STORMWATER
MANAGEMENT PROGRAM
ANNUAL REPORT

"Protecting, preserving, and restoring our local water resources."

PERMIT YEAR
April 2017 – March 2018

SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

PERMIT NUMBER ALR040003

City of Auburn

Home of Auburn University

CITY OF AUBURN

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT NUMBER ALR040003
MUNICIPAL STORMWATER PROGRAM ANNUAL REPORT

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 fathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for fathering 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 fine and imprisonment for knowing violations.

5-23-18
Date

Bill Ham, Jr.
Mayor, City of Auburn
144 Tichenor Avenue
Auburn, Alabama 36830
(334) 501-7260

5/23/2018
Date

For

James C. Buston, III
City Manager, City of Auburn
144 Tichenor Avenue
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(334) 501-7260

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FOREWORD:

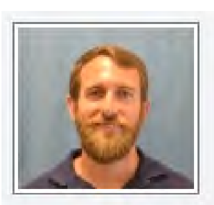
The mission of the Watershed Division of the Water Resource Management Department of the City of Auburn is, first and foremost, to *protect, preserve, and restore the chemical, biological, and physical integrity of our local water resources*. And, although the City's comprehensive Stormwater Management Program is managed by the Watershed Division, the long term success of the program will ultimately be determined by its ability to strengthen the resolve and desire of the entire community toward this same objective. This report is drafted with this understanding and therefore reflects the summary of the efforts of the community of Auburn as much as it does those of the staff of the City of Auburn. Although there are many success stories and much progress made in 2017, many challenges and concerns remain, not the least of which is the continued status of impairment of three of the City's principal water resources; Saugahatchee Creek (Nutrients), Parkerson's Mill Creek (Pathogens), and Moore's Mill Creek (Siltation). We will continue to improve upon and develop our Stormwater Management Plan in the coming years, focusing on building and expanding upon the program's strengths and identifying and implementing strategies for addressing threats to our local water resources.

WATERSHED DIVISION STAFF:

Daniel Ballard, PLA | Watershed Division Manager

Education: Bachelor of Science in Zoology & Master of Landscape Architecture

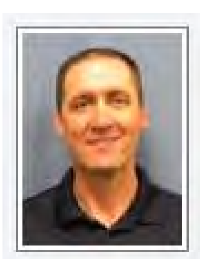
Certifications/Licensure: Registered Professional Landscape Architect, Alabama #772



Dustin "Dusty" Kimbrow | Watershed Program Coordinator

Education: Bachelor of Arts in Geography (magna cum laude) & Master of Science in Geography

Certifications/Licensure: Qualified Credentialed Inspector, Alabama



Ronald "Ron" McCurry | Stormwater Coordinator

Education: Bachelor of Science in Building Science & Master of Community Planning

Certifications/Licensure: Qualified Credentialed Inspector, Alabama

STORMWATER MANAGEMENT PROGRAM ANNUAL REPORT

City of Auburn

PERMIT YEAR
April 2017 - March 2018

PROGRAM EVALUATION & EXECUTIVE SUMMARY

The City of Auburn is now entering its fifteenth year as a regulated owner/operator of a small municipal separate storm sewer system, with the current reporting year representing the second under the current Statewide General Permit ALR040003. Over thirteen of these past fifteen years the City's Stormwater Management Program (SWMP) has generally been managed and operated with the same number of staff and with the same operational budget. Over this same time period the City's physical infrastructure and population has continued to experience rapid growth, with the population increasing by approximately 25% every ten years. This rapid urbanization, which began many years before the promulgation of Phase II of the NPDES program, has presented challenges to the City's SWMP, both in the form of legacy impacts to our water resources and in the form of the ever-evolving dynamics of the impacts of urban and suburban growth on local hydrologic conditions. The most outward physical evidence of these challenges is the continued status of impairment of three of the City's principal water resources; Saugahatchee Creek, Moore's Mill Creek, and Parkerson's Mill Creek. Furthermore, the diversity of impairment (nutrients, siltation, & pathogens respectively) between these waters highlights the complexity and uniqueness of the impacts of urbanization on our watersheds and underscores the need for prescriptive and strategic plans for protection, preservation, and restoration. The City's SWMP provides the framework for accomplishing this through both targeted regulations and policies (e.g. requirement of Water Quality Plans for developments discharging to impaired waters) and through the implementation of other targeted structural and non-structural control measures as required by the City's MS4 Permit and/or as outlined in the City's Stormwater Management Plan or any of the three approved Watershed Management Plans.

This report outlines, in detail, how the City is operating its SWMP and how it records and documents measurable success. Additionally, this report demonstrates how innovation, partnerships, collaboration, and dedication to a common mission have permitted the City to expand the capacity of its SWMP services to a growing population at little to no increased costs for over a decade. These partnerships, many of which started in the formative years of the program, are the foundation of the City's SWMP and have grown to include Auburn University, Save our Saugahatchee (SOS), Alabama Water Watch (AWW), the City of Opelika, the City of Smiths Station, Lee County Highway Department, Auburn City Schools, and the Alabama Water Environment Association. Some of the successes and accomplishments of the program in 2017, many of which would not be possible without these partners, include:

- Entered into an agreement with AMEC Foster Wheeler (now Wood Group), Volkert, and MacKnally Ross Land Design to develop the City's Green Infrastructure Master Plan (first of such plans in the State).
    - Completed the initial Policy Review and Recommendations Phase of this project.
- Entered into an agreement with the Green Infrastructure Center, Inc. to perform an assessment of the City's Urban Tree Canopy and to make recommendations for how to better manage and expand urban forest to minimize stormwater impacts.
- Designed and constructed a new municipal parking lot with permeable interlocking concrete pavers and large bioretention garden.
- Integrated multiple Green Infrastructure practices into the design of the City's new Public Safety Building.
- Gave over 14 public presentations on stormwater and watershed management related topics to a variety of different groups and organizations, including two televised interviews about the City's various green infrastructure projects.
- Visual screened 449 storm sewer outfalls within the City's MS4, far exceeding the mandated 15% identified in the City's MS4 Permit.
- Completed over 75 work orders for repairs and/or maintenance of existing storm sewer infrastructure.
- Responded to 46 water resource concerns received by citizens.
- Purchased and installed a weather station at the Lake Ogletree Source Water Monitoring Station, monitoring rainfall accumulation and intensity, wind speed, temperature, relative humidity, and wind direction.
- Acquired an additional ~15 acres of land to be used for the Saugahatchee Greenway and Blueway Project, bringing the total land acquisition for this project to ~95 acres.
- Assisted the Auburn Fire Division with the relocation of three 280 gallon cisterns from Fire Station 1 to Fire Station 5, where they are scheduled to be installed to provide drip irrigation for the stations garden.

- Authored and distributed over 20 articles directly or indirectly related to stormwater and watershed management in the City's OpenLine Newsletter, which is distributed monthly to over 21,000 customers.

- Continued to meet with Auburn University's Comprehensive Stormwater Management Policy Initiative to discuss opportunities for developing programmatic and regulatory consistency between the two programs.

- Made improvements to the Watershed Division webpage, including providing information about how citizens can get involved with various stormwater programs (ex. Storm Drain Marking, Stream Clean-ups, etc.).

- Purchased one (1) real-time stream gage with cellular telemetry and developed plans to install on Parkerson Mill Creek (two gages already located on Chewacla Creek and one on Saugahatchee Creek).

- Purchased and installed one (1) YSI RDO Dissolved Oxygen Sensor on Chewacla Creek, below Lake Ogletree (connected to existing stream gaging station).

- Began discussions with Alabama Water Watch to explore a partnership to sponsor the training of citizens interested in performing water quality monitoring in the City of Auburn.

- Continued regular meetings of the ALOAS organization. *Two meetings were substituted with meetings of the broader Alabama Stormwater Association.

- Cleaned over 16,922 miles of City streets with regenerative air street sweepers, accounting for nearly 893 tons of sediment, debris, and trash removed from City streets.

- Recycled over 21,110 pounds of household hazardous waste, over 2,647,520 pounds of newspaper, cardboard, glass, and plastic trash, and over 1,481 gallons of used cooking oil/grease.

- Performed >880 Erosion and Sediment Control inspections on developments >1 acre, resulting in 440 enforcement letters and forty six (46) 72-Hour Notices of Violation (NOV's).

- Developed, adopted, and implemented lot-level erosion and sediment control standards for single-family residential lots less <1 acre.

- Performed 352 Initial Erosion and Sediment Control inspections on construction sites <1 acre. 106 of these inspections resulted in required corrective action prior to issuance of a building permit.

- Supported and participated in numerous community education and outreach opportunities, including Earth Week, the Lee County Water Festival, storm drain marking, etc.

- Performed Stream Cleanup and Storm Drain Marking activities as a part of the Auburn University Big Event, providing more than 20 services hours toward watershed/stormwater stewardship.

- Contributed to Alabama Technology Transfer Center's course on Green Infrastructure Planning, Design, and Implementation.

- Continued to implement numerous recommendations outlined in the Natural Systems section of the City's Comp Plan 2030.

- Continued routine monitoring of 27 stations throughout the City for turbidity, dissolved oxygen, temperature, pH, and specific conductance.

- Implemented the third year of a five year in-sourcing Source Water Monitoring Plan.

- Continued to jointly fund and operate two USGS stream gaging operations on Saugahatchee and Chewacla Creeks.

- Completed the fifteenth year of conservation measures outlined in the Chewacla Creek Safe Harbor Agreement.

- Sustained a substantial reduction in sanitary sewer overflows since implementing a strategic maintenance and prevention program.

Progress Update of Specific Goals Established for 2017 and New Goals for 2018

The Watershed Division regularly evaluates the effectiveness and efficiency of its operations, both from a permit compliance perspective as well as a mission/objectives and budgetary perspective. This allows staff to identify elements of the SWMP that are working, those that are not, and those that need or warrant modification. Staff work to continue those services that they determine effective, eliminate those that are not, and establish goals for improving those that could be. Below are an update of progress made toward goals established for 2017 and a list of new goals established for 2018.

<u>2017 Goals - Progress Updates</u>

- Goal - Continue to increase public education and awareness through additional storm drain marking activities, involvement with our local schools and other education and outreach initiatives.

    - Staff completed both storm drain marking and stream cleanup activities in 2017.

- Continue the City's new Stream Gaging Program through the installation of one (1) real-time stream gage per year until all major waterways are gaged.
    - Staff successfully installed an additional stream gage on Saugahatchee Creek and are continually updating and maintaining these instruments and refining their measurements.
- Complete the revisions of the City's Illicit Discharge Ordinance, including the addition of specific escalating enforcement actions.
    - Staff have finalized revisions to the City's Illicit Discharge Ordinance and intend to bring these changes to City Council for approval in May 2018.
- Continue to improve and promote the City's Water Quality Monitoring Public Viewer Application.
    - Staff have made numerous presentations highlighting the City's Water Quality Public Viewer Application and made improvements to its website for ease of access.
- Complete the inventory and assessment of the City's properties and facilities and develop a program for annual inspection and improvements for stormwater management.
    - Staff successfully completed a full inventory of City owned properties and facilities and an initial site assessment of stormwater conditions, performed by the persons responsible for their maintenance and upkeep.
- Continue the implementation and enhancement of the City's comprehensive water quality monitoring database that houses data from the City's various water quality monitoring programs.
    - Staff have made many improvements in its data collection, data management, and data integration, supporting data-driven decisions for activities ranging from illicit discharge investigations to water treatment processes.
- Complete the development, and begin implementation, of the City's Green Infrastructure Master Plan.
    - The City entered into a contract with AMEC Foster Wheeler (now Wood Group) and is currently underway with this project.

- Update the City's Site Development Review Tool, which is used for evaluating a proposed development's pollutant removal performance for compliance with applicable TMDL's.
    - Staff are intentionally awaiting the completion of the Green Infrastructure Master Plan prior to completing this task.
- Install at least one Green Infrastructure practice within the City.
    - The City recently completed the installation of permeable interlocking concrete pavers and large bioretention cell at the new East Glenn Municipal Parking Lot.
- Complete. the design and start implementation of the H.C Morgan Stream Restoration Project;
    - Veolia, Inc. contracted with Normandeau and Associates to perform a biodiversity study within the H.C. Morgan Water Pollution Control Facility property. Staff are currently working to implement some of the recommended improvements, along with continued exploration of alternatives for the restoration of two small tributaries located onsite.
- Complete Phase IA of the Saugahatchee Greenway + Blueway Project, which includes the first 1.5 miles of greenway trail, two kayak put-in/take-out facilities, a small pocket park, and associated parking facilities.
    - Staff have completed 90% of the construction documents associated with this project and anticipate letting out to bid in late FY18 or early FY19.
- Plan and host a sediment basin design and construction workshop to educate local engineers and contractors on proper methods for design and construction of sediment basins using skimmer devices.
    - Staff postponed this event, but still hosted a targeted Erosion and Sediment Control Workshop for local builders and developers, discussing specific local regulations and standards related to lot-level erosion and sediment control.

<u>New Goals for 2018</u>

- Begin implementation of the recommended policy and ordinance changes identified in the Green Infrastructure Master Plan and begin scheduling demonstration projects as strategic capital improvements.

- Complete the Urban Tree Canopy Assessment project with the Green Infrastructure Center and begin to prioritize and implement changes to improve the City's management, protection, and expansion of urban forest.

- Install an additional stream gaging station on either Town Creek or Moore's Mill Creek.

- Complete the design and construction of various green infrastructure practices as opportunities arise.

- Implement a city-wide online education program for Illicit Discharge Detection and Elimination.

- Complete the first annual onsite evaluation of stormwater management practices and controls at all Municipal Facilities, and identify and prioritize targeted improvements as they are identified.

I. INTRODUCTION

In response to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Regulations, the City of Auburn (City) applied for and received an NPDES permit for stormwater discharges from the Alabama Department of Environmental Management (ADEM) on May 14, 2003. The current permit was issued September 6, 2016 and became effective October 1, 2016. A copy of this permit (ALR040003) is included in this report.

This report is being submitted to the ADEM pursuant to Part VI; paragraph 1 of NPDES Permit ALR040003.

This annual report is the City's fourteenth report, and second under the reissued permit, and covers the reporting period from April 2017 through March 2018. The stormwater program outlined in this report is patterned after the program submitted to and approved by ADEM in March 2003 in the City of Auburn's Notice of Intent (NOI) and in accordance with the City's Stormwater Management Plan (current update submitted to ADEM in December 2016). The City is currently making additional revisions to its SWMP Plan, which will be submitted to the ADEM during the 2018/2019 reporting year.

II. SITE DESCRIPTION

The City of Auburn is located in East Central Alabama. A map of the City is provided in Appendix B. The Auburn, Alabama urbanized area encompasses 59.30 square miles per the 2015 U.S. Census. Approximately 26.80 square miles of the Auburn City Limits are located within this urbanized area. The current population of Auburn is approximately 63,118 per the 2016 U.S. Census estimate. There are approximately 286 miles of creeks and streams flowing through Auburn, approximately 667 lakes, ponds, and other open waters, and +/- 370 acres of wetland. From the most recent City storm drainage system inventory, the storm drainage system contains approximately 136 linear miles of storm pipe (120 miles of which are owned by the City). The City is updating its stormwater infrastructure inventory on a routine basis using the City's survey crew, as well as private surveyors.

Geographic Context

The City of Auburn is situated within a unique transitional zone between the Piedmont and Coastal Plain physiographic regions of the Southeastern United States (see link below). More specifically, the City is located within the Level IV sub-ecoregion known as the Southern Outer Piedmont. This ecoregion is generally characterized as having lower elevations, less relief, and less precipitation than that exhibited in other regions of the Piedmont. Overstory cover type within this region consists mostly of mixed deciduous (oak, gum, hickory) and mixed coniferous (pines, firs, spruces, etc.) with the presence of numerous monotypic pine plantations scattered throughout. Specific to these transitional areas in the southeast is the presence of the "fall line", the geographic divide between the Piedmont and Coastal Plain. More information can be found at the link provided below. The City's presence within this transitional area between the piedmont and coastal plain regions provides for a unique hydrogeomorphic diversity of water features within a relatively small geographic area. This diversity is exemplified in the abundance and variety of stream channel features, varying substrate composition, and variety of aquatic habitats. For example, streams in central Auburn generally exhibit piedmont characteristics, such as strong riffle/pool complex formation and cobble/gravel substrate composition, yet they cascade to a coastal plain dynamic of long runs and sandy substrates as they flow to the western and southern extents of the City. Similarly, the topography of each of the contributing watersheds follows the same pattern of increasing coastal plain-like features to the west and south of the City.

Link to a map of Alabama's physiographic regions:

http://alabamamaps.ua.edu/contemporarymaps/alabama/physical/al_physio.pdf

III. KNOWN OR SUSPECTED WATER QUALITY PROBLEMS

The City's municipal separate storm sewer system (MS4) discharges into streams located in three primary (10-digit HUC) watersheds; Saugahatchee Creek Watershed, Uphapee Creek Watershed, and Chewacla Creek Watershed. Smaller watersheds of the Saugahatchee Creek Watershed to which portions of the City's MS4 discharge include the Loblockee Creek Watershed and the Little Loblockee Creek Watershed. Smaller watersheds of the Chewacla Creek Watershed to which portions of the City's MS4 discharge include Parkerson's Mill Creek, Moore's Mill Creek, and Town Creek. The only smaller watershed of the Uphapee Creek Watershed to which portions of the City's MS4 discharge is the Choctafaula Creek Watershed.

Moore's Mill Creek was placed on the draft 303(d) list in 1998 and has been listed on the final 303(d) lists from 2002 to present. Known water quality concerns within the jurisdictional area were identified as stream siltation resulting from sedimentation deriving from local development within the Moore's Mill Creek watershed and in-stream erosion. The ADEM Draft 2018 303(d) list identifies Moore's Mill Creek as a Low Priority for TMDL development. The Moore's Mill Creek Watershed Management Plan was drafted and finalized in May of 2008.

The Saugahatchee Embayment, where Saugahatchee Creek discharges into Yates Lake, was placed on the final 303(d) lists from 1996 to 2008. The Saugahatchee Watershed Management Plan was drafted and finalized in February of 2005. The Embayment was listed on the 303(d) list primarily for nutrient enrichment. ADEM and the USEPA issued the final Total Maximum Daily Load (TMDL) for nutrients and organic enrichment/dissolved oxygen for Pepperell Branch and the Saugahatchee Embayment in April 2008. Implementation of the stormwater TMDL is addressed in the City's Phase II Permit that was issued on September 6, 2016 (effective on October 1, 2016) and the City's updated Stormwater Management Plan that was submitted to ADEM in December 2016. Saugahatchee was again listed on the Draft 2018 303(d) list in 2018 for pathogens. The City is awaiting the finalization of the 2018 303(d) list prior to determination of monitoring and management strategies.

Parkerson's Mill Creek, from its source to Chewacla Creek, was placed on the final 303(d) list in 2008 and 2010. Known water quality concerns within the jurisdictional area were identified as pathogens resulting from urban runoff, storm sewers, and illicit discharges. A TMDL for Parkerson's's Mill Creek was issued by ADEM in September 2011. Implementation of this stormwater TMDL is addressed in the City's Phase II Permit issued on September 6, 2016 (effective on October 1, 2016) and the City's updated Stormwater Management Plan that was submitted to ADEM in December 2016. The Parkerson's Mill Creek Watershed Management Plan was drafted and finalized in December of 2011.

IV. RESPONSIBLE PARTY

The City's Stormwater Management Program (SWMP) is implemented through a diversity of programs operating under various departments within the City's organization. Components of the SWMP and each department's respective responsibilities are as follows:

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

- Parks and Recreation Department – Hosts annual Earth Day activities and conducts the annual Arbor Day Tree Giveaway program; Manages the City's Greenway/Greenspace Program;

- Planning Services Department – Assists with reviewing and approving low impact development projects; Manages CompPlan 2030 and future land use planning efforts;

- Inspection Services Department – Monitors residential and commercial construction, including construction stormwater inspection and enforcement for those entities;

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

- Engineering Services Department – provides engineering and project management services for construction and improvements to roads, sidewalks, drainage structures and bridges within the City and coordinates the plans review process for engineering and utility construction proposed by the local development community;

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

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

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

Daniel Ballard, PLA | Watershed Division Manager
Water Resource Management Department
City of Auburn
1501 West Samford Avenue
Auburn, AL 36832
(334) 501-7367
dballard@auburnalabama.org

V. STORMWATER MANAGEMENT PROGRAM COMPONENTS

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

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

In March 2003, the City submitted to ADEM a Notice of Intent (NOI) to implement a SWMP under the Phase II stormwater regulations. The City's most recent update to its SWMP was in December 2016 to comply with the current Phase II Permit (submitted it to ADEM in December 2016). The goals and details of the City's program are outlined in the updated SWMP. At the end of permit year fourteen (second year under the reissued permit) all program components outlined in the SWMP have been implemented.

VI. PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

A. Articles in the City Newsletter "Open Line"

Open Line is a monthly newsletter mailed to Auburn citizens through their utility bill. Articles and messages contained in the newsletter reach a large and diverse group of citizens. The goal for articles in Open Line is to produce two (2) articles per year. During the current reporting year, a total of twenty (20) articles were published in which stormwater related issues were highlighted or affected:

- *2017 Household Hazardous Waste Collection Day Event – May 2017*
- *Big Event 2017 Announcement – November 2017*
- *Trash Amnesty Week Announcement – April 2017*
- *Save Our Saugahatchee 20th Anniversary – July 2017*
- *Phase I Drought Watch (Water Conservation Article) – July 2017*
- *2016 Consumer Confidence Report Announced – July 2017*
- *Single Stream Recycling Announced – August 2017*
- *Voluntary Water Restrictions Notice (Water Conservation Article) – August 2017*
- *Plastics Recycling Return Announced – September 2017*
- *Downtown Streetscape and Tree Plan Announcement – September 2017*
- *Additional Plastics and Single Stream Recycling Article – December 2017*
- *Annual Flood Protection and Preparation (*Multiple Articles) – March 2018*

Copies of these articles can be downloaded from the City's website at:

http://www.auburnalabama.org/openline/.

