survey this summer, as this process will generate valuable information for the USACE to develop vulnerability and adaptability assessments.

It is not too late to share your coastal vision on the ACCP website at accp.usace.army.mil. You may also visit the website to get the latest update on the ACCP, as well as to view comments received thus far on an interactive map.

Create a Clean Water Future – *Join the Movement, It's Picking Up!*

By Ben Brenner, Digital Production Coordinator, Mobile Bay National Estuary Program

We've asked thousands of folks around Mobile Bay, and they all want clean water in our streams, rivers, and bays. Those waters, though, are threatened by a variety of pollutants, and while no single government, nonprofit, business, or individual can solve the problem on their own, if each of us does our part, we can together create a clean water future. That's why the Mobile Bay National Estuary Program is proud to announce the launch of the new website for the Create a Clean Water Future campaign. The website features a growing list of easy to follow tips for different categories of people from children and adults to business owners and government officials. Simple changes in behavior like picking up pet waste, using reusable shopping bags, or taking your car to the car wash can make a big difference to the health of area waters. The website uses pictures, video, and easy to understand lists to help explain why these activities are so important and simple ways to start doing them. Take a look and let us know what you think.

Current events

July

July 4
What: July 4th Celebration
Where: USS Alabama Battleship Memorial Park
For information: www.ussalabama.com

July 15 -17
What: 83rd Annual Alabama Deep Sea Fishing Rodeo
Where: Dauphin Island, Ala.
For information: www.adsfr.com or call (251) 471-0025

August

August 6
What: 152nd Commemorative of the Battle of Mobile Bay
Where: Fort Gaines and Fort Morgan
For information: www.dauphinisland.org/fort-gaines and www.fort-morgan.org

September

September 2-5
What: Mobile Big Game Fishing Club's Labor Day Invitational
Where: Orange Beach Marina
For information: www.mbgfc.org

September 17
What: 29th Annual Alabama Coastal Cleanup
Where: Various locations around Mobile Bay
For information: www.alcoastalcleanup.com

October

October 5-8
What: 13th Annual John L. Borom Alabama Coastal BirdFest
Where: Mobile and Baldwin Counties
For information: www.alabamacoastalbirdfest.com

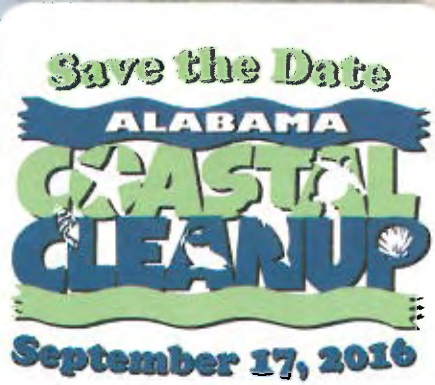
October 13-16
What: 45th Annual National Shrimp Festival
Where: Gulf Shores, Ala.
For information: www.myshrimpfest.com

November

November 4-6
What: Oyster Cookoff at The Hangout
Where: Gulf Shores, Ala.
For information: www.hangoutcookoff.com

November 6-8
What: Alabama Pecan Festival
Where: Mobile and Baldwin Counties
For information: www.alabamapecanfestival.com

November 12
What: 4th Annual Stockton Sawmill Days
Where: Live Oak Landing Stockton, Ala.
For information: www.stocktonsawmilldays.org



Alabama current connection

About the Mobile Bay National Estuary Program: The Mobile Bay National Estuary Program's mission is to lead the wise stewardship of water quality and living resources of the Mobile Bay and Tensaw Delta. The MBNEP serves as a catalyst for activities of estuary stakeholders, helping to build community-based organizational capacity for sound resource management and leveraging commitment and investment to ensure the estuary's sustainability. For more information, please contact the MBNEP office at 251-431-6409.

About ADCNR, State Lands Division, Coastal Section: In an effort to protect and enhance coastal resources and reduce potential conflicts between environmental and economic interests, the Alabama Coastal Area Management Program (ACAMP) was approved by the National Oceanic and Atmospheric Administration (NOAA) in 1979. The ACAMP is administered through the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section. For more information, please contact the Coastal Section office at 251-621-1216.

Alabama Current Connection is produced biannually by the Mobile Bay National Estuary Program. Support is provided in part by the Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division, Coastal Section, the U. S. EPA; NOAA, and the Dauphin Island Sea Lab/Marine Environmental Science Consortium.