B. Brochure Publications

Pamphlets and brochures can be an effective way to present and explain stormwater issues. Unlike other communication methods, pamphlets and brochures can be distributed in many locations without requiring staffing and the location of distribution can specifically target the audience you are trying to reach. The goal for brochure publications is to produce two (2) brochures per year. During the current reporting year, various brochures produced by Auburn University, the Clean Water Partnership, and other organizations were made available at several locations throughout the City. Brochures provided by the City over the past year include the following brochures published by the **A**uburn, **L**ee County, **O**pelika, **A**uburn University and **S**miths Station (ALOAS) Citizen Advisory Group:

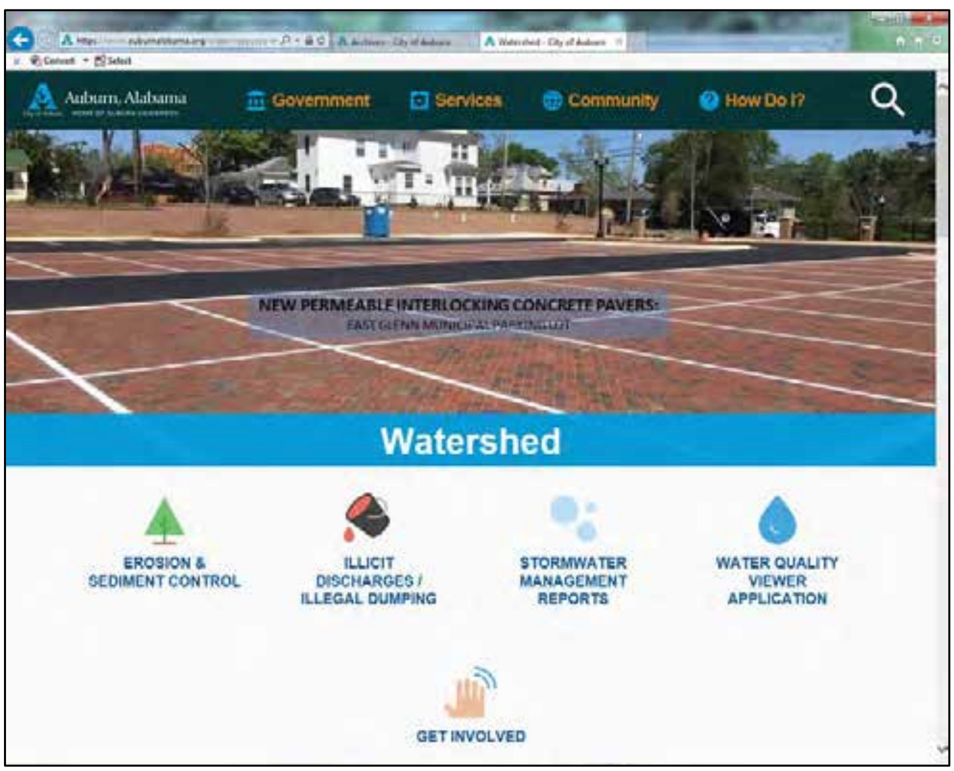
Copies of these brochures can be downloaded from the City's website at:
https://www.auburnalabama.org/water-resource-management/watershed/aloas/

Additional Brochures Made Available:

- Washing Cars (Alabama Clean Water Partnership (ALCWP))
- Changing Oil (ALCWP)
- Pets (ALCWP)
- Fertilizing (ALCWP)
- Saugahatchee Creek Watershed: Past, Present and Future (Saugahatchee Watershed Management Plan Group (SWaMP))
- Fats, Oils and Grease Recycling Program (City of Auburn)
- ALOAS brochures from previous years
- Alabama Scenic River Trail maps and information

C. Website

The City of Auburn launched a newly designed website during 2017, improving access and functionality for a more user-friendly experience. Citizens can go to the City's website to obtain information on items of local interests. The web page is accessible 24 hours per day and can serve citizens that do not have the time or the ability to physically meet with staff during normal working hours.



The City's Stormwater website was moved from the Public Works Department home page to the Water Resource Management Department home page in 2005. The Stormwater website received a major overhaul in 2017, including additional updates to the public water quality viewer application for the City's various Water Quality Monitoring programs and a new "Get Involved" site to inform citizens about various ways they can become involved in stormwater management activities. **In 2017, the Stormwater website was visited 3,124 times.**

For more information on the website please visit:

https://www.auburnalabama.org/water-resource-management/watershed/

D. Public Water Quality Viewer Application

This application, developed and launched in 2015 (updated in 2017), allows the public to view water quality data from forty (40) monitoring locations on streams throughout the City. These stations are monitored routinely by Watershed Division staff using modern water quality monitoring equipment, with the viewer application updated monthly to reflect current data. Water quality parameters analyzed and presented include Turbidity, Dissolved Oxygen, Temperature, Specific Conductance, and pH. More information about these parameters can be found through various webpage links provided in the application. This application helps to provide transparency in our monitoring operations, facilitate educational and research opportunities for students and teachers, and provide an additional tool for citizens to become aware and involved in helping to preserve and protect our local water resources. This application can be found at:

http://webgis.auburnalabama.org/waterqualitypublic/#openModal#openModal#openModal

E. Public Presentations

The City provides staff and/or resources to perform presentations for various groups and public meetings. Typically presentations are offered in PowerPoint format and the topics are chosen by the organization requesting the information.

Sixteen (16) public presentations were made during the current reporting year. Presentations were given to various groups, including a Mongolian delegation of public officials, Auburn University students from various departments, City officials, and public service organizations.

Presentations prepared and provided by City staff over the past reporting year include:

- Stream Restoration Design Workshop – January 2017 (not reported in previous year's annual report)

A. Topic – H.C. Morgan Water Pollution Control Facility Stream Restoration and Outdoor Classroom Project Goals and Vision

1. Presenter – Dan Ballard

- Tallapoosa Basin Clean Water Partnership Meeting – March 2017 (not reported in previous year's report)

A. Topic – H.C. Morgan WPCF Stream Restoration and Outdoor Classroom Project Vision

1. Presenter – Dusty Kimbrow

- Alabama Stormwater Forum (2 Presentations) – May 2017

A. Topic 1 – City of Auburn Watershed Management

1. Presenter – Dan Ballard

B. Topic 2 – Stream Gaging and the Development of a Stage-Discharge Rating Curve

1. Presenter – Dusty Kimbrow (included field component)

- Citizen Workshop on Water Resources – May 2017

A. Topic – Our Local Water Resources (including Q&A on Stormwater Management)

1. Presenter – Dan Ballard

- EPA Stormwater Delegation – June 2017

A. Topic – City of Auburn Watershed Management Program

1. Presenter – Dan Ballard

- Master Gardeners of Lee County, Alabama – June 2017

A. Topic – Our Local Water Resources

1. Presenter – Dan Ballard

- Economic Development Delegation from Hoorn (Netherlands) – October 2017

A. Topic – City of Auburn Water Resources and Watershed Management Program

1. Presenter – Dan Ballard

- League of Women Voters – October 2017

A. Topic – State of the City's Source Waters

1. Presenter – Eric Carson (contributions from Watershed Division)

- Save our Saugahatchee Annual Stakeholder Meeting – October 2017

A. Topic – Updates on Water, Sewer, and Watershed Operations

1. Presenters – Dan Ballard and Matt Dunn

- AWEA + AWWA Technology Workshop – November 2017

A. Topic – City of Auburn Source Water Monitoring Program

1. Presenter – Dan Ballard

- Delegation from Mountain Brook Board of Landscape Design – November 2017

A. Topic – City of Auburn Watershed and Stormwater Management

1. Presenter – Dan Ballard

- Technology Transfer Workshop – December 2017

A. Topic – Green Infrastructure use in the City of Auburn

1. Presenter – Dan Ballard

- City of Auburn Erosion and Sediment Control Workshop – December 2017

A. Topic – City of Auburn Erosion and Sediment Control Inspection and Enforcement Program

1. Presenters – Dan Ballard and Ron McCurry

- Alabama Fisheries Association 34th Annual Meeting – February 2018

A. Topic – Considering Long-term Stream Stability and Infrastructure Protection

1. Presenter – Dusty Kimbrow

- Mobile Bay National Estuary Program – April 25, 2017

  A. Topic – Low Impact Development in Alabama

  1. Interviewees – Mayor Bill Ham and Dan Ballard
  2. https://www.youtube.com/watch?v=AiaVLWqQee0

- Auburn University College of Agriculture – January 2018

  A. Topic – Land and Water Resources in Alabama

  1. Interviewees – Mayor Bill Ham and Dan Ballard
  2. https://agriculture.auburn.edu/theseason/apt-documentary-series-on-agriculture-to-highlight-auburn-research/

F. Workshops/Training Hosted

In an effort to educate contractors, developers, engineers, and staff, the City has initiated a series of workshops. The content of the workshops focuses on local stormwater issues of concern. Workshops/training hosted by the City over the past year include:

- **Erosion and Sediment Control Workshop (December 2017)** – The purpose of this Workshop is to educate and interact with local engineers, developers and contractors who are governed by the City's Erosion and Sediment Control Ordinance, the ADEM stormwater regulations, and the United States Environmental Protection Agency (EPA) regulations. Past speakers have included experts from various government organizations, academia, and the private sector. Approximately 25 developers, contractors, engineers and City personnel attended this year's annual workshop. The focus of the presentation given at this year's workshop was lot level erosion and sediment control.

- **Materials Handling/Spill Prevention Training** – With the assistance of Mr. Tom McCauley, Auburn University's Environmental Risk Manager, the Water Resource Management Department conducted an informal review of its applicable facilities for proper Spill Prevention, Control and Countermeasures (SPCC) in October 2013. The City began addressing some of the recommendations that resulted from that review in 2014, including improving general housekeeping, storage, & labeling procedures at the Bailey-Alexander Water and Sewer Complex, repainting of the above-ground fuel storage tanks at the Public Works Construction Division Facility, and annual training of two Public Works staff in Spill Prevention Control & Countermeasures. The City continued these improvements in 2016 and 2017, including additional construction of vehicle and materials pole barns and improvements in the storage of fuels and other petroleum products. In March of 2018, the Sewer Division began construction of a wash station for the City's Fleet Services facility, removing all washing activity discharge from the City's storm sewer over to the sanitary sewer.

- **Lunch & Learn Workshops** – The Water Resource Management Department routinely hosts lunch and learn opportunities for a variety of stormwater and watershed education events. The Lunch and Learn Program an ongoing education and outreach initiative (started in 2014), providing opportunities for staff from all City departments to learn about advances in research, technologies, and practices related to stormwater management. The Lunch & Learn activities provided in 2017 included:

    - Alabama Stormwater Association Planning Committee – Small group discussion about the potential formation of a statewide stormwater association (May 2017).

    - EPA Region 4 Stormwater Tour – Lunch was provided during a visit by several EPA region 4 representatives and representatives from the ADEM (June 2017).

    - Green Infrastructure Planning for the City's New Public Safety Building – Lunch provided during discussion of opportunities for incorporating green infrastructure into the City's new Public Safety Building (July 2017).

    - Urban Tree Canopy Assessment for Better Stormwater Management – Lunch was provided during discussions of the ongoing assessment of the City's urban tree canopy, for the purpose of improving stormwater management (February 2018).

- **Webcasts & Webinars** – The Water Resource Management Department regularly schedules and participates in online webinars and webcasts training opportunities. During this reporting year, stormwater and watershed-related webinars/webcasts attended by City staff included topics such as stormwater utilities, monitoring instrumentation, and source water protection.

    - Water Environment Federation Webinar – Stormwater Utility Trends (April 2017)

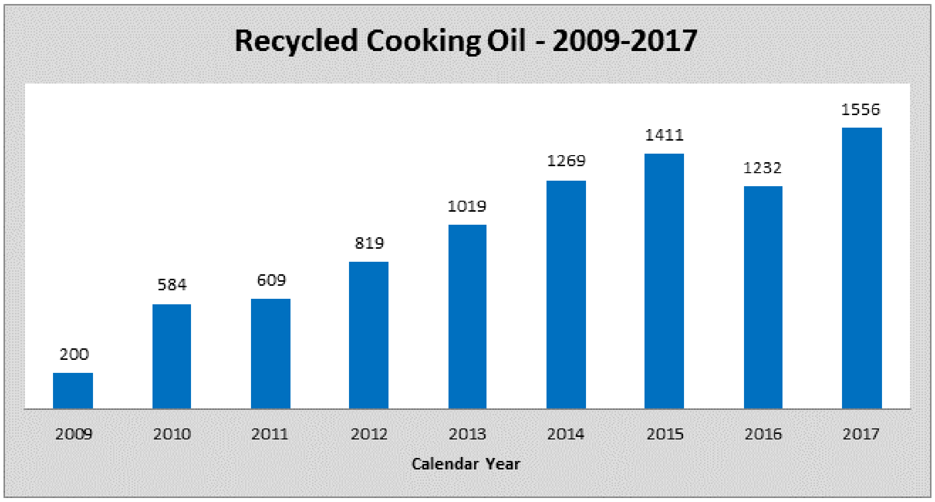
    - Onset Computer Coorporation – Monitoring Stormwater Control Measures (December 2017)

- EPA Risk of Drinking Water Contamination and Action to Prepare (March 2018)

G. Composting and Recycling Center/Household Grease Recycling Program

The City of Auburn has been operating a curbside recycling program since 1987. In addition to curbside recycling, the City maintains a drop-off center for recyclables. The *RecycleAuburn* drop-off center is located across from the Fleet Services Complex at 365-A North Donahue Drive. These operations allow citizens of Auburn to recycle waste instead of disposing of it in the landfill. The Water Resource Management Department initiated a Household Grease Recycling Program in 2009 with containers and bins located at the recycling center. This program provides citizens with a mechanism to properly dispose of household grease and is targeted at reducing potential sanitary sewer overflows. In 2011, the Water Resource Management Department launched a curbside household grease recycling program that provides residents with an opportunity to collect their household grease and have it picked up by City personnel at their residence. **Approximately 9,309 gallons of used cooking oil/grease have been collected since implementation of the program began in March 2009, with 1,556 of those gallons collected in 2017.** For more information on our household grease recycling program, please visit:

https://www.auburnalabama.org/water-resource-management/fog-recycling/.



In addition, the City maintains a Compost Demonstration Site that serves as an example of how homeowners can easily incorporate a home composting operation into a normal backyard setting. The site features six backyard compost units. The units range from a simple pile to a concrete bin. The exhibits take the public through the process of how to compost and recycle materials for garden use and encourage these practices. For more information on recycling of waste, please visit:

https://www.auburnalabama.org/environmental-services/.

H. Storm Drain Marking Project

In cooperation with the Auburn University Sustainability Initiative, the City initiated a storm drain marking program in 2007. School children within the City of Auburn were asked to submit designs for the original markers that were to be placed in the Saugahatchee Creek, Town Creek and Moore's Mill Creek watersheds. A number of the students' designs were selected for use. In 2010, the City of Auburn solicited new marker designs from children in the local school system. Winners were selected in April 2010 and had the opportunity to meet Mayor Ham to showcase their artwork. The local newspaper also ran an article on the project in April 2010. In 2009, the City developed a storm drain marking kit program that allows citizens to pick up a bag of materials containing all of the items needed to mark storm drains in their neighborhoods. Once the drains are marked, the citizen returns any unused materials to the Water Resource Management Department as well as a map showing the storm drains that were marked. During 2012 - 2013, the City hosted its third Storm Drain Marker Design Competition. This competition invites all 3rd – 5th grade elementary students to compete in designing the City's next storm drain markers. Winners were selected in March 2013 and each student received their award (a plaque with the storm drain marker they designed and a newspaper article published in the local paper) during a special presentation with the Mayor at City Hall. The City will continue to host these design competitions until all storm drains in the City have been marked. **During the 2017-2018 reporting year, approximately 125 markers were installed**. Since implementation of the program began approximately **2,031** markers have been installed, representing approximately **62 percent** of all the documented storm drains in the City of Auburn.

I. Ogletree Elementary School Earth Day Field Activities

This event is an all-day natural resource education and outreach initiative organized by the teachers of Ogletree Elementary School for 3rd – 5th grade students. It is typically held at Chewacla State Park, and includes a variety of outdoor education and recreation activities. Water Resource Management staff have given presentations to the students and teachers about watershed and stormwater management, water quality and water quality monitoring, and aquatic biology. Students and their teachers are given a basic, hands-on introduction to water quality monitoring, along with information about non-point source and point source pollution prevention and reduction and tips on water conservation. **The City participated in this event on May 3rd and May 5th of 2017.**

J. Green Infrastructure Master Plan

In 2016 the City began the process of planning for the future incorporation of Green Infrastructure as a "standard operating procedure". The first step in this process is to develop a strategic plan that identifies impediments to the use of Green Infrastructure and specific opportunities for the incorporation of Green Infrastructure. The City selected a team of consultants in 2017, led by the Wood Group, Inc., to develop this plan. The Green Infrastructure Master Plan that is currently under development includes these four pillars as the foundational framework:

1) Policy and Standards Review and Recommendations
2) Design Standards, Guidance, and Specifications

3) Pilot Project Planning and Concept Level Design
4) Education of and assistance to the Development Community

The City anticipates completing this plan in the fourth quarter of 2018.

K. Collaboration with Alabama Water Watch and the Auburn University Coast Guard Auxiliary Unit

In 2016 the City began working with Alabama Water Watch to identify opportunities for targeted water quality monitoring utilizing disciplined local volunteer organizations. The United States Coast Guard Auxiliary Unit Cadets at Auburn University were selected as the most capable and willing organization to perform a six-month trial program. 12 sites were selected in the Parkerson Mill Creek Watershed on or around Auburn University's Main Campus, which will be monitored monthly by six Cadets following Alabama Water Watch Protocols for bacteriological monitoring. Additionally, the Cadets will measure temperature and specific conductance at each location. The City contributed $300 for the purchase of monitoring supplies and anticipates utilizing the data to refine its identification and tracking of illicit discharges in the headwaters of Parkerson Mill Creek. **As of March of 2018, the Coast Guard Auxiliary Unit Cadets have collected and analyzed over 234 samples for E-Coli in the Parkerson Mill Creek Watershed.**

L. Comprehensive Stormwater Management Committee

In 2016 Auburn University formed an internal team to begin discussions about ways to modernize its stormwater management policy and programs and to identify areas for the development of consistency between its MS4 program and the City's. City staff have participated in these discussions since May of 2016, with meetings occurring monthly at a minimum. To date, this group has identified several ways in which each program can more effectively, and consistently, approach stormwater management within and between our respective jurisdictional areas. One such example includes joint annual review of our respective SWMP's, thus identifying opportunities for developing program consistency and collaboration. This group continued to meet through the current reporting year.

VII. PUBLIC INVOLVEMENT/PARTICIPATION

A. Citizens Advisory Committee

Both the EPA and ADEM recommend that the public be included in developing, implementing, and reviewing stormwater management programs through the establishment of a citizens advisory committee. Communities that encourage citizens representing diverse backgrounds and interests to participate in the development of stormwater management programs are far more likely to gain community support during the implementation process.

ALOAS CITIZENS STORMWATER ADVISORY COMMITTEE (2001-present) **- ALOAS** is a Citizens' Advisory Committee that serves **A**uburn, **L**ee County, **O**pelika, **A**uburn University and **S**miths Station. It meets on a quarterly basis to review and provide public input on current policies, brochure content, educational material, and proposed ordinances. Prior to 2012, the Citizens Advisory Group was known as ALOA. In 2012, the City of Smiths Station joined the group and the group renamed itself ALOAS to include the addition of Smiths Station. ALOAS meets quarterly throughout the year, with **two meetings held in 2017 (it should be noted that two ALOAS meetings were substituted by two meetings of the broader Alabama Stormwater Association)**.

In 2017, ALOAS members utilized educational materials produced and/or provided by the Clean Water Partnership, as opposed to producing its own brochures. These brochures and other materials are available to the citizens of Auburn and can be obtained at City Hall, the Bailey-Alexander Water and Sewer Complex or by contacting the Water Resource Management Department at (334) 501-3060. The brochures can also be downloaded from the City's website at https://www.auburnalabama.org/water-resource-management/watershed/aloas/.

B. Watershed Organizations

Regional watershed organizations bring together representatives from utilities, private industry, environmental awareness groups, farmers and branches of government to coordinate individual efforts, share information and plan for water resource and aquatic life protection. The regional approach allows participating entities to expand upon individual efforts in order to maximize limited resources. These organizations also allow for the sharing of ideas, lessons-learned, and development of professional networks.

Lower Tallapoosa River Basin/Clean Water Partnership (2001-present) - The City actively participates in the Lower Tallapoosa River Basin Clean Water Partnership and on technical sub-committees to assist and guide the development and implementation of a watershed management plan. The organization meets on a quarterly basis**. In 2017, as a member of the Clean Water Partnership (CWP), the City participated in and hosted quarterly meetings of the CWP's Tallapoosa Steering Committee at the City of Auburn Bailey Alexander Water and Sewer Complex.**

Save our Saugahatchee and Alabama Water Watch Citizen Water Quality Monitoring Program (2014 - Present) – Beginning in 2014, the City of Auburn, the City of Opelika, and the Lee County Highway Department have contributed $350 each to pay for material aid to the volunteer water quality monitoring programs operated by Save our Saugahatchee and the Alabama Water Watch organization. These funds are used for both physical-chemical monitoring of local waters as well as bacteriological monitoring used to guide illicit discharge detection and elimination efforts. **In 2017, the City's contribution to these organizations financed routine monitoring of ~30 sites in the Saugahatchee Watershed, resulting in 125 water quality monitoring events (including water chemistry and bacteriological monitoring).** All data collected is made available to the public via the Alabama Water Watch Data Portal at:

www.alabamawaterwatch.org/water-data

Parkerson's Mill Creek Watershed Management Plan Group (March 2010 – present) - Parkerson's Mill Creek was placed on Alabama's 303(d) List of Impaired Waters for pathogens in 2007 and a pathogen TMDL for the Parkerson's Mill Creek Watershed was subsequently approved by ADEM in July 2011. Beginning in March 2010, the City has actively participated as a stakeholder in the development of the Parkerson's Mill Creek Watershed Management Plan for the past seven (7) years. This Plan was made possible through a Clean Water Act Section 319(h) grant from the United States EPA and ADEM. The Plan's purpose is to outline a framework of BMP's for restoring water quality in Parkerson's Mill Creek by addressing impacts from non-point source

pollution (stormwater runoff). The Plan was submitted to ADEM for approval in late 2010 and implementation funding was received from ADEM in 2011. The City will continue to be involved as a stakeholder in the implementation of the Parkerson's Mill Creek Watershed Management Plan. An update on Parkerson's Mill Creek Watershed Management Plan activities completed in 2017 can be found below:

- The PMC Group assisted with supporting of bacteriological monitoring in Parkerson's Mill Creek by Auburn University undergraduates students (ex. Sydney Smith), which in turn supported investigative illicit discharge detection and elimination activities for the City of Auburn and Auburn University. This included the continued support of the Auburn University Coast Guard Auxiliary Unit in 2017.

  For more information on the Parkerson's Mill Creek Watershed Management Plan, please visit http://www.aces.edu/waterquality/pmc.htm.

C. City of Auburn Earth Week 2017/Household Hazardous Waste Collection Day

Earth Day is a week-long event in the City of Auburn. Over the last several years, City departments have worked to create and implement a week of environmental activities and events aimed at educating citizens of all ages of the importance of protecting our environment. In conjunction with Earth Week 2017, the City hosted its 13th Annual Household Hazardous Waste Collection Day. This annual event is a favorite among Auburn residents. Each year, the City allows its customers to drop off hazardous household chemicals at a collection site free of charge. The items are then disposed of in a safe manner, eliminating the possibility of these items being improperly dumped in local creeks and streams. **The 2017 Household Hazardous Waste Collection Day yielded approximately 21,110 pounds (10.6 tons) of waste collected!** Additional Earth Week 2017 activities included:

- Educational Activities for 2nd Graders including the NRCS Enviroscape model and other demonstrations
- Environmental Education Event at Chewacla State Park for Ogletree Elementary School's 3rd-5th graders, and;
- Various public library activities centered around Earth Week.

D. Website Hotline

In an effort to provide the general public with an additional means of reporting potential erosion control violations, the City launched the "On-Line Hotline" in March 2003. Citizens now have the ability to log on to the website 24 hours a day and provide information on suspected violations. The information is forwarded to the Water Resource Management Department and an investigation is initiated. The website hotline has proven to be a valuable tool over the course of the past fourteen years by assisting City personnel in responding to citizen concerns. For more information concerning the hotline, please visit:

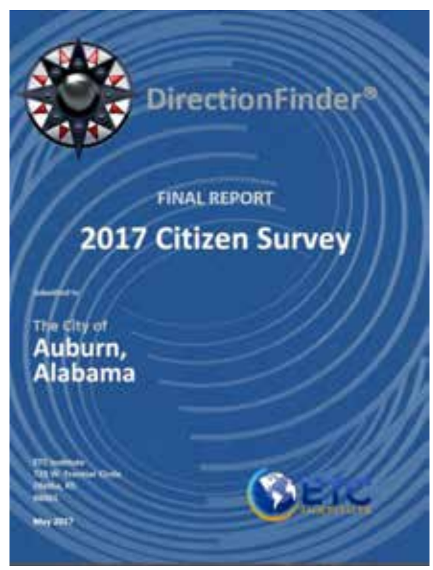
https://www.auburnalabama.org/water-resource-management/watershed/illicit-discharges/.

E. Arbor Day Tree Give Away

The planting of trees improves water quality by reducing stormwater runoff and erosion while facilitating nutrient removal. In celebration of Alabama's Arbor Day and to encourage the reforestation of the City's urban landscape, the City's Tree Commission sponsors a tree giveaway. **The Commission gave away 1,000 Dogwood seedlings at the annual 2017 Arbor Day Tree Giveaway. The City also gave away 1,500 Dogwood seedlings at the 2017 Christmas parade. In total, the City contributed $257,683.71 on Urban Forestry initiatives in 2017.**

F. City of Auburn Citizen Survey

The citizen survey is an annual survey of a statistical cross section of randomly selected members of the community. The survey asks questions on issues of governmental performance and community priorities and is a means of encouraging citizens to participate in local government. In 2017, the survey contained several questions that were directly or indirectly related to stormwater issues. The questions covered issues such as infrastructure maintenance, trash collection, yard waste disposal, recycling, natural resource protection, greenspace initiatives and future growth planning. Once again in 2017, the City received very high satisfaction levels in most areas.



To view the Citizen survey, please visit: http://www.auburnalabama.org/survey.

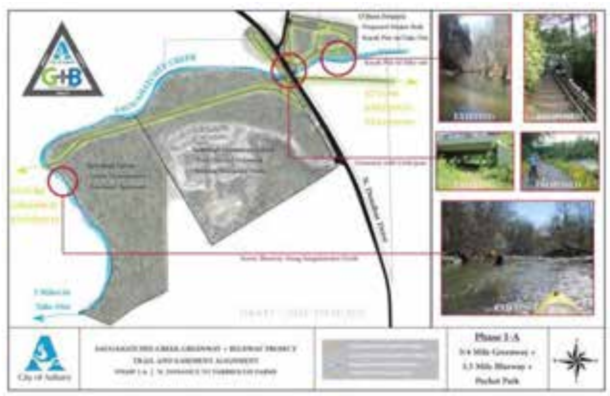
G. Newspaper Articles

Newspaper articles covering local stormwater/environmental issues are a means for disseminating information to a large and diverse group of residents most directly impacted by these issues. Informative articles provide the reader with an independent point of view. The reader is not forced to rely on information generated by a single source (i.e. City through the newsletter Open Line or brochures).

The City is fortunate to have a local daily publication. The Opelika-Auburn News is a regional daily newspaper that covers local events and is widely read by residents of Lee County. A weekly newspaper publication, the Auburn Villager, began circulation in 2007. A listing of articles and publication dates is included in Appendix C of this report.

H. Greenspace Advisory Board/Greenspace Master Plan

The Auburn Greenspace Advisory Board (GAB) was created by a City Council resolution in 2002. Its objective was to identify potential areas for future property acquisitions for parks, recreation facility projects, and greenways. Once identified, these properties could be purchased and/or protected from development.



In 2003, the GAB recommended a Greenspace/Greenway Master Plan for the City. It was adopted in December 2003 by the City Council and has been utilized by the Planning Commission in connection with approval of projects. The GAB revised the initial Plan to include a vast expansion of the proposed greenspace/greenway areas. This first amendment to the Greenspace/Greenway Master Plan was adopted by the City Council in October 2004.

This plan has resulted in the acquisition of several hundred acres of property located in environmentally sensitive areas. The greenspace/greenway areas include proposed bikeways and trails along existing and new roads and along waterways located within the City's growth boundary. Areas along waterways may be improved with natural trails and will be preserved by the dedication of conservation easements in developments or the acquisition of property by the City. The City acquired one property dedicated as Greenspace in 2017, which included +/-12 acres along Saugahatchee Creek near N. Donahue. Additionally, the City continued its feasibility analysis, planning, and design work associated with a combined Blueway/Greenway along Saugahatchee Creek (general alignment as identified in Greenway Master Plan). **Design and construction documents**

are currently under development for the first phase of the Saugahatchee Greenway + Blueway Project. The City has budgeted $1,000,000 toward this project during the current fiscal year.

I. Auburn Interactive Growth Model

In 2007 – 2008, the City, through its Planning Department, contracted with a firm to develop the Auburn Interactive Growth Model (AIGM), a tool the City utilizes to make informed planning decisions. Detailed inventories were conducted for current development such as housing unit by type, population by age groups and retail space by gross area. A demographic forecasting model was developed as well as models for other uses that will provide guidance for future land use allocations. The AIGM also forecasts the spatial distribution of the population over time and the apportionment of land uses necessary to meet the needs of the population. The Planning Department updates the AIGM annually. Since its initial completion, the AIGM's population projections have been used in projecting water and sewer demand, future traffic, regional growth, school growth and as the foundation of the Future Land Use Plan component of CompPlan 2030. In FY 2015 the AIGM was used to project growth and demand as a part of the Downtown Master Plan. In FY 2016 the AIGM was used in conjunction with the Parks, Recreation and Culture Master Plan and to implement a 5-year update to CompPlan 2030 (the city's comprehensive plan). **In early 2018, the City completed and adopted the 5-year updates to that plan.**

J. CompPlan 2030

In 2009, the City's Planning Department began development of CompPlan 2030, a comprehensive plan to guide future development in Auburn. CompPlan 2030 focuses on the following key areas: current and future land use, and how land use and the built environment affects our natural resources, schools, parks, utilities, civic facilities and transportation. The Plan provides guidance for future planning based on public input, analysis of current and future conditions, and best practices. A series of public meetings was held in 2009 and 2010 to allow citizens to share their ideas for Auburn's future, giving citizens a voice in the development of the plan. The Future Land Use Plan provides parcel-level recommendations for the type and scale of new development for the next twenty years, and is the product of a strategy to promote infill development and growth in downtown Auburn. The Future Land Use Plan element of CompPlan 2030 replaces the 2004 Future Land Use Plan. The Natural Systems and Utility sections of CompPlan 2030 provide recommendations for water conservation and stormwater management. The plan was adopted by the Auburn City Council on October 4, 2011 and City Departments are now working to integrate components of the Plan into their operations. **Revisions to the CompPlan 2030 were completed and adopted by the City in February of 2018.** For more information on CompPlan 2030, please visit:

https://www.auburnalabama.org/CompPlan2030/

K. Renew Opelika Road and Downtown Master Plan

Undertaken in concert with hands-on community involvement, the Downtown Master Plan reflects a balance of ideas that seek to address the needs of tomorrow while simultaneously seeking to understand the necessary steps for growth today. On this notion, the Master Plan lays out a realistic and community-based vision for the future expansion and growth of Downtown Auburn as it pertains to private development, open space and streetscapes, circulation, transportation, and economic development. The plan was adopted in July 2014 and has had immediate impact. The Zoning Ordnance changes were the first implementation steps of the plan followed by reconstruction of Toomer's Corner with green infrastructure technologies. Further implementation of the plan continues encouraging sustainable development and capital improvement projects.

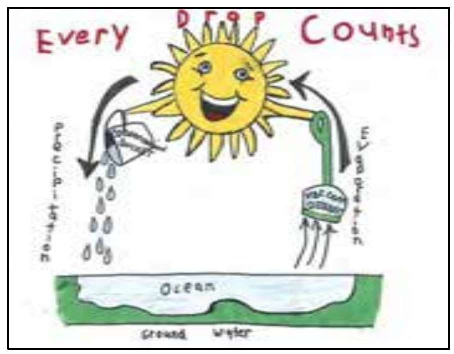
The City retained Design Workshop, Inc. to provide planning services to develop the Renew Opelika Road plan. Key to the planning process was an extensive process of public engagement. Hundreds of people participated, either in one of three public meeting opportunities or through online surveys.

The final outcome of Renew Opelika Road is a plan to guide the future development of Opelika Road and help ensure the area's future commercial vitality. The plan helps answer questions of how the community and City can support Auburn's existing businesses and attract new destinations for residents. The plan also illustrates the most effective way to improve traffic flow, pedestrian accessibility and the overall look and feel that citizens envision for the Auburn community. Several options regarding stormwater treatment along Opelika Road were included for public input during the planning process. The plan was adopted by Auburn City Council on August 20th, 2013. The first phase of implementation is complete and included changes to the zoning ordinance, changes to the future land use plan, and physical reconstruction of Opelika Road from North Gay Street to North Ross Street. The second phase was completed in 2016, which included reconstruction of the Opelika Road and East University Drive intersection. **These public improvements have stimulated private investment along the corridor in 2017 and 2018, including redevelopment at Pitts Street, proposed redevelopment of the south side of Opelika Road between Gentry Drive and Saugahatchee Road, and around the East University Drive intersection east to the city limits.**

For more information on the Renew Opelika Road Plan, please visit:

https://www.auburnalabama.org/opelikaroadplan/

L. Lee County Water Festival



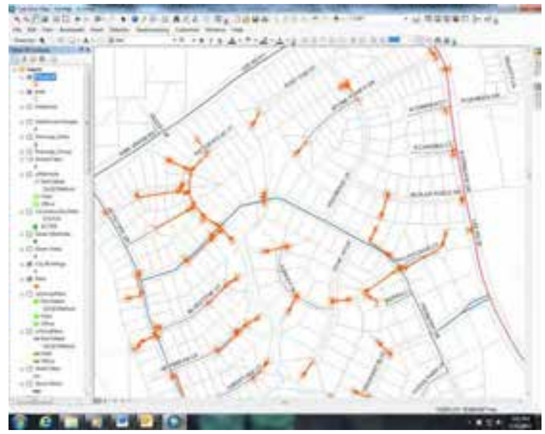
On May 3rd and 4th, 2017 the thirteenth annual Lee County Water Festival was held at the Opelika SportsPlex. Over 1,200 fourth graders from schools in the Lee County area attended the two-day event. The primary purpose of the event is to educate young people on the importance of our water resources and the role each of us plays in conserving our water. During the event, students learned about water filtration, aquifers, and the water cycle through hands-on activities such as building an edible aquifer, making a water cycle bracelet, and building a mini-filtration unit. Volunteers from the City of Auburn, the Auburn Water Works Board, the City of Opelika, and other local groups helped make this past year's event a huge success. **The Auburn Water Works Board also helps to sponsor the annual Lee County Water Festival by providing a monetary donation in the amount of $3,000/year**. Planning is currently underway for the 2019 Water Festival.

M. Auburn University Big Event Stream Clean Up

In conjunction with the 2018 Auburn University BIG Event, the City of Auburn sponsored a stream cleanup event in Town Creek at Town Creek Park on March 3, 2018. 10 students from Auburn University assisted Water Resources staff in collecting over 20 bags of litter and other debris from Town Creek.

VIII. ILLICIT DISCHARGE DETECTION AND ELIMINATION

A. Storm Sewer Mapping



The City of Auburn completed the initial mapping of its storm sewer system in 2003. The mapping is maintained in a Geographical Information Systems Database (GIS). Detailed information on pipe size, pipe material, direction of flow, inlets, manholes, bridges, box culverts, detention ponds, and headwalls are maintained in the City's GIS database. The City is currently working to collect stormwater infrastructure data throughout the entire City Limits. In 2013, the City began a Utility Mapping Project utilizing City survey crews and several outside surveying firms. **This project, the initial inventorying phase, was completed in 2017, which included the surveying of over 41,875 linear feet (7.93 Miles) of storm sewer main.** GIS files are updated on a regular basis as new work is added or as old work is modified to current standards. The latest revisions of the maps can be obtained through the Public Works Department located at 171 North Ross Street.

B. Illicit Discharge Ordinance

The Environmental Protection Agency (EPA) recommends municipalities implement an ordinance that provides the means to identify and enforce correction of illicit discharges. In the City's NOI, submitted to ADEM in March 2003, the stated goal was to develop and implement an Illicit Discharge Ordinance by December 2005. This goal was met two years ahead of schedule.

A draft copy of the Illicit Discharge Ordinance was reviewed by the **ALOA** (now ALOAS) Citizens Advisory Committee in November of 2003. A revised draft was forwarded to the City Attorney and Municipal Judge for review in December 2003. The Auburn City Council adopted the Illicit Discharge Ordinance on January 20, 2004 **(revisions made in 2017 and adopted by City Council in May of 2018).**

The City of Auburn responded to several cases of reported illicit discharges during the current reporting year. In each instance, the illicit discharge was traced back to its source and the violator was given a notice of violation and informed of the penalties for violating the City's Illicit Discharge Ordinance. In each incident, the City was able to ensure proper cleanup and corrective actions taken.

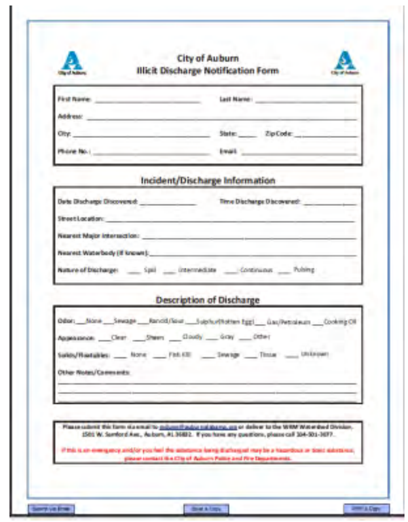
C. Stormwater Outfall Reconnaissance Inventory

In 2009, the Water Resource Management Department began a stormwater outfall reconnaissance inventory (ORI) program. The purpose of this ORI program is to familiarize staff with all receiving waters within the City limits, conduct an inspection of each stormwater outfall and prepare detailed documentation of each stormwater outfall in that basin so that water quality concerns are documented and corrective actions planned. City staff are able to document any current illicit discharges and provide more detailed location information concerning existing outfalls. The City's ORI program is patterned on recommendations outlined in the *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments* (Center for Watershed Protection and Dr. Robert Pitt, October 2004). The City's goal is to inspect (or screen) all of its outfalls every five years (and/or 15% per year). In calendar year 2015 Watershed Division staff began planning for the second phase of its ORI Program. This included purchasing of a LaMotte Smart 3 Colorimeter for enhanced source identification and tracking, development of plans for a small laboratory at the WRM offices, and updates to the ORI tracking application. Upon the initial completion of its inventory, the WRM Department documented and inspected approximately two hundred forty (240) miles of stream and documented approximately one thousand two hundred twenty-eight (1,228) stormwater outfalls in the Saugahatchee, Parkerson's Mill, Moore's Mill and Town Creek Watersheds. Staff also inspected approximately one hundred fifty (150) sanitary sewer aerial creek crossings and identified approximately eight hundred fifty eight (858) concerns or potential concerns during the ORI program. **During the current reporting year, staff re-screened and/or performed water quality analyses at 452 of the City's outfalls representing >35% of all outfalls in the City.**

The Water Resource Management Department collaborated with the City's Information Technology (IT) Department GIS Division in 2010 to develop a stormwater outfall tracking tool that allows for easy management, access and viewing of data collected during the ORI program. Staff from multiple departments can view the data assimilated by this application and can utilize that information to monitor progress at addressing concerns identified by field survey. This tool/application was updated in 2015 to include attribute fields for water quality data. A screenshot of this tool can be seen above.

The ORI program is just one example of the measures the City has taken in creating and sustaining an efficient, effective and innovative stormwater management program, with the ultimate goal of protecting our local water resources. Staff will continue both visual screening and water quality screening of select outfalls in 2018-2019.

D. Illicit Discharge Hotline and Reporting Form



City of Auburn
Illicit Discharge Notification Form

First Name: ______ Last Name: ______
Address: ______
City: ______ State: ___ Zip Code: ______
Phone No.: ______ Email: ______

Incident/Discharge Information

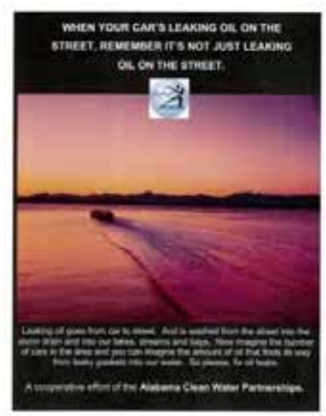
Date Discharge Discovered: ______ Time Discharge Discovered: ______
Street Location: ______
Nearest Major Intersection: ______
Nearest Waterbody (if known): ______
Nature of Discharge: ___ Spill ___ Intermediate ___ Continuous ___ Pulsing

Description of Discharge

Odor: ___ None ___ Sewage ___ Rancid/Sour ___ Sulphur (Rotten Egg) ___ Gas/Petroleum ___ Cooking Oil
Appearance: ___ Clear ___ Sheen ___ Cloudy ___ Gray ___ Other
Solids/Floatables: ___ None ___ Fish Kill ___ Sewage ___ Tissue ___ Unknown
Other Notes/Comments:

In 2008, the Water Resource Management Department developed an illicit discharge reporting form that residents can download, complete and e-mail back to the Department upon discovering a potential illicit discharge. This document is located on the Illicit Discharge Website, giving residents instant and 24-hour access to the form. This form assists the Department in tracking and responding to illicit discharges. This form can be downloaded from the City's website at https://www.auburnalabama.org/water-resource-management/watershed/illicit-discharges/. No forms were submitted in 2017.

E. Public Education on Illicit Discharges and Improper Disposal



The Alabama Clean Water Partnership, in association with ADEM and other environmental groups, has produced a series of public service announcements featuring the "Nerdy Man". The City of Auburn has obtained materials for distribution from the Clean Water Partnership and provides them free to the public through its information centers located at City Hall, the Bailey-Alexander Water and Sewer Complex and the Development Services Building. These materials can also be obtained by contacting the Water Resource Management Department at (334) 501-3074. The City also routinely places articles in the City newsletter, Open Line, to educate citizens on illicit discharges. **In 2018, the City also began working with its IT Department to develop an employee and citizen online training program for recognizing and responding to illicit discharges. This online training program will be made available to all City employees and the general public in 2018.**

F. Inspection of Drainage System

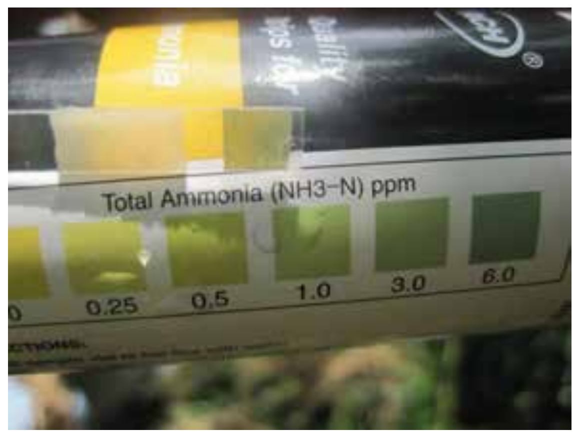
The Public Works Department conducts routine inspections of its drainage system in order to maintain free flowing conditions. During this process, key stream sections, bridges, and culverts are inspected and routine maintenance is conducted. As areas are identified for maintenance, the work is listed on the maintenance schedule and a crew is assigned to perform the task. Water Resource Management staff are also documenting areas of concern during ORI inspections. These areas of concern are documented and placed in the stormwater outfall tracking database. **In 2017, the City's Public Works Department completed over 75 work orders associated with the cleaning of culverts and/or drain channels of debris, sediment, and trash.**

G. Hazardous Waste Emergency Response Team

The City maintains a mutual aid agreement with the City of Opelika to share some of the cost of operating an emergency response vehicle equipped to handle hazardous waste spills. The agreement provides the City with the ability to properly identify and address hazardous or potentially hazardous spills. **This agreement was renewed in 2017.**

H. Water Quality Monitoring Programs

In 2004, the City of Auburn began a water quality monitoring program in an effort to analyze the effectiveness of stormwater best management practices (BMPs) on active construction sites within the City. This program has been significantly expanded over the past 14 years to include a diverse range of monitoring programs and more in-depth water quality monitoring.