Alabama Current Connection encourages reprinting of its articles in other publications. If you have recommendations for future articles or would like to subscribe, please contact the editor:

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We reserve the right to edit submissions.

Funding for this newsletter provided by Mobile Bay National Estuary Program and the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section, in part, from a grant by the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management. Award #NA15NOS4190159.

Alabama current connection

Dauphin Island Sea Lab
Marine Environmental Science Consortium
101 Bienville Boulevard
Dauphin Island, Alabama 36528

Non-Profit Org.
U.S. Postage
PAID
Permit No. 435
Mobile, AL 36601

Community Collaboration *Leads to Cleanup Success*

Continued from page 12

Dabney and Gohres feel that the greatest achievement of the Daphne zone is the large percentage of volunteers that are children and students. The site has approximately 200 Boy Scouts and Girl Scouts of all ages that participate alongside their parents and siblings to earn scout badges. Additionally, a number of middle and high school service organizations participate annually. Organizers of the Daphne site feel that the cleanup is an opportunity to teach resident children, from an early age, the long-term benefits of taking care of the environment.

We are proud of all of our zones and volunteers and appreciate the years of hard work and dedication they have shown to the Alabama Coastal Cleanup. You can find more information on the cleanup and how to get involved at www.AlabamaCoastalCleanup.com.

The Alabama PALS Governor's Award was presented to the Theodore Industrial Canal zone in Mobile County and the Daphne zone in Baldwin County. Pictured, left to right: Phillip Hinesley, Amy Gohres, Angela Underwood, Mitzi Houk, and Travis Osborne.

Company Names and Information

Aaron Oil

713 Bill Myles St., Saraland

479-1616

Alabama Scrap Metals

701 N Joachim St, Mobile, AL

694-0204

Deans Scrap Metal

7766 Highway 45, Eight Mile, AL

675-0224

L & D Scrap Metal

2637 Bear Fork Rd, Mobile, AL

452-0707

Mobile Paperboard Corporation

701 Mobile St, Mobile,

478-3333

MAYOR TROY EPHRIAM

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PRICHARD, AL 36610

STORM WATER MANAGEMENT EDUCATION SERIES FY 2015—2016

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Products and Their Recyclers

Clothing, Shoes, Books, Small Electrical Items, Toys, Automobiles and Boats (only if running)