In 2017, the City of Auburn continued its water quality monitoring programs in accordance with its mission and Stormwater Quality Monitoring Plan. Altogether, thousands of data points are collected by City staff and are used to make data-driven decisions for the protection, preservation, and restoration of our local water resources. **For additional information concerning the City's Water Quality Monitoring Program, please see the 2017 Annual Water Quality Monitoring Report included in Appendix E. This Water Quality Monitoring Report is being submitted in accordance with Part V of NPDES General Permit ALR040003.**

IX. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

A. Erosion and Sediment Control Ordinance

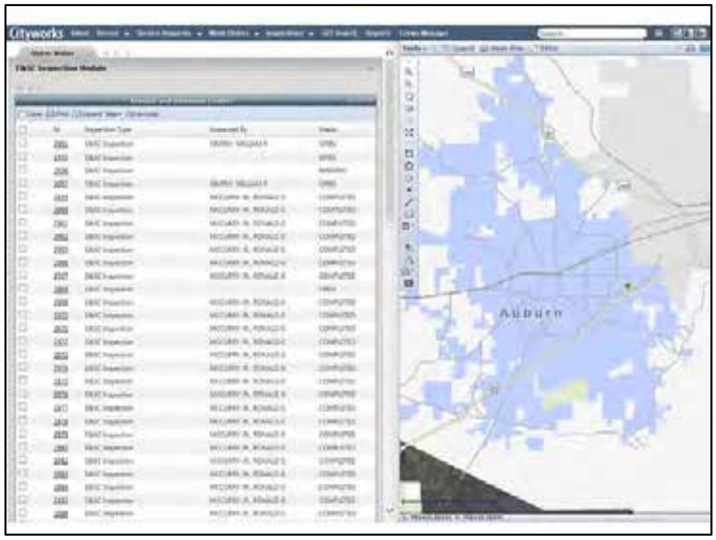
The City, in conjunction with the City of Opelika and Auburn University, adopted the Erosion and Sediment Control Policy drafted by the ALOA (now ALOAS) Citizens Advisory Committee in 2003. The policy provides for a regional set of rules that can be applied to contractors, developers and engineers in the area.

The Auburn City Council approved additions to the City's Erosion and Sediment Control Ordinance in 2005 to establish protocol for enforcement of the Ordinance and to enable City personnel to issue citations to developers/contractors in violation of the Ordinance. The enforcement mechanisms have proven to be a valuable tool in ensuring compliance with the Ordinance.

B. Erosion Control Inspections

The City, in an effort to patrol the management of erosion and sediment control measures on active construction sites, initiated a construction site inspection program in 2003. The inspection program is designed to identify deficiencies in erosion control and initiate corrective action. **Approximately 880 site erosion and sediment control inspections were performed during the current reporting year (includes follow-up inspections), resulting in 440 enforcement letters and 46 72-Hour Notices of Violation**. The number of inspections performed is relative to development activity and annual rainfall intensity and accumulation patterns. The City's Water Resource Management Department maintains copies of the inspection reports in an electronic format.

C. Erosion Control Inspection Software



In 2011, staff from the City's Water Resource Management Department and Information Technology Department created an electronic erosion and sediment control inspection software program. This software gives staff the ability to fill out electronic copies of the erosion control inspection checklist using handheld units while in the field performing inspections. In 2015 Watershed Division staff began working with the City's IT staff to migrate the erosion and sediment control inspection and enforcement tracking into CityWorks, a GIS-centric asset management software. Watershed Division staff began using this software exclusively in 2016.

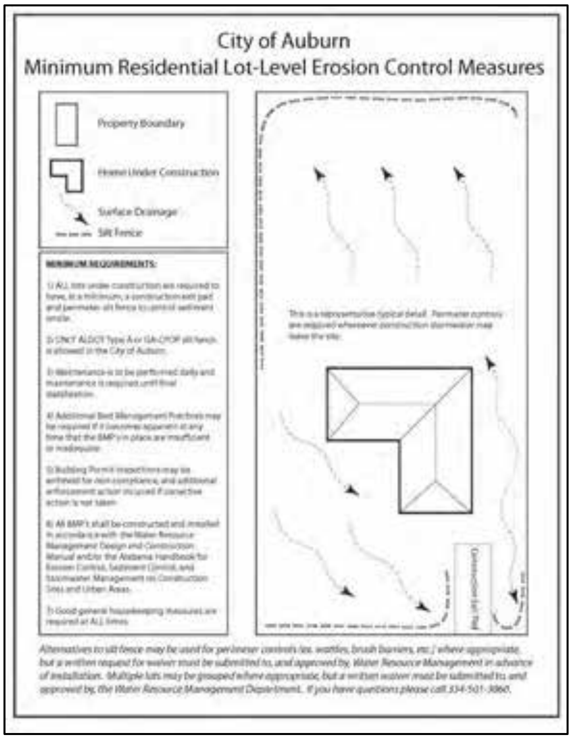
D. Residential Erosion Control

The City's Inspection Services Department (formerly Public Safety Codes Enforcement Division) conducts an initial site inspection for all building construction in Auburn. Lots requesting the initial inspection must have a construction entrance and other necessary best management practices (BMPs) in place prior to authorizing foundation construction. Deficiencies noted during the initial inspection are relayed to the building permit applicant for correction.

The City's Inspection Services Department also maintains a database of complaints received in association with erosion resulting from residential construction. The complaints are routed to enforcement officers or to Water Resource Management Department staff who investigate the complaint and pursue corrective actions with the responsible parties. Water Resource Management Department personnel also do routine checks of home construction in Auburn to ensure compliance with the City's Erosion and Sediment Control Ordinance. **During the current reporting year, over 352 lot level erosion and sediment control inspections were performed. Of those, 106 (+/-30%) required corrective action due to inadequate and/or unmaintained BMP's.**

E. Added Elements to Erosion and Sediment Control

In 2015 the City began an effort to increase lot-level inspections of erosion and sediment control best management practices. Typically, the Watershed Division only conducts routine inspections of land disturbance activities equal to or greater than one acre, with routine inspections ceasing once the development is complete (roads & utilities). Increasing lot-level inspections will begin to "close the gap" between initial land clearing activities and final build-out of a project.

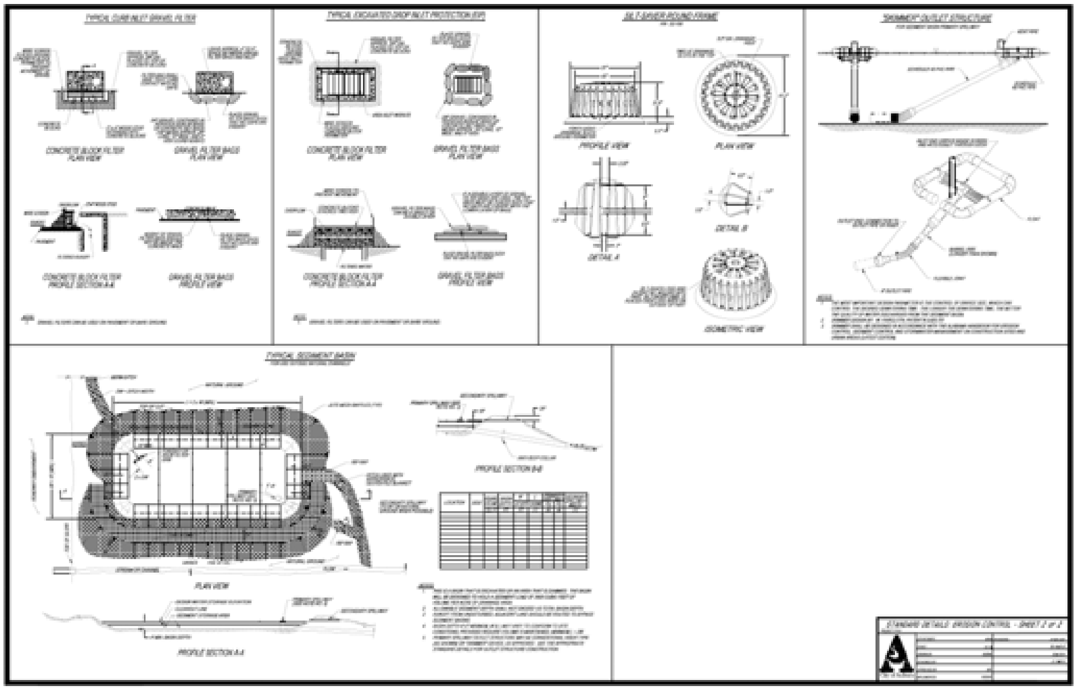


In conjunction with approval of the Water Resource Management Design and Construction Manual (discussed in Section X of report), the City changed the permitting process whereby erosion and sediment control BMPs are installed effective January 1, 2011. The City now issues an Erosion and Sediment Control Permit that allows for minimal clearing to install the approved BMPs onsite. This minimizes the clearing and grading work that sometimes occurred in the past prior to getting the site BMPs installed. **In 2016 the City began working to incorporate this permitting process into its CityWorks software and completed this transition in 2017.**

F. Erosion and Sediment Control Design

The City revised its standard erosion and sediment control details in 2010 to include a more detailed sediment basin design. The Alabama Handbook was revised in 2009 to include significant changes in design guidelines for sediment basins. The primary changes revolve around the use of baffles during construction and skimming devices for basin dewatering from the surface of the water column. The City has implemented this change in its standard details, as well as in its requirements for new developments within the City. In addition, the new construction stormwater general permit issued by ADEM in 2011 promotes the using of skimming devices by requiring mechanisms that dewater from the top of the water column in the basin.

In 2013, the City also began allowing Georgia DOT Type C silt fence with a polypropylene mesh backing for reinforcement, commonly referred to as C-POP silt

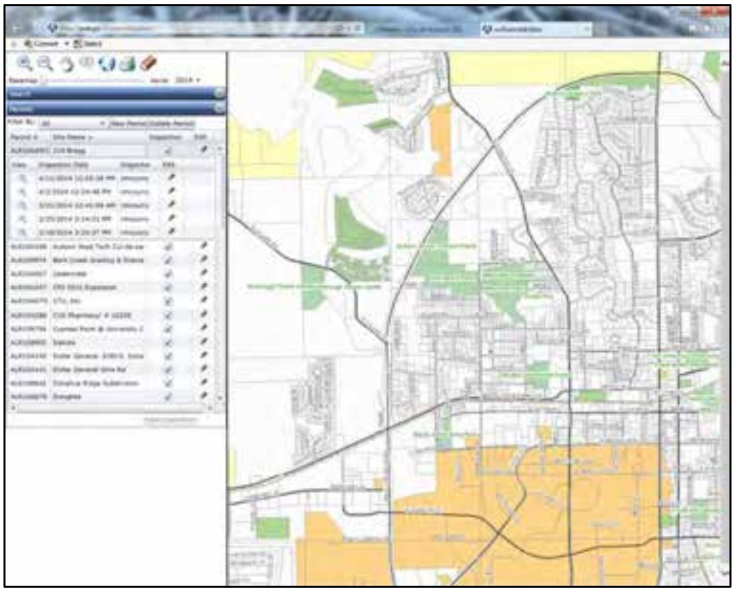


fence, as an approved alternative to Alabama DOT Type A silt fence. The C-POP silt fence is easier to install than Type A silt fence, thus helping to reduce costs, while still achieving adequate sediment capture. **In 2017, no revisions were made to the City's erosion and sediment control standard details.**

G. Rainfall Data Collection

In 2005, the City began maintaining historical rainfall data records. The data is obtained through a subscription to the Agricultural Weather Information System (AWIS) website. AWIS records daily weather data from the NOAA weather station at the Auburn University Regional Airport. The City collects the data on a routine basis and enters it into an Excel spreadsheet, enabling the City to analyze rainfall patterns and trends. The City has AWIS data dating back to 1976. The City records daily rainfall data at its two water pollution control facilities. In addition, the Auburn Water Works Board also has rain gauges located at Lake Ogletree and the James Estes Water Treatment Plant that provide daily rainfall records (intensity also available at Lake Ogletree as of 2016). Details regarding rainfall in 2017 can be found in the Water Quality Monitoring Report included in Appendix E of this report.

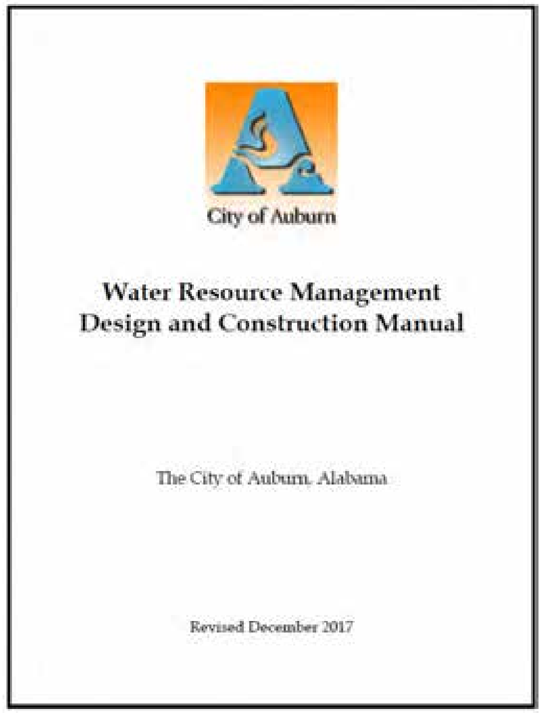
H. ADEM Construction Stormwater Permit Tracking Tool



In 2010, the Water Resource Management Department worked with assistance from the City's Information Technology Department to create a GIS-based tool that allows tracking of ADEM construction stormwater permits for developments within the City of Auburn. The tracking tool generates automatic emails that are sent to staff on a bi-weekly basis with notifications of expired permits, permits that are within thirty (30) days of expiration and permits that are within sixty (60) days of expiration. This allows staff to track permits in an efficient manner and to send notifications to permit holders who have expired permits or permits nearing expiration. In 2011, the permit tracking tool was incorporated into the Erosion and Sediment Control Software described earlier in this section. **This system was integrated with CityWorks in 2016 and staff began using it exclusively for conducting, managing, and tracking E&SC inspections and enforcement actions. The City will gradually phase out the use of this tool, as all inspections and permits will be entirely housed and managed in CityWorks.**

X. POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

A. Engineering Design and Construction Manuals



City of Auburn

Water Resource Management
Design and Construction Manual

The City of Auburn, Alabama

Revised December 2017

In April 2003, the City of Auburn published a Stormwater Design Manual that effectively addressed stormwater runoff controls required for sites greater than one acre. The manual identified project requirements and specifications for new infrastructure and also addressed the requirements for stormwater system sizing and stormwater runoff control/detention. During its implementation, the manual proved to be a very successful tool for the City and developers. The Water Resource Management Department contracted with CH2M Hill to develop an Engineering Design Manual in 2008 that includes engineering design criteria for sewer and water infrastructure, as well as stormwater BMPs for water quality protection such as rain gardens and stormwater wetlands. The Water Resource Management Design Manual also simplifies the City's regulations regarding restrictions on development in steep slope areas. The Public Works Department also developed a comprehensive Engineering Design Manual. The Stormwater Design Manual has been updated and included as an appendix in the Public Works Manual. Both the Public Works and Water Resource Management Design and Construction Manuals were adopted by the City Council in November 2010 and became effective on January 1, 2011. Revisions/amendments to the Manuals were adopted in 2011, 2013, 2014, and 2015. (*2016 revisions have been made and are pending approval by City Council). Reviews of these manuals are performed annually during the first fiscal quarter (October-December). **2017 Revisions include additional clarification in erosion and sediment control standards, which were adopted by City Council in December of 2017**.

B. Stream Buffer Regulations

As part of the Erosion and Sediment Control Ordinance adopted by the City Council in July 2002, a minimum 25-foot non-disturbed vegetative buffer zone was required for new developments on "blue line" streams and creeks identified on USGS 7.5 minute topographic maps. In May 2006, the City Council adopted new Stream Buffer regulations. The 2006 buffer regulations were based on a managed-use type buffer rather than a strict non-disturbed buffer approach. The 2006 regulations implement a 3-zoned buffer (streamside zone, managed use zone and upland zone) with the width of the buffer being based on the drainage area of the stream. A copy of the 2006 regulations can be found under Article IV in the City's Zoning Ordinance on the City's website. Greater than 656 acres of riparian corridors have been set aside since the adoption of the new regulations. **In 2017, the City reviewed 66 development plans for compliance with the stream buffer ordinance (80 projected cases for 2018).** The table below provides the City's current stream buffer requirements.

Stream Buffer Requirements				
Drainage Area (Watershed) Designation	**Streamside Zone**	**Managed Use Zone**	**Upland Zone**	**Total Buffer Width on each side of Stream**
< 100 acres	25 feet	None	10 feet	35 feet
≥ 100 acres and ≤ 300 acres	25 feet	None	20 feet	45 feet
≥ 300 acres and ≤ 640 acres	25 feet	20 feet	10 feet	55 feet
≥ 640 acres	25 feet	50 feet	25 feet	100 feet

C. Detention Pond Inspections

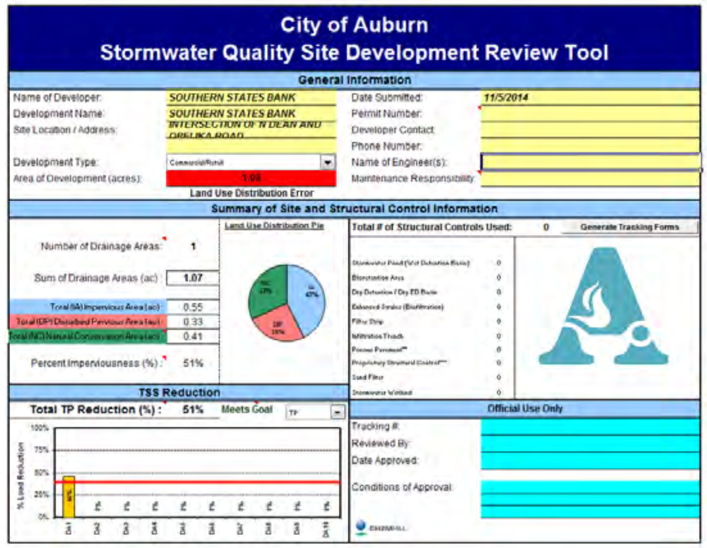
Existing detention ponds need periodic inspections to evaluate the maintenance and operation of these vital components of the City's drainage system. Because vast quantities of stormwater are collected and passed through these detention ponds every year, inspections of these facilities can identify potential problems and illicit discharges.

The Public Works Department and the Water Resource Management Department conduct annual inspections of all detention ponds (public and private) listed in the stormwater database. Upon inspection, the owner of the pond is notified of any corrective action needed. Enforcement measures are taken if the owner does not address the items listed in the report. **Approximately three hundred (300) detention ponds were inspected by the City in 2017 (308 projected for 2018).**

D. Conservation Subdivision Regulations

In 2006, staff members from the Planning Department, Water Resource Management Department, Public Works Department and Parks and Recreation Department began developing conservation subdivision regulations to aid in the protection of local water resources. These regulations were approved by the Auburn City Council in 2007. The regulations promote water resource protection through the setting aside of open space and concentrating development away from water resources. The ordinance and subdivision regulations promote the use of low impact design concepts to protect natural resources in the Auburn area. While developer interest for conservation subdivisions has not been strong to this point, the City continues to promote conservation subdivisions and low impact development principles for developments within the City of Auburn. These regulations can be downloaded from the City's website at https://www.auburnalabama.org/planning/development-services/subdivision-regulations/.

E. Site Development Review Tool



In 2006, the Water Resource Management Department contracted with CH2M Hill to develop a Site Development Review Tool (Tool) that could be utilized by local engineers when designing stormwater BMPs on developments within the City. This Tool was modeled on a similar tool created by CH2M Hill for Gwinnett County, Georgia.

The Tool was developed using a Microsoft Excel platform and can be used by engineers and developers to design and incorporate structural stormwater BMPs for developments within Auburn's planning jurisdiction boundaries and to maximize the efficiency of runoff pollutant management following construction of developments. This Tool can also be used to meet the target pollutant removal efficiencies outlined in the City's Conservation Subdivision Regulations.

The Tool provides pollutant removal estimates for site specific conditions based on removal efficiencies for a variety of stormwater BMPs including detention ponds, bioretention areas (i.e. rain gardens) and stormwater wetlands. This Tool analyzes a variety of stormwater pollutants including nutrients (phosphorus and nitrogen) and total suspended solids. City staff utilize the Tool during the plan review process to analyze development impacts on water quality within its water supply protection area (Lake Ogletree watershed). This Tool is also used by engineers when submitting water quality plans for developments located in the Saugahatchee Creek Watershed, the Parkerson Mill Creek Watershed, or the Lake Ogletree Watershed to assist them in determining if their post-development stormwater controls meet the City's applicable pollutant removal criteria. A copy of the Tool can be downloaded at https://www.auburnalabama.org/water-resource-management/standard-development-forms/.

F. Student Chapter of American Society of Civil Engineers Constructed Wetland

In 2015, the student chapter of the American Society of Civil Engineers (ASCE) of Auburn University worked to design and construct an Outdoor Civil Engineering Learning Lab (Auburn OutCELL) featuring educational displays and interactive exhibits meant to appeal to students of all ages. This project involved a collaborative effort with the City, which provided access to a city-owned site for developing the proposed learning center and design and construction feedback to the student-led team. The Auburn OutCELL will serve as a center where local K-12 students can come (free of charge) with family or school groups to interactively engage and learn about the various disciplines of civil engineering, specifically highlighting elements of environmental, geotechnical, hydraulics, hydrology, materials, structural, and transportation engineering.

The main feature of Auburn OutCELL is a constructed stormwater wetland, which includes an improved sediment basin and constructed treatment wetland system. Not only does this stormwater treatment system provide an ideal setup for lessons on erosion control, water quality, watershed hydrology and native Alabama vegetation, but it also serves to actively improve the quality of stormwater flowing into the Saugahatchee Creek. The site's location just off the unpaved Miracle Road leads to extremely turbid stormwater flowing through the site, which formerly deposited large amounts of sediment into the Saugahatchee Creek. **In late 2017, the City began design work associated with making improvements to this facility, including adding a parking lot and trails to access the OutCELL. Construction is anticipated to begin in late 2018 or early 2019.**

G. Parkerson's Mill Creek Sewer and Stream Stabilization Project

The WRM Department, in coordination with Auburn University and the Alabama Cooperative Extension Service, completed construction of the Parkerson Mill Creek Sewer and Stream Stabilization Project in December of 2015. This project involved cutting into the adjacent hillside for fill material and burying the exposed sanitary sewer infrastructure (which had become exposed through lateral migration of the channel), reshaping of approximately 300 linear feet of the east streambank and bed to establish a more stable channel geometry, construction of approximately 245 linear ft. of a bankfull flood bench to reduce velocities during overbank flows and provide riparian habitat, installation of a J-hook boulder vane structure and one (1) log vane structure to direct streamflow away from the sanitary sewer infrastructure, and planting native riparian vegetation throughout the project site. **In 2017, additional repairs were made to this project that included the installation of more gripple anchors and the removal of a large woody debris jamb.** For more information please contact Dusty Kimbrow at dkimbrow@auburnalabama.org or by phone at 334-501-7362.