Goodwill Industries

Waterfront Rescue Mission

Aluminum

Alabama Scrap Metal

B & B Recycling

L & D Scrap Metal

Wise Recycling

Brass/Copper

Alabama Scrap Metal

Alter Metal Recycling

Deans Scrap Metal

Junk Cars/Appliances

David's Auto Shredding

Southern Recycling

Pull—A—Part

Smith Scrap Metal

Used Oil, Oil Filters, & Antifreeze

Aaron Oil Company
Metro Recycling

Steel Cans

Earth Resources
Metro Mobile Recycling
Twin Oaks Recycling

Toners/Cartridges printers & Copiers

United Cerebral Palsy of Mobile

Plastic #1 & # 2

B & B Recycling
Earth Resources
Metro Mobile Recycling

Medical Equipment (Wheelchairs, walkers, etc

United Cerebral Palsy
of Mobile

Benefits of Recycling

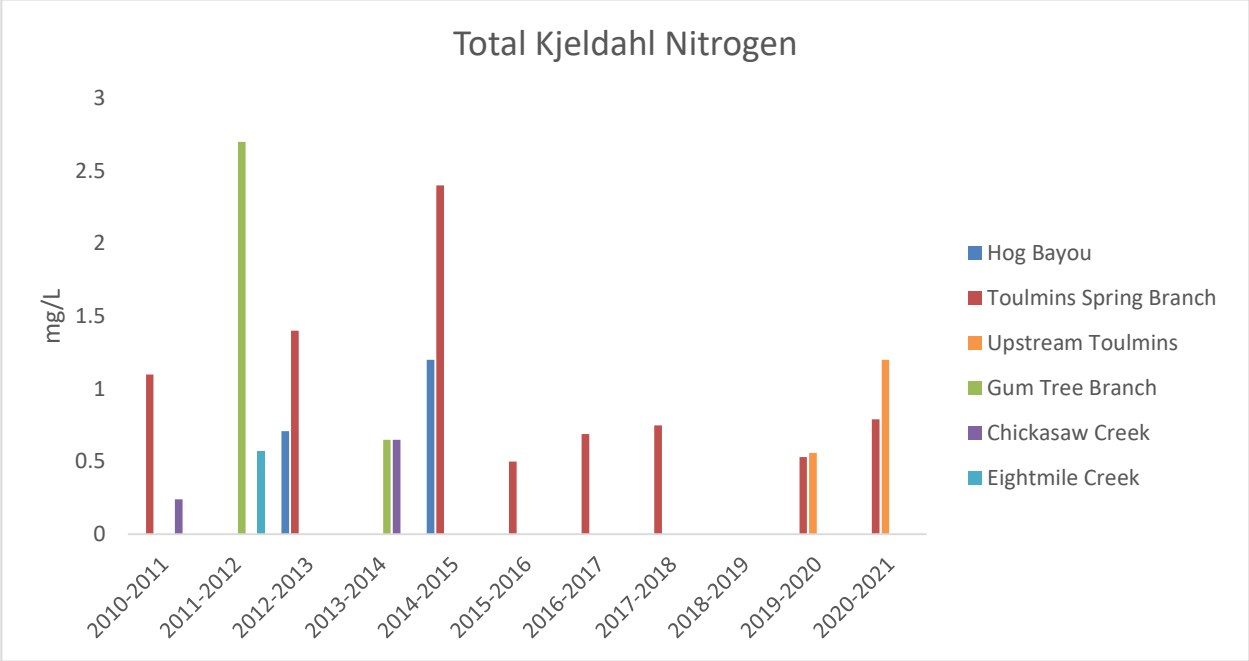
- *Conserve Natural Resources*
- *Conserve Energy*
- *Reduce Air and Water Pollution*
- *Reduce Overall Environment damage*
- *Decrease Garage Amounts*
- *Decrease Space Needed for Landfills*

WE ASK THAT YOU PLEASE TAKE ADVANTAGE OF THESE FACILITES

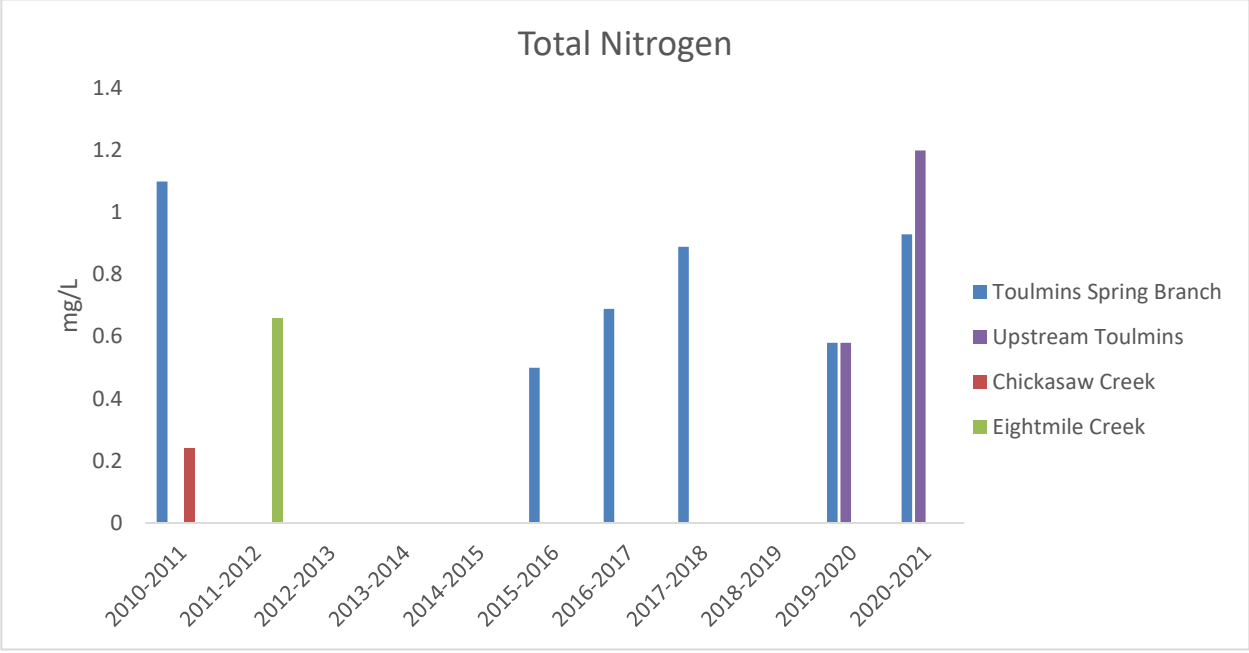
WE SUGGEST THAT YOU CALL BEFORE YOU DROP OFF ANY ITEMS