I. Saugahatchee Greenway + Blueway Project

Saugahatchee Creek is identified as a Primary Greenway Corridor in the City's Greenway and Greenspace Master Plan. In 2015 the City began performing the necessary feasibility assessments for the development of both a greenway and blueway component of this corridor. Staff have evaluated approximately six (6) miles of Saugahatchee for floatability and over six (6) miles of existing sanitary sewer easement for trail alignment. **Between 2015 and 2018, the City has obtained more than 97 acres of land and/or public access easements thereto to convey +/-1.5 miles of Greenway and install two put-in/take-out locations. Additionally, in March of 2017 the City installed one**

realtime stream gage on Saugahatchee Creek, which will be used to develop a floatability index for kayaking. For more information concerning this project, please contact Daniel Ballard at dballard@auburnalabama.org or by phone at 334-501-7367.

J. Urban Tree Canopy Assessment Project

In 2018 the City entered into an agreement with the Green Infrastructure Center, Inc. (GIC) and the Alabama Forestry Commission to conduct an assessment of the urban tree canopy within the City, for the specific purpose of making recommendations for improved stormwater management. The primary outcome is a process for integrating trees into the city's stormwater management program. This process will be developed during the project with significant input by the City and it will be described in a project case booklet produced at the end of the project. Ultimately, the City will have a more strategic and effective process for combating stormwater runoff. While the City is not required to adopt the recommendations, it is anticipated that the City will make a good faith effort to undertake the strategies it has helped to create.

In addition to a developed process for integrating trees into the City's stormwater management strategy, the city will get:

- Updated tree canopy and impervious land cover map used to map current canopy and analyze runoff, stormwater benefits and potential for mitigating stormwater (map and GIS digital format + metadata).
- Potential planting areas map (digital GIS) used for strategic planning to set future canopy goals.
- Codes and Ordinance Audit for urban trees to facilitate better management and care.
- Workshops with local committees to provide education and solicit input.
- Model ordinance language or other program/policy documents for using trees to meet stormwater regulations.

- Written step-by-step- strategy and methodology for linking urban forest systems to urban MS4 requirements for the City.
- Case study of the project suitable for sharing at workshops, with elected and appointed officials and other agencies and stakeholders.

XI. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

A. Stormwater Management Training

The City of Auburn continues to develop a training program that provides the Water Resource Management Department and other City departments with information on the proper methods for implementing site control measures on all municipal projects. City personnel also attend a variety of stormwater/water quality related conferences, workshops and seminars annually.

Training opportunities during this reporting year included:

- **Alabama's Water Environment Association Annual Conference (April 2017 and April 2018)** – This 4-day conference sponsored by Alabama's Water Environment Association, state membership association of the Water Environment Federation (WEF), focuses on stormwater, water quality, and wastewater treatment issues. Four (4) City employees (Matt Dunn, Mikel Thomspon, Dan Ballard, and Jimmy Segrest) attended the 2017 and 2018 conference, attending technical sessions as well as vendor exhibits.

- **Alabama Water Resources Conference (September 2017)** – In September 2017, three (3) City employees (Daniel Ballard, Dustin Kimbrow, and Ron McCurry) attended the 2017 Alabama Water Resources Conference held in Orange Beach, AL. This annual conference focuses on a variety of water resource issues in Alabama and provides an opportunity to network with others to discuss these issues.

- **WEFTEC 2017 (September 2017)** – This 4-day conference, sponsored by the Water Environment Federation, is one of the premier water quality conferences in the world. WEFTEC 2017 was held in Chicago, IL. Three (3) City employees (Matt Dunn, Tim Johnson, and Eric Carson) attended this conference and attended technical sessions related to watershed protection, water quality, stormwater BMPs and wastewater treatment.

- **ADEM Nonpoint Source Conference (January 2018) -** In January 2018 one (1) City employees (Ron McCurry) attended ADEM's 28th annual Nonpoint Source Conference in Montgomery, AL. This one (1) day conference focuses on nonpoint source stormwater issues in Alabama.

- **Qualified Credentialed Inspector Training** – On average, 12 to 14 City employees maintain Qualified Credentialed Inspector (QCI) certification. This certification requires annual refresher training, for which all QCI certified personnel must perform in order to retain certification. In addition to QCI certified staff, the City has numerous professionals who qualify as Qualified

Credentialed Professionals (QCP) through existing certifications. **In 2017, 15 employees attended the refresher course and 6 attended initial training.**

- **Alabama-Mississippi Section of the American Water Works Association Conference** – In October of 2017 three City staff (Tim Johnson, Joe Eckardt, and Eddie James) attended the Alabama-Mississippi Section of the American Water Works Association Conference.

- **ADEM Annual Surface Water Meeting and Conference** – In October 2017, three City staff (Tim Johnson, Rick McCarty, and Thomas Buchanan) attended the ADEM Annual Surface Water Meeting and Conference.

- **American Water Works Association and Alabama Water Environment Association Utility Management Workshop** – In January 2018, four City staff (Matt Dunn, Eric Carson, Elizabeth Ingram, and Tim Johnson) attended this workshop in Montgomery, AL.

- **American Water Works Association Annual Conference** – In June 2017, one City staff (Elizabeth Ingram) attended this conference in Philadelphia, PA.

B. Spill Response and Prevention Training

The City of Auburn has developed an in-house spill response training program. Staff from Water Resource Management and Public Works' Construction Management and Fleet Services Divisions routinely inspect their respective facilities for proper containment and signage associated with storage of petroleum products. Additionally, staff attend annual training on Spill Prevention, Control, and Countermeasure (SPCC) to ensure that they are prepared to respond to discharges in an appropriate manner. **In 2017, four (4) staff attended training directly related to SPCC. Additionally, numerous Public Safety personnel attended HAZMAT training, which included elements of SPCC.**

C. Risk Management Manual

The City's Human Resources Department has developed a manual outlining specific requirements/policies for dealing with hazardous chemicals. Topic 12 (titled Hazard Communication Program) of the City's Risk Management Manual specifically requires City personnel to receive training on hazardous chemicals used. Safety Data Sheets (SDS) identifying personal protective equipment, permissible exposure limits (PEL) and Threshold Limit Values (TLV) are required for all hazardous chemicals used. The Hazard Communication Program was adopted as part of the Risk Management Manual.

D. Municipal Operations Recycling

2017 Calendar YR	
RecycleAuburn Tonnage Report	
Item	**Total Tons**
Newspaper	157.38
Green Glass	78.05
Clear Glass	105.88
Brown Glass	82.61
Aluminum Cans	28.93
Cardboard	500
Steel	8.91
Magazines	74.75
Mixed Paper	76.57
Plastics	48.01
Computers/Electronics	
Batteries	
Scrap Metal	45.19
Downtown Grease	16.62
Single Stream (began D	100.86
Total	**1323.76**
Monthly Average	**110.31**

It has been standard policy to encourage individual Departments to participate in the City's recycling program. Recyclable waste generated through City activities is collected and processed through the City's recycling center located on Donahue Drive. **In 2017, the City recycled more than 1,323 tons of waste.**

E. Street Sweeping & Litter Control

Regular street sweeping has been proven as an effective means to reduce overall pollutant loading from roads and storm sewer systems. The Environmental Services Department of the City currently performs street sweeping measures on a monthly basis throughout numerous roadways within the City. One (1) mechanical and two (2) regenerative-air/vacuum sweepers are used to perform this service. Regular street sweeping measures such as these have been shown to reduce total phosphorus loading from roadways by 1.4 to 20 percent and total suspended solids by 4 to 45 percent, with variability seen in frequency of sweeping and machine type (Breault et. al., 2003). **In 2017, the Environmental Services Department swept approximately 16,922 miles of streets and parking lots within the City, thereby removing approximately 893.68 tons of leaves and debris from the road. Additionally, the City removed 17,546 bags (584 cubic yards) of litter from over 4,362 miles of Right-of-Way.**

F. Alabama Certified Pesticides Applicator

The Parks and Recreation Department of the City maintains trained and certified personnel in the application of pesticides, including restricted-use pesticides. Although qualified to do so, the Parks and Recreation Department has not used any restricted-use pesticides in the previous decade. In order to maintain certification with the State of Alabama, the staff must document and complete 30 continuing education units (CEUs) over a three-year period. CEUs are earned at various conferences and workshops such as the Alabama Turfgrass Conference, Alabama Department of Transportation workshops, the Sports Turf Short Course and the Alabama Urban Forestry Association's Annual Conference. The CEUs cover the application of pesticides, information on the proper use of fertilizers and other chemicals typically used to maintain athletic fields, and best management practices for trees/shrubs/turf that are intended to reduce the need for pesticides, fertilizers and irrigation.

G. Municipal Facilities Inventory and Good Housekeeping Inspections

In 2017 the City completed an initial inventory and desktop assessment of all its properties and physical facilities, including an assessment of stormwater knowledge of the persons responsible for management and upkeep. The purpose of this inventory and assessment is to evaluate each property's respective potential to contribute to stormwater pollution, and to identify site-specific best management practices to improve maintenance and operation of these properties and facilities to reduce that potential. A total of 128 properties are currently owned and managed by the City. Of these 128 properties, 76 are developed (varying intensity) and 52 are in an undeveloped/natural condition. The initial desktop assessment of all properties included mapping of current aerial imagery of each property, site contours, hydrography, an evaluation of pervious and impervious surfaces, and the location of onsite storm sewer infrastructure. After the desktop assessment was completed, an initial Municipal Facilities Stormwater Questionnaire was distributed to each department responsible for the day-to-day management of the respective properties (developed properties only). Watershed Division staff are working to compile the results of these initial questionnaires to determine the most appropriate level and focus of employee education and to develop site specific best management practices for each property (if warranted). The complete inventory of properties, the initial results of the desktop assessments, and the stormwater questionnaire can be found in Appendix F of this report. Watershed Division staff have also developed a standard inspection form to be used in annual onsite inspections of these properties. This inspection form can be found in Appendix G of this report.

XII. STORMWATER INFRASTRUCTURE IMPROVEMENTS

In 2017, the Public Works Department continued to make considerable progress toward installing, rehabilitating and upgrading stormwater infrastructure within the City of Auburn. A listing of projects completed in 2017 is included below, along with projects under construction and a list of stormwater maintenance activities.

A. Stormwater Infrastructure Projects Completed

- Moores Mill Road Bridge Replacement Project – This project involved the installation of 80 LF of 12-inch Slotted Drain Pipe, 3500 LF of 18-inch Pipe, 192 LF of 24-inch pipe, 117 LF of 30-inch pipe, 304 LF of 60-inch pipe, 31 LF of 44" x 27"-inch pipe, 297 LF of 59" x 36"-inch pipe, 8 junction boxes, 32 single wing inlets, 5 double wing inlets, and 19 headwalls. The project also included the removal of 1001 LF of pipe, 7 inlets, and 19 headwalls.

- East Glenn Municipal Parking Lot – This project involved the installation of over 121 LF of 15" pipe, 1 junction box, 1 headwall, and 1,400 LF of curb and gutter. Additionally, this project included the installation of 7,800 square feet of permeable interlocking concrete pavers.

- North Donahue Drive Widening Project – This project involved the installation of 316 LF of 15-inch Pipe, 195 LF of 18-inch Pipe, 7 LF of 24-inch pipe, 1 junction boxes, 6 single wing inlets, and 2 double wing inlets. The project also included removal of 4 inlets.

- Wire Road Widening Project – This project involved the installation of 14 LF of 15-inch Pipe, 18 LF of 36-inch Pipe, 45 LF of 66-inch corrugated metal pipe, 3 single wing inlets, 1 double wing inlet, 1 36-incg headwall, and 1 66-inch headwall. The project also includes removal of 4 inlets.

- East University Drive & Samford Avenue Sidewalk and Culvert Replacement – This project involved the installation of 24 LF of 15-inch Pipe, removal and replacement of double barrel 6'x8' culvert, 2 double wing inlet, removal and replacement of existing headwalls.

- Moores Mill Road Sidewalk - This project involved the installation of sidewalk along the south side of Moores Mill Road from East University Drive and Samford Avenue. As part of the project, curb and gutter will be added to portions of the roadway which will trigger the need for inlets and pipe. The project also included removal of any old-style inlets.

B. Stormwater Infrastructure Projects Currently Under Construction

- New Public Safety Facility – This project will involve the demolition of the existing Fire Station 1 at the intersection of N. Ross Street and E. Magnolia Avenue, the removal of several hundred feet of an existing 60" pipe, the installation of >500 LF of new storm sewer pipe, and the installation of numerous Green Infrastructure practices.

C. Stormwater Infrastructure Maintenance Performed During Current Reporting Year

Maintenance Description	Date Performed	Address Where Performed
OUTLET REPAIR	4/10/2017	909 PUMPHREY AVE
INLET CLEANING	5/1/2017	2107 FELICITY LN
RIP-RAP INSTALL	5/1/2017	TOWN CREEK SUBDIVISION
INLET CLEANING	5/9/2017	CITY-WIDE RESURFACING
INLET CLEANING	5/10/2017	1142 LAKEVIEW DR
INLET REPAIR	5/17/2017	525 HAYWOOD STREET
DEBRIS REMOVAL	5/18/2017	DEER RUN RD & WILLOW CREEK RD
DITCH MAINTENANCE	5/22/2017	1715 PUMPHREY AVE
SEDIMENT REMOVAL	5/22/2017	342 E MAGNOLIA AV
INLET CLEANING	5/24/2017	426 SEHOY CIR
OUTLET CLEAN	5/31/2017	610 ELIZABETH DR

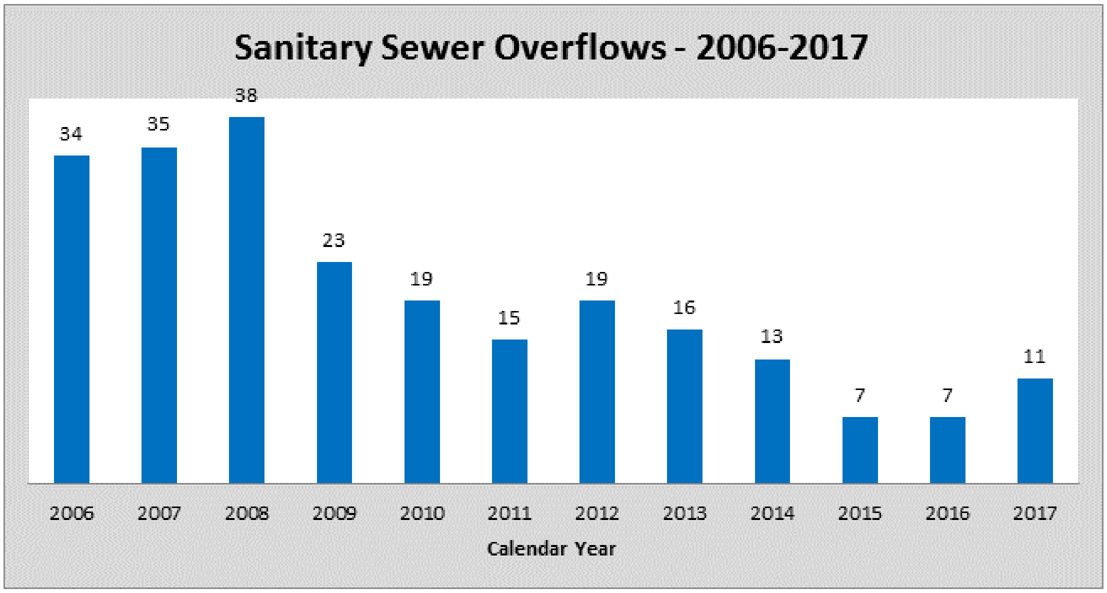
INLET REPAIR	6/7/2017	222 SHELTON MILL RD
DEBRIS REMOVAL	6/12/2017	937 TACOMA DR
INLET REPAIR	6/13/2017	667 COTSWALD WAY
INLET CLEANING	6/20/2017	1005 DEKALB ST
INLET CLEANING	6/26/2017	118 CECIL LN
DEBRIS REMOVAL	6/29/2017	LONGLEAF
INLET REPAIR	7/14/2017	1130 GRAYTON COURT
DEBRIS REMOVAL	7/20/2017	1921 N ASHE CT
HEADWALL CLEAN	7/31/2017	TEAGUE CT & PUMPHREY AV
DEBRIS REMOVAL	8/8/2017	651 BURKE PL
STORM WATER MAIN INSTALL	8/9/2017	960 MAGNOLIA
RE-GRADING	8/10/2017	1726 WRIGHTS MILL RD.
INLET CLEANING	8/10/2017	2264 COLUMBIA DRIVE
OUTLET CLEAN	8/10/2017	VETERANS PARKWAY
TREE REMOVAL	8/15/2017	579 SHERWOOD DR
JUNCTION BOX REPAIR	8/22/2017	BRAGG RUSSELL BUILDING SUPPLY
INLET REPAIR	8/23/2017	241 DEERFIELD DR
DITCH	8/23/2017	684 BANBURY ST

MAINTENANCE		
OUTLET CLEAN	8/24/2017	942 TISDALE CIR
DITCH MAINTENANCE	8/25/2017	GLENN
TREE REMOVAL	8/28/2017	1337 E SAMFORD AV
RIP-RAP INSTALL	9/1/2017	HEARD AVE CULVERT
INLET REPAIR	9/6/2017	616 SANDHILL
RIP-RAP INSTALL	9/7/2017	880 STANTON DR
INLET REPAIR	9/15/2017	2324 ANNADALE LN
INLET REPAIR	9/18/2017	1580 ALEX AV
OUTLET CLEAN	9/28/2017	1047 S COLLEGE ST
TREE REMOVAL	9/28/2017	237 HICKORY WOODS DRIVE
DEBRIS REMOVAL	9/28/2017	PICKS PUDDLE
DEBRIS REMOVAL	10/5/2017	515 HEYWOOD STREET
DEBRIS REMOVAL	10/6/2017	LONGLEAF CULVERT
STORM WATER MAIN CLEANING	10/10/2017	600 JENNIFER DR
DITCH MAINTENANCE	10/13/2017	8269 SOCIETY HILL RD
INLET REPAIR	10/13/2017	1210 SANDERS ST

TREE REMOVAL	10/13/2017	311 BRIAR CREEK CIR
TREE REMOVAL	10/20/2017	310 BRIAR CREEK
FLUME REPAIR	10/30/2017	7827 SOCIETY HILL ROAD
INLET REPAIR	11/4/2017	E GLENN AVE & N ROSS ST
RIP-RAP INSTALL	11/6/2017	HAMILTON RD & TUTTON DR
JUNCTION BOX REPAIR	11/6/2017	BELMONTE DR & BELMONTE DR
DEBRIS CLEAN-UP	11/13/2017	WRIGHTS MILL RD & CAMELLIA DR
DEBRIS CLEAN-UP	11/15/2017	YOUBROUGH TENNIS CENTER
DEBRIS REMOVAL	11/27/2017	FELTON LITTLE PARK
RIP-RAP INSTALL	12/4/2017	3867 NASH CREEK DR
SEDIMENT REMOVAL	12/18/2017	SOUTH COLLEGE TOWN CENTER
INLET CLEANING	12/21/2017	301 GARDNER DR
DEBRIS REMOVAL	12/22/2017	LONGLEAF
OUTLET CLEAN	1/5/2018	605 GREEN ST
INLET REPAIR	1/25/2018	BYRD ST & W MAGNOLIA AV

D. Sanitary Sewer Rehabilitation Projects

Several years ago, the City began implementation of a program to identify and rehabilitate aging sanitary sewer infrastructure in the City of Auburn. The primary purpose of this program is to rehabilitate aging infrastructure, prevent sanitary sewer overflows (SSOs) and reduce inflow and infiltration (I/I). The City actively addresses these issues through various sanitary sewer evaluation surveys and rehabilitation projects. **Efforts to rehabilitate gaining infrastructure have reduced SSOs substantially (average of 80 percent) since 2006.**



APPENDIX A

2016 PHASE II STORMWATER PERMIT

Lance R. LeFleur
Director

ADEM

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

Robert J. Bentley
Governor

September 12, 2016

Honorable Bill Ham, Jr.
Mayor, City of Auburn
144 Tichenor Ave., Suite 1
Auburn, Alabama 36830

Re: Municipal Separate Storm Sewer System (MS4) Phase II General Permit
NPDES Permit No. ALR040003
Lee County (081)

Dear Mayor Ham:

The Department has made a final determination to reissue General NPDES Permit No. ALR040000 for discharges from regulated small municipal separate storm sewer systems. The reissued permit will become effective on October 1, 2016 and will expire on September 30, 2021.

The Department notified the public of its tentative determination to reissue General NPDES Permit No. ALR040000 on November 18, 2015. Interested persons were provided the opportunity to submit comments on the Department's tentative decision through December 18, 2015. In accordance with ADEM Admin Code r. 335-6-6-.21(7), a response to all comments received during the public comment period will be available on the Department's efile system.

Based on your request, as evidenced by the submittal of a Notice of Intent, coverage under the General NPDES Permit No. ALR040003 is granted. The effective date of issuance coverage is October 1, 2016.

Coverage under this permit does not authorize the discharge of pollutant or non-stormwater that is not specifically identified in the permit and by the Notice of Intent which resulted in granting this coverage.

You are responsible for compliance with all provisions of the permit, including, but not limited to, the performance of any monitoring (if applicable), the submittal of any reports, and the preparation and implementation of any plans required by the permit. Part II.A.4. of the re-issued permit requires the submittal of an updated Stormwater Management Program Plan (SWMPP) within three months of the issuance date of this permit (January 1, 2017).

If you have any additional questions or concerns, please contact Marla Smith by email at mssmith@adem.state.al.us or by phone at 334-270-5616.