APPENDIX E

ANALYTICAL RESULTS

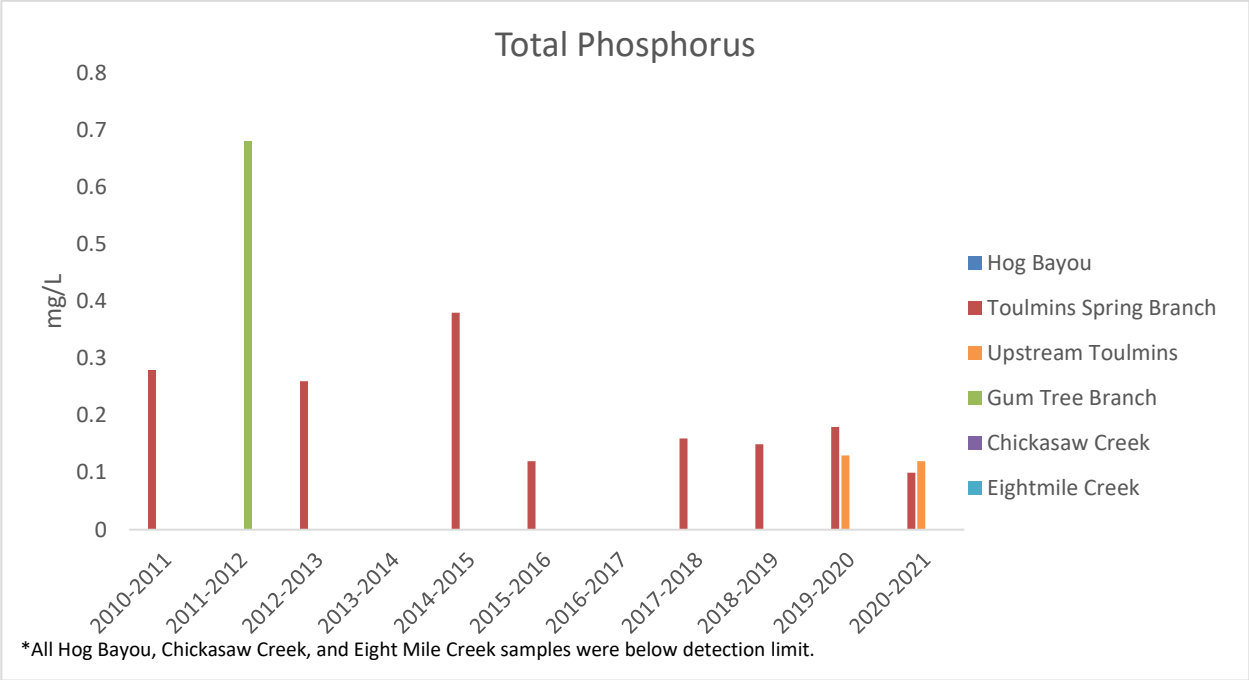


Total Kjeldahl Nitrogen (TKN) was reported for Toulmins Spring Branch, as well as for the Upstream Toulmins Spring Branch location. Although higher than the previous year, the results are historically low. As of 2015 - 2016, Toulmins Spring Branch is the only water body that requires Total Kjeldahl Nitrogen to be monitored (impaired for nutrients).