Sincerely,

Jeffery W. Kitchens

Jeffery W. Kitchens, Chief
Stormwater Management Branch
Water Division

JWK/mss

File: FPER/1207

Enclosure: Final Permit ALR040003

Cc: Ms. Kacy Sable, EPA (via email)
Mr. Dan Ballard, City of Auburn (via email)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

DISCHARGE AUTHORIZED:	STORMWATER DISCHARGES FROM REGULATED SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
AREA OF COVERAGE:	THE STATE OF ALABAMA
PERMIT NUMBER:	ALR040003
RECEIVING WATERS:	ALL WATERS OF THE STATE OF ALABAMA

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1378 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.

ISSUANCE DATE:	SEPTEMBER 6, 2016
EFFECTIVE DATE:	OCTOBER 1, 2016
EXPIRATION DATE:	SEPTEMBER 30, 2021

GLENDA L. DEAN

Alabama Department of Environmental Management

Table of Contents

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PART I Coverage Under This General Permit

A. Permit Coverage

This permit covers the urbanized areas designated as a Phase II Municipal Separate Storm Sewer System (MS4) within the State of Alabama.

B. Authorized Discharges

1. This permit authorizes discharges of storm water from small MS4s, as defined in 40 CFR Part 122.26(b)(16). An entity may discharge under the terms and conditions of this general permit if the entity:
    a. Owns or operates a small MS4 within the permit area described in Section A;
    b. Is not a "large" or "medium" MS4 as described in 40 CFR Part 122.26(b)(4) or (7);
    c. Submits a Notice of Intent (NOI) in accordance with Part II of this general permit; and
    d. Either:
        i. Is located fully or partially within an urbanized area as determined by the latest Decennial Census by the Bureau of Census, or
        ii. Is designated for permit authorization by the Department pursuant to 40 CFR Part 122.32(a)(2).
2. This permit authorizes the following non-storm water discharges provided that they do not cause or contribute to a violation of water quality standards and that they have been determined not to be substantial contributors of pollutants to a particular small MS4 applying for coverage under this permit and that is implementing the storm water management program (SWMP) set forth in this permit:

    a. Water line flushing
    b. Landscape irrigation
    c. Diverted stream flows
    d. Uncontaminated ground water infiltration
    e. Uncontaminated pumped groundwater
    f. Discharges from potable water sources
    g. Foundation drains
    h. Air conditioning condensate
    i. Irrigation water (not consisting of treated, or untreated, wastewater)
    j. Rising ground water
    k. Springs
    l. Water from crawl space pumps
    m. Footing drains
    n. Lawn watering runoff
    o. Individual residential car washing, to include charitable carwashes

p. Residual street wash water
q. Discharge or flows from firefighting activities (including fire hydrant flushing)
r. Flows from riparian habitats and wetlands
s. Dechlorinated swimming pool discharges, and
t. Discharges authorized and in compliance with a separate NPDES permit.

C. Prohibited Discharges

The following discharges are not authorized by this permit:

1. Discharges that are mixed with sources of non-storm water unless such non-storm water discharges are:
   a. In compliance with a separate NPDES permit; or
   b. Determined by the Department not to be a significant contributor of pollutants to waters of the State;
2. Storm water discharges associated with industrial activity as defined in 40 CFR Part 122.26(b)(14)(i)-(ix) and (xi);
3. Storm water discharges associated with construction activity as defined in 40 CFR Part 122.26(b)(14)(x) or 40 CFR 122.26(b)(15) and subject to Alabama Department of Environmental Management (ADEM) Code r. 335-6-12;
4. Storm water discharges currently covered under another NPDES permit;
5. Discharges to territorial seas, contiguous zone, and the oceans unless such discharges are in compliance with the ocean discharge criteria of 40 CFR Part 125, Subpart M;
6. Discharges that would cause or contribute to instream exceedances of water quality standards; Your storm water management program plan (SWMPP) must include a description of the Best Management Practices (BMPs) that you will be using to ensure that this will not occur. The Department may require corrective action or an application for an individual permit if an MS4 is determined to cause an instream exceedance of water quality standards;
7. Discharges of any pollutant into any water for which a total maximum daily load (TMDL) has been approved or developed by EPA unless your discharge is consistent with the TMDL; This eligibility condition applies at the time you submit a NOI for coverage. If conditions change after you have permit coverage, you may remain covered by the permit provided you comply with the applicable requirements of Part V. You must incorporate any limitations, conditions and requirements applicable to your discharges, including monitoring frequency and reporting required, into your SWMPP in order to be eligible for permit coverage. For discharges not eligible for coverage under this permit, you must apply for and receive an individual or other applicable general NPDES permit prior to discharging;
8. This permit does not relieve entities that cause illicit discharges, including spills, of oils or hazardous substances, from responsibilities and liabilities under State and Federal law and regulations pertaining to those discharges.

D. Obtaining Authorization

1. To be authorized to discharge storm water from small MS4s, you must submit a Notice of Intent (NOI) and a description of your storm water management program (SWMP) in accordance with the deadlines presented in Part II of this permit.
2. You must submit the information required in Part II on the latest version of the NOI form (or photocopy thereof). Your NOI must be signed and dated in accordance with Part VII of this permit.
3. No discharge under the general permit may commence until the discharger receives the Department's acknowledgement of the NOI and approval of the coverage of the discharge by the general permit. The Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit based on a review of the NOI.
4. Where the operator changes, or where a new operator is added after submittal of an NOI under Part II, a new NOI must be submitted in accordance with Part II within thirty (30) days of the change or addition.
5. For areas extended within your MS4 by the latest census or annexed into your MS4 area after you received coverage under this general permit, the first annual report submitted after the annexation must include the updates to your SWMP, as appropriate.

Note: If the Department notifies the dischargers (directly, by the public notice, or by making information available on the Internet) of other NOI form options that become available at a later date (e.g., electronic submission of forms), you may take advantage of those options to satisfy the NOI use and submittal requirements in Part II.

E. Implementation

1. This permit requires implementation of the MS4 Program under the State and Federal NPDES Regulations. MS4s shall modify their programs if and when water quality considerations warrant greater attention or prescriptiveness in specific components of the municipal program.
2. If a small MS4 operator implements the minimum control measures in 40 CFR 122.34(b) and the discharges are determined to cause or contribute to non-attainment of an applicable water quality standard as evidenced by the State of Alabama's 303(d) list or an EPA-approved or developed Total Maximum Daily Load (TMDL), the operator must tailor its BMPs within the scope of the six minimum control measures to address the pollutants of concern and implement permit requirements outlined in Part IV.D. and Part V of this permit.
3. Existing MS4s, unless otherwise stated within this permit, shall implement each of the minimum control measures outlined in Part III.B. of this permit immediately upon the effective date of coverage. Newly designated MS4s, unless otherwise stated in this permit, shall implement the minimum control measures outlined in Part III.B. of this permit within

365 days of the effective date of coverage. However, for newly designated MS4s, where new or revised ordinances are required to implement any of the minimum control measures, such ordinances shall be enacted within 730 days from the effective date of coverage.

PART II Notice of Intent (NOI) Requirements

A. Deadlines of Applications

1. If you are automatically designated under 40 CFR Part 122.32(a)(1) or designated by the Department, then to request recoverage, you are required to submit an NOI or an application for an individual permit and a description of your SWMP at least 90 days before the expiration of this permit.
2. If you are designated by the Department after the date of permit issuance, then you are required to submit an NOI or an application for an individual permit and a description of your SWMP within 180 days upon notification. Within six months of initial issuance, the operator of the regulated small MS4 shall submit a storm water management program plan (SWMPP) to the Department for review. A SWMPP can be submitted electronically in a .PDF format, or in another prescribed manner acceptable to the Department that contains all necessary components
3. You are not prohibited from submitting an NOI after the dates provided in Part II.A.1-2. If a NOI is submitted after the dates provided in Part II.A.1-2., your authorization is only for discharges that occur after permit coverage is granted. The Department reserves the right to take appropriate enforcement actions for any unpermitted discharges.
4. Within three months of the date of re-issuance of coverage under this permit, all operators of regulated small MS4s shall submit a revised storm water management program plan (SWMPP) to the Department for review.
5. **On or after December 21, 2020, all NOIs shall be made electronically in a prescribed manner acceptable to the Department.**

B. Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the ADEM Code r. 335-6-6 and remain in force and effect if the Permittee re-applies for coverage as required under Part II of this Permit. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time you must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or
2. Issuance of an individual permit for your discharges; or
3. A formal permit decision by the Department not to reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

C. Contents of the Notice of Intent (NOI)

The Notice of Intent must be signed in accordance with Part VII.G of this permit and must include the following information:

1. Information on the Permittee:
    a. The name of the regulated entity, specifying the contact person and responsible official, mailing address, telephone number and email address; and
    b. An indication of whether you are a Federal, State, County, Municipal or other public entity.

2. Information on the MS4:
    a. the name of your organization, county, city, or town and the latitude/longitude of the center or the MS4 location;
    b. The name of the major receiving water(s) and an indication of whether any of your receiving waters are included on the latest 303(d) list, included in an EPA-approved and/or EPA developed total maximum daily load (TMDL) or otherwise designated by the Department as being impaired. If you have discharges to 303(d) or TMDL waters, a certification that your SWMPP complies with the requirements of Part V;
    c. If you are relying on another governmental entity, regulated under the storm water regulations (40 CFR Part 122.26 & 122.32) to satisfy one or more of your permit obligations (see Part III), the identity of that entity(ies) and the elements(s) they will be implementing. The Permittee remains responsible for compliance if the other entity fails to fully perform the permit obligation, and may be subject to enforcement action if neither the Permittee nor the other entity fully performs the permit obligation; and
    d. Must include if you are relying on the Department for enforcement of erosion and sediment controls on qualifying construction sites in accordance with Part III.B.3.b.

3. Include a brief summary of the best management practices (BMPs) for the minimum control measures in Part III of this permit (i.e. a brief summary of the MS4's SWMPP), your timeframe for implementing each of the BMPs, and the person or persons responsible for implementing or coordinating your SWMPP.

D. Where to Submit MS4 Documents

You are to submit your NOI or individual application, and a description of your SWMP as allowed under Part II.A., signed in accordance with the signatory requirements of Section VII of this permit, to the Department at the following address:

Alabama Department of Environmental Management
Water Division
Storm Water Management Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Water Division
Storm Water Management Branch
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

On or after December 21, 2020, all NOIs shall be made electronically in a prescribed manner acceptable to the Department.

PART III Storm Water Pollution Prevention and Management Program for Small MS4s

A. Storm Water Management Program (SWMP)

1. The Permittee is required to develop, revise, implement, maintain and enforce a storm water management program (SWMP) which shall include controls necessary to reduce the discharge of pollutants from its MS4 consistent with Section 402(p)(3)(B) of the Clean Water Act and 40 CFR Parts 122.30-122.37. These requirements shall be met by the development and implementation of a storm water management program plan (SWMPP) which addresses the best management practices (BMPs), control techniques and systems, design and engineering methods, public participation and education, monitoring, and other appropriate provisions designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP).
2. The Permittee shall provide and maintain adequate finance, staff, equipment, and support capabilities necessary to implement the SWMPP and comply with the requirements of this permit.
3. The SWMPP must address the minimum storm water control measures referenced in Part III.B. to include the following:
   a. A map of the Permittee's MS4 urbanized areas;
   b. The BMPs that will be implemented for each control measure. Low impact development/green infrastructure shall be considered where feasible. Information on LID/Green Infrastructure is available on the following websites: http://www.adem.alabama.gov/programs/water/waterforms/LIDHandbook.pdf and http://epa.gov/polwaste/green/index.cfm.
   c. The measureable goals for each of the minimum controls outlined in Part III.B.;
   d. The proposed schedule—including interim milestones, as appropriate, inspections, and the frequency of actions needed to fully implement each minimum control; and
   e. The person and/or persons responsible for implementing or coordination the BMPs for each separate minimum control measure.

4. Once the initial SWMPP is acknowledged by ADEM, activities and associated schedules outlined by the SWMPP or updates to the SWMPP are conditions of the permit.
5. Unless otherwise specified in this permit, the Permittee shall be in compliance with the conditions of this permit by the effective date of coverage.

B. Minimum Storm Water Control Measures

1. Public Education and Public Involvement on Storm Water Impacts

a. The Permittee must develop and implement a public education and outreach program to inform the community about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff to the MEP. The Permittee shall continuously implement this program in the areas served by the MS4. The Permittee shall also comply, at a minimum, with applicable State and local public notice requirements when implementing a public involvement/participation program.

b. The Permittee shall include within the SWMPP the methods for how it will:
   i. Seek and consider public input in the development, revision, and implementation of the SWMPP;
   ii. Identify targeted pollutant sources the Permittee's public education program is intended to address;
   iii. Specifically address the reduction of litter, floatables and debris from entering the MS4, that may include, but is not limited to:
      1. Establishing a program to support volunteer groups for labeling storm drain inlets and catch basins with "no dumping" message; and
      2. Posting signs referencing local codes that prohibit littering and illegal dumping at selected designated public access points to open channels, creeks, and other relevant waterbodies;
   iv. Inform and involve individuals and households about the steps they can take to reduce storm water pollution; and
   v. Inform and involve individuals and groups on how to participate in the storm water program (with activities that may include, but not limited to, local stream and lake restoration activities, storm water stenciling, advisory councils, watershed associations, committees, participation on rate structures, stewardship programs and environmental related activities). The target audiences and subject areas for the education program that are likely to have significant storm water impacts should include, but is not limited to, the following:
      1. General Public
         a. General impacts litter has on water bodies, how trash is delivered to streams via the MS4 and ways to reduce the litter;

b. General impacts of storm water flows into surface water from impervious surface; and
c. Source control BMPs in areas of pet waste, vehicle maintenance, landscaping and rain water reuse.

2. General Public, Businesses, Including Home-Based and Mobile Businesses
    a. BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials; and
    b. Impacts of illicit discharges and how to report them.

3. Homeowners, Landscapers, and Property Managers
    a. Yard care techniques that protect water quality;
    b. BMPs for use and storage of pesticides and fertilizers;
    c. BMPs for carpet cleaning and auto repair and maintenance;
    d. Runoff reduction techniques, which may include but not limited to site design, pervious paving, retention of forests, and mature trees; and
    e. Storm water pond maintenance.

4. Engineers, Contractors, Developers, Review Staff and Land Use Planners
    a. Technical standards for construction site sediment and erosion control;
    b. Storm water treatment and flow control BMPs;
    c. Impacts of increased storm water flows into receiving water bodies; and
    d. Run-off reduction techniques and low impact development (LID)/green infrastructure (GI) practices that may include, but not limited to, site design, pervious pavement, alternative parking lot design, retention of forests and mature trees to assist in storm water treatment and flow control BMPS.

vi. Evaluation of the effectiveness of the public education and public involvement program.

c. The Permittee shall report each year in the annual report the following information:
    i. A description of the activities used to involve groups and/or individuals in the development and implementation of the SWMPP;
    ii. A description of the individuals and groups targeted and how many groups and/or individuals participated in the programs;
    iii. A description of the activities used to address the reduction of litter, floatables and debris from entering the MS4 as required in Part III.B.1.b.iii.;

iv. A description of the communication mechanisms or advertisements used to inform the public and the quantity that were distributed (i.e. number of printed brochures, copies of newspapers, workshops, public service announcements, etc); and

v. Results of the evaluation of the public education and public involvement program as required in Part III.B.1.b.vi.

d. The Permittee shall make their SWMPP and their annual reports required under this permit available to the public when requested. The current SWMPP and the latest annual report should be posted on the Permittee's website, if available.

2. Illicit Discharge Detection and Elimination (IDDE) Program

a. The Permittee shall implement an ongoing program to detect and eliminate illicit discharges into the MS4, to the maximum extent practicable. The program shall include, at a minimum, the following:

i. An initial map shall be provided in the SWMPP with updates, if any, provided each year in the annual report. The map shall include, at a minimum:

1. The latitude/longitude of all known outfalls;
2. The names of all waters of the State that receive discharges from these outfalls; and,
3. Structural BMPs owned, operated, or maintained by the Permittee.

ii. To the extent allowable under State law, an ordinance or other regulatory mechanism that effectively prohibits non-storm water discharges to the MS4. The ordinance or other regulatory mechanism shall be reviewed annually and updated as necessary and shall:

1. Include escalating enforcement procedures and actions; and
2. Require the removal of illicit discharges and the immediate cessation of improper disposal practices upon identification of responsible parties. Where the removal of illicit discharge within ten (10) working days is not possible, the ordinance shall require an expeditious schedule for removal of the discharge. In the interim, the ordinance shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.

iii. A dry weather screening program designed to detect and address non-storm water discharges to the MS4. This program must address, at a minimum, dry weather screening of fifteen percent (15%) of the outfalls once per year with all (100 percent) screened at least once per five years. Priority areas, as described by the Permittee in the SWMPP, will be dry weather screened on a more frequent schedule as outlined in the SWMPP. If any indication of a suspected illicit discharge, from an unidentified source, is observed during the dry weather screening, then the Permittee shall follow the screening protocol as outlined in the SWMPP.

iv. Procedures for tracing the source of a suspect illicit discharge as outlined in the SWMPP. At a minimum, these procedures will be followed to investigate portions of the MS4 that, based on the results of the field screening or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.

v. Procedures for eliminating an illicit discharge as outlined in the SWMPP;

vi. Procedures to notify ADEM of a suspect illicit discharge entering the Permittee's MS4 from an adjacent MS4 as outlined in the SWMPP;

vii. A mechanism for the public to report illicit discharges discovered within the Permittee's MS4 and procedures for appropriate investigation of such reports;

viii. A training program for appropriate personnel on identification, reporting, and corrective action of illicit discharges;

ix. Address the following categories of non-storm discharges or flows (i.e., illicit discharges) only if the Permittee or the Department identifies them as significant contributors of pollutants to your small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering run-off, individual residential car washing, flows from riparian habitats and wetlands, discharge or flows from firefighting activities (to include fire hydrant flushing); dechlorinated swimming pool discharges, and residual street wash water, discharge authorized by and in compliance with a separate NPDES permit; and

x. The Permittee may also develop a list of other similar occasional incidental non- storm water discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non- storm water discharges must not be reasonably expected (based on information available to the Permittees) to be significant sources of pollutants to the municipal separate storm sewer system, because of either the nature of the discharges or conditions you have established for allowing these discharges to your MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to impaired waterbodies, BMPs on the wash water, etc.). You must document in your SWMPP any local controls or conditions placed on the discharges. The Permittee must include a provision prohibiting any individual non- storm water discharge that is determined to be contributing significant amounts of pollutants to your MS4.

b. The Permittee shall report each year in the annual report the following information:
   i. List of outfalls observed during the dry weather screening;
   ii. Updated MS4 map(s) unless there are no changes to the map that was previously submitted. When there are no changes to the map, the annual report must state this;
   iii. Copies of, or a link to, the IDDE ordinance or other regulatory mechanism; and
   iv. The number of illicit discharges investigated, the screening results, and the summary of corrective actions taken to include dates and timeframe of response.

3. Construction Site Storm Water Runoff Control

a. The Permittee must develop/revise, implement and enforce an ongoing program to reduce, to the maximum extent practicable, the pollutants in any storm water runoff to the MS4 from qualifying construction sites. The program shall include the following at a minimum:
   i. Specific procedures for construction site plan (including erosion prevention and sediment controls) review and approval: The MS4 procedures must include an evaluation of plan completeness and overall BMP effectiveness;
   ii. To the extent allowable under State law, an ordinance or other regulatory mechanism to require erosion and sediment controls, sanctions to ensure compliance, and to provide all other authorities needed to implement the requirements of Part III.B.3 of this permit;
   iii. A training program for MS4 site inspection staff in the identification of appropriate construction best management practices (example: QCI training in accordance with ADEM Admin Code. R. 335-6-12 or the Alabama Construction Site General Permit);
   iv. Procedures for the periodic inspection of qualifying construction sites to verify the use of appropriate erosion and sediment control practices that are consistent with the <u>Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management on Construction Sites and Urban Areas</u> published by the Alabama Soil and Water Conservation Committee (hereinafter the "Alabama Handbook"). The frequency and prioritization of inspection activities shall be documented in the SWMPP and must include a minimum inspection frequency of once each month for priority construction sites;
   v. Procedures, as outlined in the SWMPP, to notify ADEM of construction sites that do not have a NPDES permit or ineffective BMPs that are discovered during the periodic inspections. The notification must provide,

at a minimum, the specific location of the construction project, the name and contact information from the owner or operator, and a summary of the site deficiencies; and

vi. A mechanism for the public to report complaints regarding discharges from qualifying construction sites.

b. ADEM implements a State-wide NPDES construction storm water regulatory program. As provided by 40 CFR Part 122.35(b), the Permittee may rely on ADEM for the setting of standards for appropriate erosion controls and sediment controls for qualifying construction sites and for enforcement of such controls, and must document this in its SWMPP. If the Permittee elects not to rely on ADEM's program, then the Permittee must include the following, at a minimum, in its SWMPP:

   i. Requirements for construction site operators to implement appropriate erosion and sediment control BMPs consistent with the Alabama Handbook for Erosion Control, Sediment Control, And Stormwater Management on Construction Sites and Urban Areas published by the Alabama Soil and Water Conservation Committee (hereinafter the "Alabama Handbook");
   ii. Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
   iii. Development and implementation of an enforcement strategy that includes escalating enforcement remedies to respond to issues of non-compliance;
   iv. An enforcement tracking system designed to record instances of non-compliance and the MS4's responding actions. The enforcement case documentation should include:
      1. Name of owner/operator
      2. Location of construction project or industrial facility
      3. Description of violations
      4. Required schedule for returning to compliance
      5. Description of enforcement response used, including escalated responses if repeat violation occur or violations are not resolved in a timely manner;
      6. Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violation, etc);
      7. Any referrals to different departments or agencies; and
      8. Date violation was resolved
   v. The Permittee must keep records of all inspections (i.e. inspection reports) and employee training required by Part III.3.a.

c. The Permittee shall include within the SWMPP the following information:
   i. Procedures for site plan reviews as required by Part III.B.3.a.i;
   ii. A copy or link of the ordinance or other regulatory mechanism required by Part III.B.3.a.ii.;

iii. Plans for the training of MS4 site inspection staff as required by Part III.B.3.a.iii; and

iv. A site inspection plan meeting the requirements of Part III.B.3.a.iv; and

d. The Permittee shall maintain the following information and make it available upon request:

i. Documentation of all inspections conducted of qualifying construction sites as required by Part III.B.3.a.iv. The inspection documentation shall include, at a minimum, the following:

1. Facility type;
2. Inspection date;
3. Name and signature of inspector;
4. Location of construction project;
5. Owner/operator information (name, address, phone number, email);
6. Description of the storm water BMP condition that may include, but not limited to, the quality of vegetation and soils, inlet and outlet channels and structures, embankments, slopes and safety benches, spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures; and
7. Photographic documentation of any issues and/or concerns.

ii. Documentation of referrals of noncompliant construction sites and/or enforcement actions taken at construction sites to include, at a minimum, the following:

1. Name of owner/operator
2. Location of construction project;
3. Description of violation;
4. Required schedule for returning to compliance;
5. Description of enforcement response used, including escalated responses if repeat violations occur; and
6. Accompanying documentation of enforcement responses (e.g. notices of non-compliance, notices of violations, etc).

iii. Records of public complaints including:

1. Date, time and description of the complaint;
2. Location of subject construction sites; and
3. Identification of any actions taken (e.g. inspections, enforcement, corrections). Identifying information must be sufficient to cross-reference inspection and enforcement records.

e. The Permittee shall report each year in the annual report the following information:

i. A description of any completed or planned revisions to the ordinance or regulatory mechanism required by Part III.B.3.a.i and the most recent copy, or a link to the ordinance; and

ii. List of all active construction sites within the MS4 to include the following summary:

1. Number of construction site inspections;
2. Number of non-compliant construction site referrals and/or enforcement actions and description of violations;
3. Number of construction site runoff complaints received; and
4. Number of MS4 staff/inspectors trained.