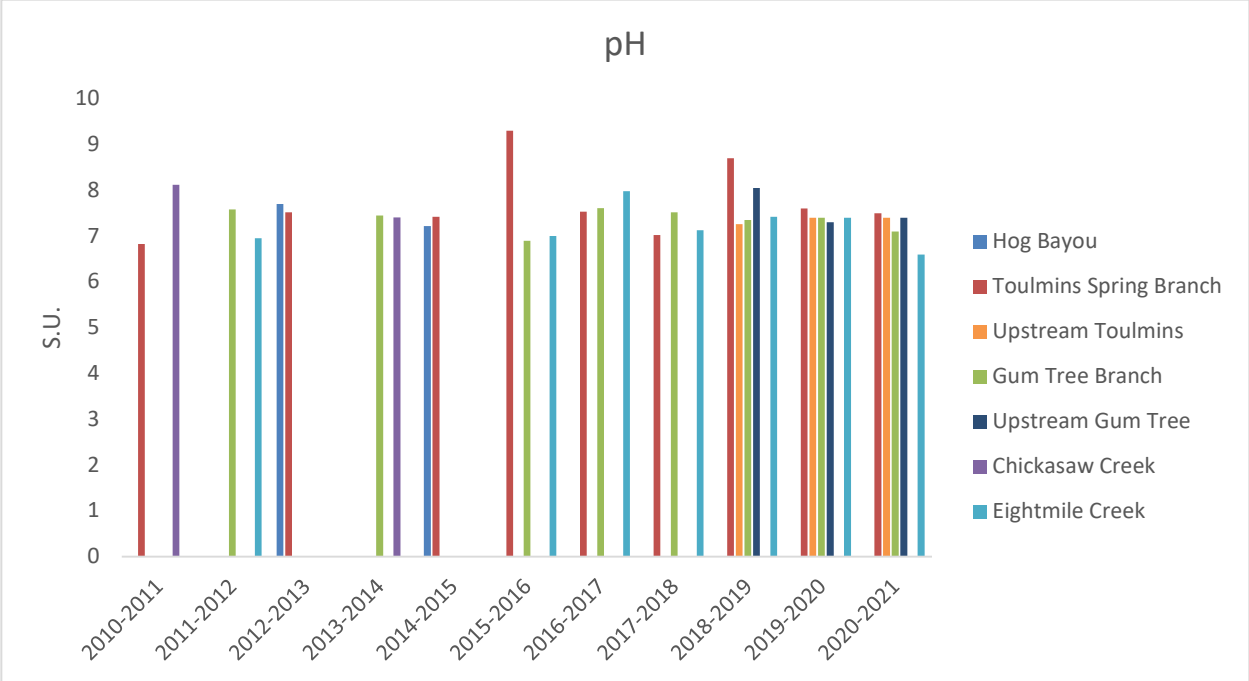


Total Nitrogen was reported to be higher than the previous year, at both sampling locations. The results are on the higher end, historically, but still are only around 1 mg/L, which are not in high enough concentrations to be of significant concern. As of 2015 - 2016, Toulmins Spring Branch is the only water body that requires

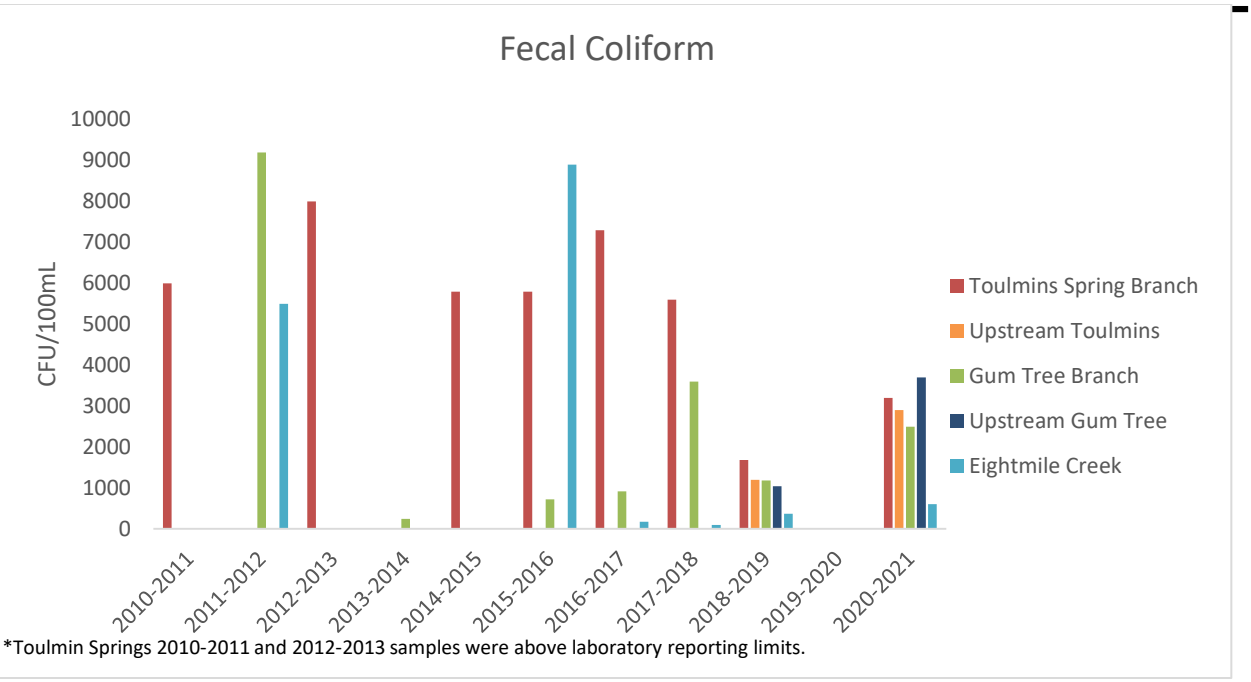
Total Nitrogen to be monitored (impaired for nutrients).