4. Post-Construction Storm Water Management in New Development and Redevelopment

a. Post-construction storm water management refers to the activities that take place after construction occurs, and includes structural and non-structural controls including low-impact development and green infrastructure practices to obtain permanent storm water management over the life of the property's use. These post construction controls should be considered during the initial site development planning phase.

i. The Permittee must develop/revise, implement, and enforce a program to address storm water runoff from qualifying new development and redevelopment projects, to the maximum extent practicable. This program shall ensure that controls are in place to prevent or minimize water quality impacts. Specifically, the Permittee shall:

1. Develop/revise and outline in the SWMPP procedures for the site-plan review and approval process and a required re-approval process when changes to post-construction controls are required; and
2. Develop/revise and outline in the SWMPP procedures for a post-construction process to demonstrate and document that post-construction storm water measures have been installed per design specifications, which includes enforceable procedures for bringing noncompliant projects into compliance.

ii. The Permittee must develop and implement strategies which may include a combination of structural and/or non-structural BMPs designed to ensure, to the maximum extent practicable, that the volume and velocity of pre-construction stormwater runoff is not significantly exceeded. A design rainfall event with an intensity up to that of a 2yr-24hr storm event shall be the basis for the design and implementation of post- construction BMPs.

iii. To the extent allowable under State law, the Permittee must develop and institute the use of an ordinance or other regulatory mechanism to address post-construction runoff from qualifying new development and redevelopment projects.

iv. The Permittee must require adequate long-term operation and maintenance of BMPs. One or more of the following as applicable:

1. The developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; and/or
2. Written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; and/or
3. Written conditions in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control management practices; and/or
4. Any other legally enforceable agreement that assigns permanent responsibility for maintenance of structural or treatment control management practices.

v. The Permittee shall perform or require the performance of post-construction inspections, at a minimum of once per year, to confirm that post-construction BMP's are functioning as designed. The Permittee shall include an inspection schedule, to include inspection frequency, within the SWMPP.

vi. The Permittee shall maintain or require the developer/owner/operator to keep records of post-construction inspections, maintenance activities and make them available to the Department upon request and require corrective actions to poorly functioning or inadequately maintained post-construction BMP's.

vii. The Permittee shall review and evaluate policies and ordinances related to building codes, or other local regulations, with a goal of identifying regulatory and policy impediments to the installation of green infrastructure and low-impact development techniques.

b. The Permittee shall report each year in the annual report the following information:
   i. Copies of, or link to, the ordinance or other regulatory mechanism required by Part III.B.4.a.iii;
   ii. A list of the post-construction structural controls installed and inspected during the permit year;
   iii. Updated inventory of post-construction structural controls including those owned by the Permittee;
   iv. Number of inspections performed on post-construction structural controls; and,
   v. Summary of enforcement actions.

5. Pollution Prevention/Good Housekeeping for Municipal Operations

a. The Permittee shall develop, implement, and maintain a program that will prevent or reduce the discharge of pollutants in storm water run-off from municipal operations to the maximum extent practicable. The program elements shall include, at a minimum, the following:

i. An inventory of all municipal facilities, including municipal facilities that have the potential to discharge pollutants via storm water runoff;

ii. Strategies for the implementation of BMPs to reduce litter, floatables and debris from entering the MS4 and evaluate those BMPs annually to determine their effectiveness. If a BMP is determined to be ineffective or infeasible, then the BMP must be modified. The Permittee shall also develop a plan to remove litter, floatable and debris material from the MS4, including proper disposal of waste removed from the system;

iii. A Standard Operating Procedures (SOP) detailing good housekeeping practices to be employed at appropriate municipal facilities and during municipal operations that may include, but not limited to, the following:

1. Equipment washing;
2. Street sweeping;
3. Maintenance of municipal roads including public streets, roads, and highways, including but not limited to unpaved roads, owned, operated, or under the responsibility of the Permittee;
4. Storage and disposal of chemicals, Pesticide, Herbicide and Fertilizers (PHFs) and waste materials;
5. Vegetation control, cutting, removal, and disposal of the cuttings;
6. Vehicle fleets/equipment maintenance and repair;
7. External Building maintenance; and
8. Materials storage facilities and storage yards.

iv. A program for inspecting municipal facilities for good housekeeping practices, including BMPs. The program shall include checklists and procedures for correcting noted deficiencies;

v. A training program for municipal facility staff in good housekeeping practices as outlined in the SOP developed pursuant to Part III.B.5.a.iii; and

b. The Permittee shall include within the SWMPP the following information:

i. The inventory of municipal facilities required by Part III.B.5.a.i;

ii. Schedule for developing the SOP of good housekeeping practices required by Part III.B.5.a.iii;

iii. An inspection plan and schedule, including checklists and any other materials needed to comply with Part III.B.5.a.iv; and

iv. A description of the training program and training schedule required by Part III.B.5.a.v.

c. The Permittee shall report each year in the annual report the following information:

i. Any updates to the municipal facility inventory;

ii. An estimated amount of floatable material collected from the MS4 as required by Part III.B.5.a.ii;

iii. Any updates to the inspection plan

iv. The number of inspections conducted; and

v. Any updates to the SOP of good housekeeping practices.

d. The Permittee shall maintain the following information and make it available upon request:

i. Records of inspections and corrective actions, if any; and
ii. Training records including the dates of each training activities and names of personnel in attendance.

PART IV Special Conditions

A. Responsibilities of the Permittee

1. If the Permittee is relying on another entity to satisfy one or more requirements of this permit, then the Permittee must note that fact in the SWMPP. The Permittee remains responsible for compliance with all requirements of this permit, except as provided by Part III.B.3.b and reliance on another entity will not be a defense or justification for non-compliance if the entity fails to implement the permit requirements.
2. If the Permittee is relying on the Department for the enforcement of erosion and sediment controls on qualifying construction sites and has included that information in the SWMPP as required by Part III.A.3.e., the Permittee is not responsible for implementing the requirements of Part III.B.3.b of this permit as long as the Department receives notification of non-compliant qualifying constructions sites from the Permittee as required by Part III.B.3.a.v.

B. SWMPP Plan Review and Modification

1. The Permittee shall submit a SWMPP and/or revised SWMPP to the Department as required by Part II.A of the permit. The Permittee shall implement plans to seek and consider public input in the development, revision and implementation of this SWMPP, as required by Part III.B.1.b.i. Thereafter, the Permittee shall perform an annual review of the current SWMPP and must revise the SWMPP, as necessary, to maintain compliance with the permit. Any revisions to the SWMPP shall be submitted to the Department at the time a revision is made for the Department review. Revisions made to the SWMPP may include, but are not limited to, the replacement of ineffective or infeasible BMPs or the addition of components, controls and requirements; and
2. The Permittee shall implement the SWMPP on all new areas added to their municipal separate storm sewer system (or for which they become responsible for implementation of storm water quality controls) as soon as practicable, but not later than one (1) year from addition of the new areas. Implementation of the program in any new area shall consider the plans of the SWMPP of the previous MS4 ownership, if any.

C. Discharge Compliance with Water Quality Standards

This general permit requires, at a minimum, that the Permittee develop, implement and enforce a storm water management program designed to reduce the discharge of pollutants to the maximum extent practicable. Full implementation of BMPs, using all known, available, and reasonable methods of prevention, control and treatment to prevent and control storm water pollution from entering waters of the State of Alabama is considered an acceptable effort to reduce pollutants from the municipal storm drain system to be the maximum extent practicable.

D. Impaired Waters and Total Maximum Daily Loads (TMDLs)

1. The Permittee must determine whether the discharge from any part of the MS4 contributes directly or indirectly to a waterbody that is included on the latest §303(d) list or designated by the Department as impaired;

2. If the Permittee's MS4 discharges to a waterbody included on the latest §303(d) or designated by the Department as impaired, it must demonstrate the discharges, as controlled by the Permittee, do not cause or contribute to the impairment. The SWMPP must detail the BMPs that are being utilized to control discharges of pollutants associated with the impairment. If existing BMPs are not sufficient to achieve this demonstration, the Permittee must, within six (6) months following the publication of the latest final §303(d) list, Department designation, or the effective date of this permit, submit a revised SWMPP detailing new or modified BMPs. The SWMPP must be revised as directed by the Department and the new or modified BMPs must be implemented within one year from the publication of the latest final §303(d) list or Department designation.

3. Permittees discharging from MS4s into waters with EPA-Approved TMDLs and/or EPA-Established TMDLs

    a. The Permittee must determine whether its MS4 discharges to a waterbody for which a total maximum daily load (TMDL) has been established or approved by EPA. If an MS4 discharges into a water body with an EPA approved or established TMDL, then the SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If additional BMPs will be necessary to meet the requirements of the TMDL, the SWMPP must include a schedule for installation and/or implementation of such BMPs. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

    b. If, during this permit cycle, a TMDL is approved by EPA or a TMDL is established by EPA for any waterbody into which an MS4 discharges, the Permittee must review the applicable TMDL to see if it includes requirements for control of storm water discharges from the MS4.

        1. If it is found that the Permittee must implement specific allocations of the TMDL, it must assess whether the assumptions and requirements of the TMDL are being met through implementation of existing BMPs or if additional BMPs are necessary. The SWMPP must include BMPs targeted to meet the assumptions and requirements of the TMDL. If existing BMPs are not sufficient, the Permittee must, within six (6)

months following the approval or establishment of the TMDL by EPA, submit a revised SWMPP detailing new or modified BMPs to be utilized along with a schedule of installation and/or implementation of such BMPs. Any new or modified BMPs must be implemented within one year, unless an alternate date is approved by the Department, from the establishment or approval of the TMDL by EPA. A monitoring component to assess the effectiveness of the BMPs in achieving the TMDL requirements must also be included in the SWMPP. Monitoring can entail a number of activities including, but not limited to: outfall monitoring, in-stream monitoring, and/or modeling. Monitoring data, along with an analysis of this data, shall be included in the Annual Report.

E. Requiring an Individual Permit

The Department may require any person authorized by this permit to apply for and/or obtain an individual NPDES permit. When the Department requires application for an individual NPDES permit, the Department will notify the Permittee in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application from and a statement setting a deadline for the Permittee to file the application.

PART V Monitoring and Reporting

1. If there are no 303(d) listed or TMDL waters located within the Permittee's MS4 area, no monitoring shall be required. The SWMPP shall include a determination stating if monitoring is required.
2. If a waterbody within the MS4 jurisdiction is listed on the latest final §303(d) list, or otherwise designated impaired by the Department, or for which a TMDL is approved or established by EPA, during this permit cycle, then the Permittee must implement a monitoring program, within 6 months, to include monitoring that addresses the impairment or TMDL. A monitoring plan shall be included in the SWMPP and any revisions to the monitoring program shall be documented in the SWMPP and Annual Report.
3. Proposed monitoring locations, and monitoring frequency shall be described in the monitoring plan with actual locations described in the annual report;
4. The Permittee must include in the monitoring program any parameters attributed with the latest final §303(d) list or otherwise designated by the Department as impaired or are included in an EPA-approved or EPA-established TMDL;
5. Analysis and collection of samples shall be done in accordance with the methods specified at 40 CFR Part 136. Where an approved 40 CFR Part 136 does not exist, then a Department approved alternative method may be used;
6. If the Permittee is unable to collect samples due to adverse conditions, the Permittee must submit a description of why samples could not be collected, including available documentation of the event. An adverse climatic condition which may prohibit the collection of samples includes weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.)

or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.);

7. Monitoring results must be reported with the subsequent Annual Report and shall include the following monitoring information:

    a. The date, latitude/longitude of location, and time of sampling;
    b. The name(s) of the individual(s) who performed the sampling;
    c. The date(s) analysis were performed;
    d. The name(s) of individuals who performed the analysis;
    e. The analytical techniques or methods used; and
    f. The results of such analysis.

PART VI Annual Reporting Requirements

1. The Permittee shall submit to the Department an annual report (1 hardcopy and 1 electronic copy) no later than May 31st of each year. The annual report shall cover the previous April 1 to March 31. If an entity comes under coverage for the first time after the issuance of this permit, then the first annual report should cover the time coverage begins until March 31st of subsequent year.
2. **On or after December 21, 2020, all annual reports shall be submitted to the Department electronically in a prescribed manner acceptable to the Department.**
3. The Permittee shall sign and certify the annual report in accordance with Part VII.G.
4. The annual report shall include the following information, at a minimum, and in addition to those requirements referenced in Part III-V:

    a. A list of contacts and responsible parties (e.g.: agency, name, phone number, address, & email address) who had input to and are responsible for the preparation of the annual report;
    b. Overall evaluation of the storm water management program developments and progress for the following:
        i. Major accomplishments;
        ii. Overall program strengths/weaknesses;
        iii. Future direction of the program;
        iv. Overall determination of the effectiveness of the SWMPP taking into account water quality/watershed improvements;
        v. Measureable goals that were not performed and reasons why the goals were not accomplished; and
        vi. If monitoring is required, evaluation of the monitoring data.
    c. Narrative report of all minimum storm water control measures referenced in Part III.B of this permit. The activities shall be discussed as follows:
        i. Minimum control measures completed and in progress;
        ii. Assessment of the controls; and
        iii. Discussion of proposed BMP revisions or any identified measureable goals that apply to the minimum storm water control measures.

d. Summary table of the storm water controls that are planned/scheduled for the next reporting cycle;
e. Results of information collected and analyzed, if any, during the reporting period, including any monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP.
f. Notice of reliance on another entity to satisfy some of your permit obligations; and
g. If monitoring is required, all monitoring results collected during the previous year in accordance with Part V, if applicable. The monitoring results shall be submitted in a format acceptable to the Department.

PART VII Standard and General Permit Conditions

A. Duty to Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is ground for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

B. Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the ADEM Code r. 335-6-6 and remain in force and effect if the Permittee re-applies for coverage as required under Part II of this Permit. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

1. Reissuance or replacement of this permit, at which time you must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or
2. Issuance of an individual permit for your discharges; or
3. A formal permit decision by the Department not to reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

C. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, suspending, or terminating the permit or to determine compliance with the permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by the permit.

F. Other Information

If you become aware that you have failed to submit any relevant facts in your Notice of Intent or submitted incorrect information in the Notice of Intent or in any other report to the Department, you must promptly submit such facts or information.

G. Signatory Requirements

All Notices of Intent, reports, certifications, or information submitted to the Department, or that this permit requires be maintained by you shall be signed and certified as follows:

1. Notice of Intent. All Notices of Intent shall be signed by a responsible official as set forth in ADEM Admin. Code r. 335-6-6-.09.
2. Reports and other information. All reports required by the permit and other information requested by the Department or authorized representative of the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
    a. Signed authorization. The authorization is made in writing by a person described above and submitted to the Department.
    b. Authorization with specified responsibility. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility for environmental matters for the regulated entity.
3. Changes to authorization. If an authorization is no longer accurate because a different operator has the responsibility for the overall operation of the MS4, a new authorization satisfying the requirement of Part VII.G.2.b. above must be submitted to the Department prior to or together with any reports or information, and to be signed by an authorized representative.
4. Certification. Any person signing documents under Part VII.G.1-2. above shall make the following certification:

    "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 gathered and evaluated 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 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 fine and imprisonment for knowing violations."

H. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor it does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

I. Proper Operation and Maintenance

You must at all time properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit and with the conditions of your SWMPP. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by you only when the operation is necessary to achieve compliance with the conditions of the permit.

J. Inspection and Entry

1. You must allow the Department or an authorized representative upon the presentation of credentials and other documents as may be required by law, to do any of the following:
    a. Enter your premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
    b. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

K. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

L. Permit Transfers

This permit is not transferable to any person except after notice to the Department. The Department may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Act.

M. Anticipated Noncompliance

You must give advance notice to the Department of any planned changes in the permitted small MS4 or activity which may result in noncompliance with this permit.

N. Compliance with Statutes and Rules

1. The permit is issued under ADEM Admin. Code r. 335-6-6. All provisions of this chapter that are applicable to this permit are hereby made a part of this permit.
2. This permit does not authorize the noncompliance with or violation of any laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws.

O. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall be affected thereby.

P. Bypass Prohibition

Bypass (see 40 CFR 122.41(m)) is prohibited and enforcement action may be taken against a regulated entity for a bypass; unless:

1. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during the normal periods of equipment downtime. This condition is not satisfied if the regulated entity should, in the exercise of reasonable engineering judgment, have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance.
3. The Permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the Permittee is granted such authorization, and the Permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.

The Permittee has the burden of establishing that each of the conditions of Part VII.P. have been met to qualify for an exception to the general prohibition against bypassing and an exemption, where applicable, from the discharge specified in this permit.

Q. Upset Conditions

An upset (see 40 CFR 122.41(n)) constitutes an affirmative defense to an action brought for noncompliance with technology-based permit limitations if a regulated entity shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

1. An upset occurred and the Permittee can identify the specific cause(s) of the upset;
2. The Permittee's facility was being properly operated at the time of the upset; and
3. The Permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

The Permittee has the burden of establishing that each of the conditions of Part VII.Q. of this permit have been met to qualify for an exemption from the discharge specified in this permit.

R. Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to ADEM Admin. Code r. 335-6-6-.17.

S. Re-opener Clause

If there is evidence indicating potential or realized impacts on water quality due to storm water discharge covered by this permit, the regulated entity may be required to obtain an individual permit or an alternative general permit or the permit may be modified to include different limitations and/or requirements.

T. Retention of Records

1. The Permittee shall retain the storm water quality management program developed in accordance with Part III-V of this permit until at least five years after coverage under this permit terminates.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
3. The Permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of reports required by this permit, and records of all data used to

complete the application of this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended at the request of the Director at any time.

U. Monitoring Methods

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

V. Additional Monitoring by the Permittee

If the Permittee monitors more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the monitoring report. Such increased monitoring frequency shall also be indicated on the monitoring report.

W. Definitions

1. Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
2. Control Measure as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the State.
3. CWA or The Act means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.
4. Department means the Alabama Department of Environmental Management or an authorized representative.
5. Discharge, when used without a qualifier, refers to "discharge of a pollutant" as defined as ADEM Admin. Code r. 335-6-6-.02(m).
6. Green Infrastructure refers to systems and practices that use or mimic natural processes to infiltrate, evapotranspirate (the return of water to the atmosphere either through evaporation or by plants), or reuse storm water or runoff on the site where it is generated.
7. Illicit Connection means any man-made conveyance connecting an illicit discharge directly to municipal separate storm sewer.
8. Illicit Discharge is defined at 40 CFR Part 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities.
9. Indian Country, as defined in 18 USC 1151, means (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State, and (c) all Indian allotments, the Indian titles to which have

not been extinguished, including rights-of-way running through the same. This definition includes all land held in trust for an Indian tribe.

10. Infiltration means water other than wastewater that enters a sewer system, including foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.
11. Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.
12. Large municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 250,000 or more as determined by the latest decennial census.
13. Low Impact Development (LID) is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat storm water as a resource rather than a waste product.
14. Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more but less than 250,000 as determined by the latest decennial census.
15. MEP is an acronym for "Maximum Extent Practicable," the technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA Section 402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR Part 122.34.
16. MS4 is an acronym for "Municipal Separate Storm Sewer System" and is used to refer to either a large, medium, or small municipal separate storm sewer system. The term is used to refer to either the system operated by a single entity or a group of systems within an area that are operated by multiple entities.
17. Municipal Separate Storm System is defined at 40 CFR Part 122.26(b)(8) and means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined in ADEM Admin. Code r. 335-6-6-.02(nn).
18. NOI is an acronym for "Notice of Intent" to be covered by this permit and is the mechanism used to "register" for coverage under a general permit.
19. Permittee means each individual co-applicant for an NPDES permit who is only responsible for permit conditions relating to the discharge that they own or operate.
20. Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling

stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

21. Priority construction site means any qualifying construction site in an area where the MS4 discharges to a waterbody which is listed on the most recently approved 303(d) list of impaired waters for turbidity, siltation, or sedimentation, any waterbody for which a TMDL has been finalized or approved by EPA for turbidity, siltation, or sedimentation, and any waterbody assigned specific water quality criteria, such as Outstanding Alabama Water use classification, in accordance with ADEM Admin. Code r. 335-6-10-.09 and any waterbody assigned a special designation in accordance with ADEM Admin. Code r. 335-6-10-.10.
22. Qualifying Construction Site means any construction activity that results in a total land disturbance of one or more acres and activities that disturb less than one acre but are part of a larger common plan of development or sale that would disturb one or more acres. Qualifying construction sites do not include land disturbance conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission.
23. Qualifying New Development and Redevelopment means any site that results from the disturbance of one acre or more of land or the disturbance of less than one acre of land if part of a larger common plan of development or sale that is greater than one acre. Qualifying new development and redevelopment does not include land disturbances conducted by entities under the jurisdiction and supervision of the Alabama Public Service Commission.
24. Small municipal separate storm sewer system is defined at 40 CFR Part 122.26(b)(16) and refers to all separate storm sewers that are owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to water of the United States, but is not defined as "large" or "medium" municipal separate storm sewer system. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.
25. Storm water is defined at 40 CFR Part 122.26(b) (13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.
26. Storm Water Management Program (SWMP) refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system.
27. SWMP is an acronym for "Storm Water Management Program."
28. Total Maximum Daily Load (TMDL) means the calculated maximum permissible pollutant loading to a waterbody at which water quality standards can be maintained. The sum of wasteload allocations (WLAs) and load allocations (LAs) for any given pollutant.