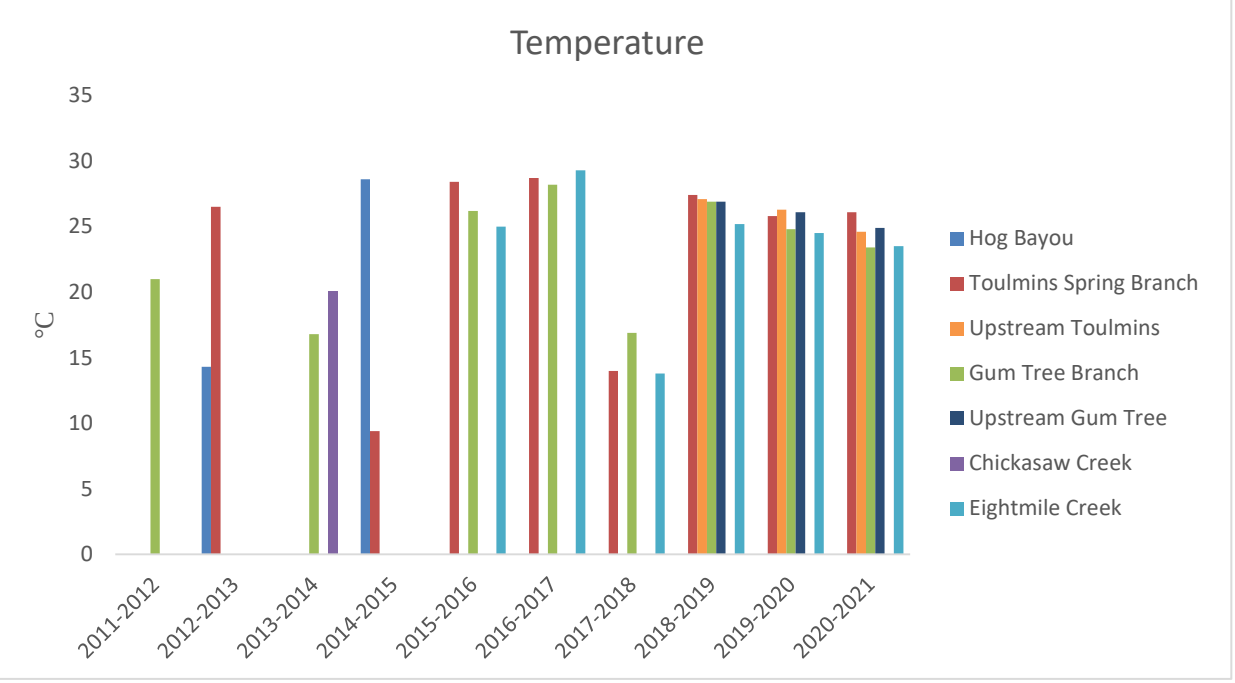
Comparisons of data indicate a slight decrease from the previous year in Total Phosphorus levels for Toulmins Spring Branch in the 2021 fiscal year, and a low value compared to the overall history of the site. As of 2015 - 2016, Toulmins Spring Branch is the only water body that requires Total Phosphorus to be monitored (impaired for nutrients).



Comparisons of data indicate a much more normalized set of pH levels than most of the sampled years (with the highest being 7.6 s.u. and the lowest being 7.3 s.u.), falling well within the expected range of 5.5 to 8.0 s.u.



Due to the samples having Fecal Coliform levels "too numerous to count", comparison of data is difficult, but it can be assumed that the levels are higher than previously reported highs, such as 2015-2016 Eightmile Creek and 2011-2012 Gum Tree. This huge increase in Fecal Coliform is especially upsetting considering the previous year being historically low.



Comparisons of data indicate expected seasonal fluctuations occurring throughout all sampled waters. All samples collected were below the 32°C maximum established for Fish and Wildlife waters and are believed to indicative of a natural system.

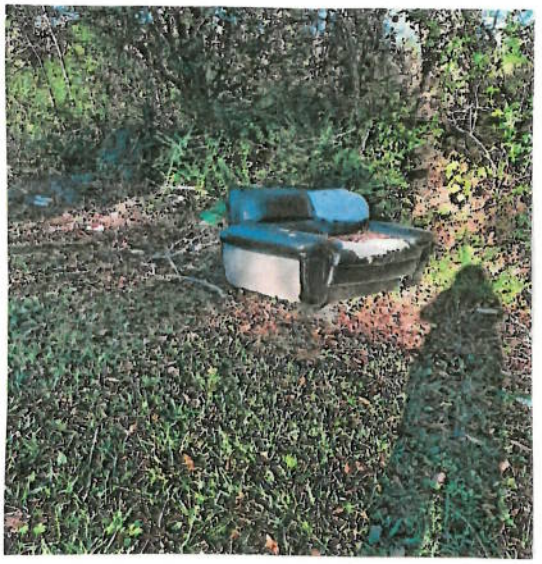
APPENDIX F

CLEANUP EVENT

PHOTOGRAPHS

DISTRICT 2 LITTER MISSIONS (CLEAN-UPS)

Litter Mission # 1 Wasson & Turner



Litter Mission #2 Whistler Street

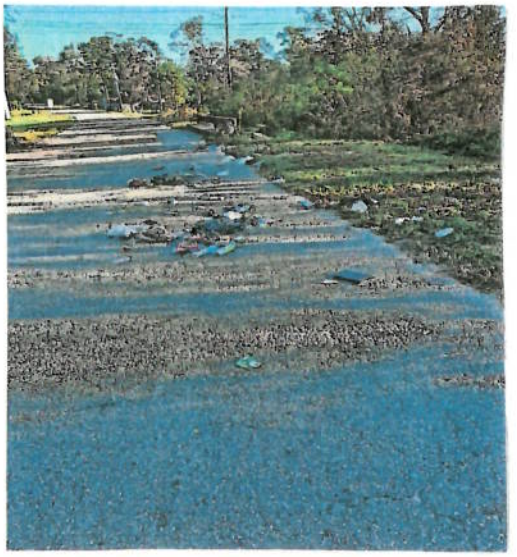
Litter Mission # 3 Warrens St.

Litter Mission # 4 Wasson Bridge

DISTRICT 2 LITTER MISSION #4

WASSON AVE VANDALIZED

AFTER CLEAN-UP



Re-Littering by Vandals

Volunteers Re-Clean Wasson Ave.

DISTRICT 2 LITTER MISSIONS (CLEAN-UPS)

LITTER MISSION #5 Stadium

At Whistler St.

LITTER MISSON #6

Warren St. – Gould to

Whatley Ave. (Recleaned)

LITTER MISSON #7

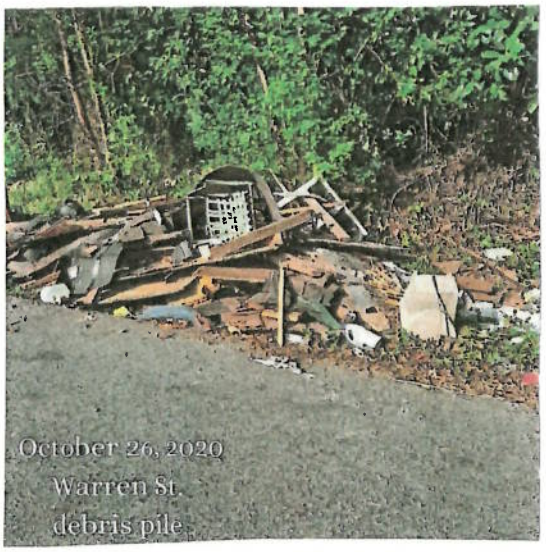
Fall Ave.

LITTER MISSON #8

Shelton Beach Rd.

DISTRICT 2 LITTER MISSIONS (CLEAN-UPS)

MISSON #9



Warren St.

Before Clean-Up

Warren St. Clean-Action

Warren St.
Post Clean-Up

District
Block Captains

DISTRICT 2 LITTER MISSIONS (CLEAN-UPS)

Mission #10 Thornton St.

Mission #11 Ala. Village

Mission #12

Kali-Oka Rd.

Mission #12

Post Clean-Up

Kali-Oka Rd.

COMBINED CLEAN-UP

DISTRICT 2 & 5

Spring Clean-Up District 2 & 5 Report

March 27, 2021

Prichard Stadium

# of Volunteers: 27

# of Streets Cleaned: 19

Total # of Bags of Collected Litter: 200+

Lunch Caterer: McMillians BBQ

Sponsors & Supporters:

- **Councilwoman Stephani Norwood – District 2**
- **Councilwoman Ossia Edwards**
- **John Foster**
- **Jesse Norwood**
- **Mayor Gardner**
- **TJ Pettway**
- **Jasmine Pruitt**
- **Prichard Parks & Recreation**
- **McMillians BBQ**
- **Pastor Lewis**
- **Pastor York**

Spring Clean-Up

District 2 & 5

Saturday, March 27, 2021 from 9:00AM - 4:00PM
Where: Meet at rear of Prichard Stadium
(at entrance to the Walking/Bike Trail)

We Need Your Help! To Volunteer call:

Councilwomen Johnson-Norwood or Ossia Edwards at
(251) 452-7810
(251)753-5651 | (251) 442-5494
(251) 421-7294 or
Jasmine Pruitt at **(251) 391-5268**
or just show up

Clean-up Supplies Provided & Lunch Served

Summer Clean-Up

Whistler United Methodist Church

Mercy Ministries **House of Judah**

Saturday, June 26, 2021 9am-12pm

Wasson Ave. & Selected Streets

We Need Your Help!

To volunteer be at the church at 9 am

For more information call

Judy Lacey (251) 721-4922

Councilwoman Stephani Johnson-Norwood

(251) 753-5651

Jasmine Pruitt (251) 391-5268

Lunch Will Be Provided

BIOGRAPHY

Stephani Johnson-Norwood

"As a middle child, I am a born peacekeeper, negotiator, solution finder, people lover, and often the hardest worker in the room"

Stephani was born in Chicago, Illinois and lived there with her parents and six siblings until at age six, her father moved the family to Egg Harbor Township, N.J. Those early years were hard as her father worked housekeeping at a local hospital, earning $1.00/hr. (minimum wage). They lived in an old rundown house with a hand pump for water, a potbelly stove for cooking and heating, and an outdoor toilet. However, her father instilled the value of education in his children and lived by example. When the door of opportunity opened through the civil unrest of the sixties, her father and mother earned their GED's and her father earned his certification as a Boiler Room Engineer and became an ordained minister. He later was promoted to Boiler Room Chief at the same hospital where he formerly worked as a housekeeper. With education and a good job, Stephani's father was able to purchase a home for the family in Pleasantville, N.J., which was a newly integrated town.

As a middle child, Stephani became skilled at negotiating the peace between her older & younger siblings to keep them all out of trouble with their parents, a skill that has been valuable throughout her life. She attended Public School in Pleasantville and Community College in Mays Landing and realized her dream of becoming a Registered Nurse, (RN). Her dream also helped fulfill an unrealized dream of her mother's, which was to become a Licensed Practical Nurse, (LPN).

Stephani is a very caring person with a love for assisting people not only in healthcare, but in the overall improvement of their quality of life. She moved south to Birmingham, Al to pursue further education at UAB and employment opportunities. While in Birmingham she owned, and operated a successful Home Health Agency which due to the high quality of care, she was awarded a prime sub-contractor status with the Public Health Department.

Like most folks, Stephani fell in love and moved to Prichard, Al with her husband, where she has lived for thirty-three years. She continued to operate the business from Prichard, but due to the rigors of travel, sold the business and evaluated the positions offered by local healthcare organizations. She chose a new path as a director of Nursing at a Nursing Home, earned her Nursing Home Administrator License, became a Director of a Home Hospice, Coordinator of an HCAP Program for MCPSS, and worked in other leadership positions. In the last 20 years of her career, Stephani returned to the fulfillment of bedside nursing, and is now retiring.

Stephani is a devout Christian lady who grew up in the church her father founded and pastored. Today, her immediate family consists of her husband Jesse, and adult children, Jessica, Brandon and Justin. Her hobbies are playing Scrabble, Pickle Ball, reading and gardening. Stephani's work in the community includes Fighting Breast Cancer, Beautification and participating in many service projects as a Blount High Alumni member, Lifelong member of Jack and Jill Moms and other civic programs.

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