29. You and Your as used in this permit is intended to refer to the Permittee, the operator, or the discharger as the context indicates and that party's responsibilities (e.g., the city, the country, the flood control district, the U.S. Air Force, etc.).

APPENDIX B

URBANIZED AREA MAP

City of Auburn Urban Area and Storm Sewer Stats

Auburn, Alabama Urbanized Area	59.30 Sq. Miles
Auburn City Limits within Urbanized Area	26.80 Sq. Miles
Estimated Storm Sewer Main	*135 Linear Miles
Extent Storm Sewer Surveyed in 2017	7.93 Linear Miles
Hydrology	
Stream in City Limits	286 Linear Miles
Ponds/Lakes in City Limits	667 Impoundments
Wetlands in City Limits	370+ Acres

APPENDIX C

NEWSPAPER PUBLICATIONS - 2017

http://www.oanow.com/news/local/auburn-city-council-approves-grant-to-complete-single-stream-recycling/article_5eaf3c8d-2e11-5671-8dd7-34e511e2bd36.html

Auburn City Council approves grant to complete single-stream recycling

Carla Nelson | Reporter
Opelika-Auburn News
cnelson@oanow.com Feb 7, 2018

The Auburn City Council will vote tonight whether to authorize grant applications to complete the rollout of the single-stream recycling program this year.

File photo / City of Auburn

The Auburn City Council approved agenda items Tuesday related to curbside recycling and housing in northwest Auburn, but the majority of the time spent in council chambers focused on Thursday's Auburn Planning Commission meeting.

During the citizen's communication portion of the council meeting, several citizens spoke out saying the council had not discussed an amendment coming before the planning commission in-depth enough. Specifically, a planned amendment would increase the maximum structure height in the College Edge Overlay District from 65 feet to 75 feet.

Councilmembers themselves expressed confusion over the process of the height issue moving from the council to the planning commission. Councilmember Tommy Dawson said if the planning commission recommends the change it will come back before city council at its March 20 meeting.

“We have two more meetings to discuss this,” Dawson said. “I feel like that’s what needs to be done."

Grant approved

The council also voted to authorize a grant application to complete the rollout of the single-stream recycling program this year and utilization of Community Development Block Grant (CDBG) funds to purchase land for affordable housing in northwest Auburn.

The grant application to assist with single-stream recycling will be made through the Alabama Recycling Fund Program and Alabama Department of Environmental Management. If awarded, the funds would complete the purchase of single-stream recycling containers for the rest of the city.

Assistant City Manager Kevin Cowper said the response since the first phase of the single-stream recycling has been "fantastic."

“The number of inquiries from people who don’t have the recycling containers has really been through the roof and the demand seems to be really high,” he said. “This grant will allow us to buy somewhere between 6,000 and 7,000 recycling containers that will allow us to finish out the entire city with single-stream recycling.”

The approval of use of the CDBG funds will be used to purchase 2.2 acres at the northeast corner of Byrd Street and Tucker Avenue for the construction of affordable homes in northwest Auburn for purchase by low to moderate-income families.

Contracts and agreements on the agenda approved include:

> Purchase of two new truck chasis with side loaders for the Environmental Services Department for the curbside recycling program.

> Purchase of “stream mitigation credits” from the Broadview Mitigation Bank to offset the impact of construction of the forthcoming Public Safety Building to the Town Creek Watershed, as required by the permit obtained from the U.S. Army Corps of Engineers.

> A contract with D&J Enterprises for FY 2017 resurfacing of Bedell Avenue through CDBG funding.

> Replacement of the chiller feed and disconnect at the Development Services Building.

> Cured in Place Pipe Project (CIPP). The CIPP allows for rehabilitation of pipes through the pipe network without having to dig up pipes for repair or replacement.

> Richland Road Widening Project (Phase 1).

> Purchase of a Police Interceptor.

> Purchase of two pickup trucks for use by the Water Resource Management Department.

> Authorize an agreement to enable a technical assistance grant from the Alabama Forestry Commission through a partnership with the Green Infrastructure Center, Inc. This grant will allow the city to evaluate the city's urban tree canopy and other land cover characteristics to improve the city's strategic use of trees to better manage storm water and improve quality of life in urbanized areas.

> Approval of early payoff of a loan by the Auburn Housing Authority. The loan funds were for revitalization of the Moton Apartments.

CARLA NELSON

http://www.oanow.com/news/auburn-enacts-drought-watch-issues-voluntary-water-restrictions/article_dcb304c2-26d5-11e7-b3c7-bfa194264d1d.html

Auburn enacts drought watch, issues voluntary water restrictions

Staff reports Apr 21, 2017

File photo / OANews

The Auburn Water Works Board enacted a Phase I Drought Watch on Friday and is asking its customers to practice voluntary water restrictions.

On Wednesday, the Alabama Department of Economic and Community Affairs (ADECA) Office of Water Resources (OWR) issued a drought declaration for Alabama. The OWR listed Lee County in the “Advisory” drought declaration level.

Based on this declaration, as well as current conditions in Auburn, the Auburn Water Works Board is enacting a Phase I Drought Watch for its customers effective today, according to a release from the city of Auburn.

All residents are asked to restrict outdoor watering between 8 p.m. and 8 a.m. Customers with even numbered addresses should water on Mondays, Wednesdays and Fridays, and those with odd numbered addresses should water on Tuesdays, Thursdays and Saturdays.

There should be no outdoor watering on Sundays. The watch will remain in effect until further notice.

The Auburn Water Works Board is currently experiencing well above normal water demands because of persistent drought conditions in Lee County and above normal temperatures. Though the board has an ample supply of water for public health and emergency purposes, it is asking customers to be responsible stewards of natural resources and participate in voluntary restrictions to help control excessive water use and eliminate the need for mandatory restrictions.

The board is also asking customers to use the following steps to make the most efficient use of watering year round, especially during voluntary restrictions:

- Water at efficient times of the day to prevent evaporation due to heat and wind (after 8 p.m. and before 8 a.m.) Check your sprinkler timer and make adjustments as needed.
- Check sprinkler heads and adjust them as needed to keep water on your lawn, trees and shrubs and off the street, driveway and sidewalk.
- Check your sprinkler system for leaks and make repairs in a timely manner to minimize water losses.
- Do not leave manual sprinklers or hoses running unattended. If watering manually, use a kitchen timer to remind you to turn off the water.
- Eliminate washing houses or paved surfaces unless for public health or safety reasons.
- Repair water leaks and leaky toilets.

Customers are also reminded of the following steps to save water:

- Take shorter showers.
- Do not let the water run while brushing your teeth, washing your face or washing dishes by hand.
- Only run full loads of laundry or dishes.

For more information, contact the Water Resource Management Department at 334-501-3060.

http://www.oanow.com/auburn-hosting-water-workshop-tonight-for-residents/article_f7a252e8-9fe5-5aa1-8c02-bf64866b8bc8.html

Auburn hosting water workshop tonight for residents

Cynthia Williford | Reporter
Opelika-Auburn News
cwilliford@oanow.com
Follow on Twitter Apr 20, 2017

A lake at Asheton Park in Auburn is shown Wednesday. A workshop will be held tonight to educate citizens about watershed management in Auburn, a conversation sparked by discussion about lakes in the subdivision."

Buy Now

Todd Van Emst/tvemst@oanow.com

Auburn residents interested in learning more about managing water runoff and watershed on their property are invited to a workshop tonight, hosted by the city of Auburn and Ward 3 Councilperson Beth Witten.

The workshop was sparked by discussion between residents in Asheton Lakes and Asheton Park subdivisions in north Auburn and the city regarding upkeep of dams and beaver management in the neighborhoods.

Recently a beaver has built a dam along a creek that feeds into a pond in the subdivision that affects the flow of water into the lake, Witten said. Some residents are concerned about the affect the beavers' dams and new developments may have on the manmade dam between an upper and lower lake in the area.

"The question and the concern is, who's responsible to, A) remove the beavers, and, B) to insure that the manmade dam is maintained?" Witten said.

Some houses in the subdivision back up to a lake with the property line extending into the water. The manmade dam falls under the ownership of a couple different property owners, and therefore their care, but there is no specific maintenance requirement for private dams, lakes or ponds in the city's codes or in the state of Alabama, according to a memo from Watershed Division Manager Daniel Ballard.

Since the lake serves a dual purpose as a recreation lake and a retention pond, Witten said some residents believe the dam and lake area should be maintained by the city since developers were required by the city to create the lake.

Have to be mindful

"Those conversations spurred the need to have further education and also start the conversation about what do we need to look at as a city in insuring proper maintenance of lakes and ponds and streams and waterways for future developments within the city," Witten said. "Auburn has a lot of ponds and lakes and rivers and detention and retention, so there's a lot of water. With all these new developments, we've got to be mindful of how are we answering that question about protecting our waterways."

Part of the presentation will also pertain to practices all residents of Auburn can do to improve the storm water that flows into facilities such as the lakes at Asheton Lakes and storm water management facilities across the city, Ballard said. The presentation will also outline definitions of storm water management facilities, lakes and ponds to clarify the city's responsibilities and residents responsibilities.

"One thing we often like to say is our local water resources are a reflection of how we treat our local land," Ballard said. "Certainly everyone is a part of a watershed wherever you live. Your activities impact water quality wherever you are in our community. …Everyone needs to play their part and do their role in protecting our local water resources, not just for our community, but for our downstream neighbors as well."

Eve Brantley, an Auburn University professor and Alabama Cooperative Extension water specialist, will also speak about ways homeowners can manage storm water while improving natural resources' health. Ballard will also outline resources the city offers for residents in maintaining culverts and other options. Ballard and Public Works Director Jeff Ramsey will also be available for questions.

The meeting will be held at 6 p.m. in the City Meeting Room at 122 Tichenor Ave. and is open to all Auburn residents.

http://www.oanow.com/news/auburn-researchers-part-of-team-to-address-water-issues-in/article_dffbed09-6473-5976-b94a-84ed75bd6f42.html

Auburn researchers part of team to address water issues in the Southeast

Kara Coleman | Reporter
Opelika-Auburn News
kcoleman@oanow.com
Follow on Twitter Jun 28, 2017

Auburn is joining with three other Southeastern universities in a $5 million research effort to help ensure water for agricultural production while maintaining healthy rivers and springs.

Buy Now

(Auburn University submitted photo)

Auburn University is one of four schools who have been awarded part of a $5 million grant to research water issues faced by the Southeastern United States.

The research will focus on locking down water for agricultural production as well as maintaining healthy rivers and springs, according to a press release issued by the university.

"The project, funded by a five-year grant from the United States Department of Agriculture's National Institute of Food and Agriculture, seeks to safeguard the sustainability of agriculture and forestry while protecting water quantity, quality and habitat in the underground Floridian Aquifer and the springs and rivers it feeds," the release stated.

The Floridian Aquifer is a resource that provides water for 10 million people in Alabama, Georgia and Florida.

Two Auburn University researchers will be part of the initial 14 faculty members involved, said Paul Hollis, communications specialist for Auburn's College of Agriculture and the Alabama Agricultural Experiment Station.

"As the project progresses into the extension objectives, there will be more," Hollis said of the project, which is expected to go through 2022.

The two Auburn staffers who expect to see the project all the way through are Puneet Srivastava, biosystems engineering professor and director of Auburn's Water Resources Center, and Latif Kalin, a professor in the College of Forestry and Wildlife Sciences.

How Auburn is part of the team

One of the project's main objectives is to build a modeling platform to predict farm/forest- and regional-scale impacts of alternative land use and production practices on water quantity and quality as well as the economies of north Florida and south Georgia, according to a press release issued by the University of Florida.

Florida is spearheading the project, working in partnership with faculty from Auburn, the University of Georgia and Albany State University.

Auburn's role primarily is to build the prediction models, Hollis said.

"Researchers in Florida and Georgia will conduct experiments to develop farming practices that reduce water and fertilizer losses while still producing a profitable crop yield," according to the Auburn press release. "Based on this knowledge, faculty from Auburn and Florida will develop a set of interactive computer models with input from farms, advocates of springs and rivers, water managers and other interested stakeholders in the region."

These models will be used to predict impacts of land and water use and agricultural production practices on water quality and quantity and local economies.

"The south Georgia impacts will be directly transferrable to our stakeholders in Alabama," Srivastava said in the release.

The $5 million grant is not divided among the schools equally, but is collective funding for the project, Hollis said.

"It's more or less, instead of being a specific number, it's a pool to be drawn from," he said. "The universities are working together on the project. So as they get into it more, they'll know better what their needs are."

Kara Coleman

http://www.oanow.com/news/auburn/design-under-way-for-auburn-s-new-public-safety-complex/article_23832288-1da3-11e7-b81e-6b75487619d7.html

Design under way for Auburn's new public safety complex; city departments prepare for temporary relocation

Cynthia Williford | Reporter
Opelika-Auburn News
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Follow on Twitter Apr 10, 2017

A rendering of the new public safety complex facing Glenn Avenue.
Submitted Photo

Design work is under way on Auburn’s new public safety building that replaces the current Fire Station 1, and city staff are preparing for relocations and other projects to come before construction begins.

The Auburn City Council received an update on the new building during its committee of the whole meeting on last week. Work has been underway since October when the council approved a $1.2 million amendment to a contract with Seay, Seay & Litchfield PC to begin design work.

Architects are 35 percent complete with the design of the new building, which is expected to begin construction in December. It will house the city’s council chambers, municipal court, public safety administration, the police division and a new fire station.

The building is the first phase of work to revitalize the entire complex, which will include demolishing the existing council chambers and police department to create parking and green space.

New public safety building

The new building will include new council chambers with about 110 seats, around 90 fewer than the current council chambers. The room will have two large screens to give audience members a better view of presentations. City staffers will have designated seating, and a conference room will be situated behind the council’s seating for executive sessions or other meetings.

The municipal court will have a metal detector and cameras at the entrance for added security. The courtroom will have about 137 seats and will serve as an overflow for the council chambers, with video screens that could live-stream the meeting.

The new fire station will have two drive-through bays and two other bays for equipment, an area dedicated to public education and a fitness center. The second floor will serve as living quarters for staff, including study areas for student firefighters.

Part of the project will include adding a public meeting room in the rear of the existing public safety administration building, which will provide a larger space and more parking than the city's current public meeting room at City Hall.

Temporary relocations

Before work can begin, the city is relocating some offices currently in the Douglas J. Watson Municipal Complex including the narcotics section.

The city recently found the building, which sits behind and separate from the main building at the complex, is infested with termites. The city performed an emergency purchase to lease a temporary trailer for the detectives.

The temporary space will be set up at the Shug Jordan Public Safety Training Facility on Shug Jordan Parkway, where the detectives will remain until the new building is constructed.

Fire Station 1 will be relocated between June and August, but the city is still working to determine where the 13 firefighters, ladder truck and engine truck will be moved. Possible locations include on Auburn University's campus or at the Auburn Water Works Board property on West Samford Avenue.

New parking lot

The Carolyn Apartments on Glenn Avenue will be demolished before construction begins on the new building. The council approved the purchase of the apartments and the adjacent lot in September with the intent of incorporating it into the complex.

The space will be converted into parking lot with incorporated green spaces, according to Assistant City Manager Kevin Cowper. The lot is projected to open in November to create additional parking before construction begins on the new public safety building.

Preliminary designs show 90 to 95 spaces in the lot, but Cowper said that could change by the final stages of design. A bioretention pond will be built next to the lot, and permeable pavers will be incorporated into the lot to absorb storm water rather than running off. A decorative fence will screen the lot from Glenn Avenue.

“ We do plan to use this as a model for parking lot construction,” Cowper said. “We plan most for this to be used for folks to park to go to courts or go to development services, but we think it’s also possible that this will be used for people visiting downtown. It’s a little bit distant now, but the vision for downtown is that we will expand downtown and we’re doing that by infrastructure.”

The sidewalk from Ross to Burton Street will be widened and pedestrian lighting will be installed to insure walkability.

Timeline

The Auburn Planning Commission will review the new building at its May meeting, and design work will continue through the summer. Bidding is expected to open for the project in October, and a construction contract will likely come before the council in November.

Construction is expected to last until May 2019. The existing council chambers and municipal court building will be demolished in June 2019, and additional phases of the complex’s renovation will begin. Completion is scheduled for January 2020.

http://www.oanow.com/news/lee_county/fourth-graders-learn-about-water-conservation-recycling-at-lee-county/article_2c5c20d8-648a-5409-883a-40c197a174c2.html

Fourth graders learn about water conservation, recycling at Lee County Water Festival

Lindy Oller | Reporter
Opelika-Auburn News
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May 4, 2017

Kids from Loachapoka Elementary School build a water filter Wednesday at the Lee County Water Festival a
Opelika Sportsplex. From left, Talilah Echols, Leonardo Reyes, Jada Carlton and Zykeriya Dennison.

Todd Van Emst/tvemst@oanow.com

More than 675 Lee County fourth graders took a field trip Wednesday to the Opelika Sportsplex where they got hands-on experience with water conservation and recycling at the 14th annual Water Festival.

Students heard presentations and participated in activities that are aimed at teaching children the importance of water quality, conservation and recycling.

Throughout the morning volunteers engaged students in activities that taught them about water filtration, aquifers and the water cycle.

At the water filtration station, students created miniature filtration systems. The children poured brown water through gravel and sand in plastic soda bottles.

Sharon Owens, a teacher at Loachapoka Elementary School, said the festival is beneficial for her students.

“It incorporates what we have been learning about the water cycle,” Owens said. “They are having hands-on experience.”

At the edible aquifer station, students learned about permeable and impermeable surfaces using ice cream, chocolate syrup, sprinkles and soda.

Shannon McGlynn, who works for the Alabama Department of Environmental Management, explained how the festival educates students.

“This helps them learn about non point source pollution and what they can do to not pollute the water,” McGlynn said. “They learn about the elements of the cycle.”

At the water cycle station, children strung multicolored beads to make bracelets that represent the steps of the water cycle.

Paul Cash, a magician from California, also entertained the fourth-graders with an environmental magic show that emphasized water recycling.

Cash, who has performed his show for 6 million kids in the span of 25 years, said he enjoys doing shows for school children.

“School kids are my favorite audience because they’re amazed at the show,” Cash said.

During the show, winners for the festival’s t-shirt art contest were announced at the event. The students that placed in the contest were Madison Louise Jarrell, first place, Wacoochee Elementary School; Saylor Tyner, second place, Northside Intermediate School and Sadie Smith, third place, Morris Avenue Intermediate School.

http://www.oanow.com/news/auburn/local-drought-watch-persists-spillway-project-nearing-completion/article_52f9f2ac-33a7-11e7-a681-97b6399d3daa.html

Local drought watch persists; spillway project nearing completion

Cynthia Williford | Reporter
Opelika-Auburn News
cwilliford@oanow.com
Follow on Twitter May 8, 2017

Peanut harvesting in the Beehive Road area. Drew Miller makes a dust cloud harvesting peanuts Friday, Oct., 14, 2016 in Auburn, Ala. Todd Van Emst/tvemst@oanow.com

Todd Van Emst/tvemst@oanow.com

Though several drizzly days have brought way to greener grass and May flowers, Lee County remains under a drought advisory, and officials are asking Auburn residents to keep a watchful eye on water usage.

Typically, the rain gauge at Lake Ogletree, Auburn's primary water source, reaches nearly 15 inches between February and March. This year, only 9.4 inches fell on the lake, according to Eric Carson, Auburn's Water Resource Management director.

The Auburn Water Works Board enacted a Phase I drought watch April 21, issuing voluntary restrictions for water customers.

Along with dryer-than-usual conditions, the department is rounding out construction of a new spillway to replace the original 75-year-old one. The new spillway will add about 50 million gallons of storage capacity to the lake.

Usage also shot up earlier than usual this year, adding to the need for the drought watch, Carson said.

"People really turned on their irrigation systems this year a lot earlier than historically," Carson said. "That was another one of the driving factors — that demand shot up so high so soon that we had to put a watch on so people would realize 'Hey, take it easy.'"

Meanwhile, water levels at the lake are about a foot or two lower than normal because of ongoing construction.

Warmer weather affecting lake

The lake will continue to drop as warmer weather continues, allowing workers to finish concrete work on the spillway within the next four to six weeks. Then earth work will begin, and construction is expected to finish in the fall.

As of Thursday, rainfall for May was promising, with 1.3 inches in the first four days alone, while the month usually averages around 4 inches, Carson said.

" We've made up some ground, but we're going to continue to watch it," Carson said. "We're not going to call the watch off. We may not, it just all depends how the weather and the summer demands go."

Carson asked customers to simply “use water wisely” to benefit the whole community. He also emphasized the impact of watering at the proper times, between 8 p.m. and 8 a.m., and on alternating days.

“ For some reason, a lot of people like to water on Mondays, Wednesdays and Fridays, and our demand will go through the roof on those days,” Carson said. “Then the next day, it’ll be cut by 20 percent. If they could even that out, that helps us a lot from a production standpoint.”

The voluntary water restrictions suggests that customers with even-numbered addresses water on Mondays, Wednesday and Fridays, and those with odd-numbered addresses to water on Tuesdays, Thursdays and Saturdays. No outdoor watering should occur on Sundays.

Though the drought watch is in place, Carson assured that “everything should be fine.”

"If this weather pattern holds up right now, that would be great. We’re getting good rain like we’re supposed to,” Carson said.

The city also released its 2016 Consumer Confidence Report that notifies customers about the quality and safety of their drinking water. The city again had no violations, and all water met or exceeded requirements, Carson said.

"We’re just proud to be able to provide quality water and to give consumers that confidence,” Carson said.

http://www.oanow.com/news/auburn/upcoming-study-to-evaluate-auburn-s-trees/article_716e810e-fde6-51fa-959a-c45fc0a6c78e.html

Upcoming study to evaluate Auburn's trees

Carla Nelson | Reporter
Opelika-Auburn News
cnelson@oanow.com Mar 15, 2018

Pictured is Parkerson Mill Creek, which will be part of the city's urban tree canopy study, near the Auburn University softball and soccer fields.

Emily Enfinger/eenfinger@oanow.com

The city of Auburn is participating in a study that may result in the planting of new trees or the removal of existing trees to address concerns related to storm water and polluted runoff throughout the city.

An agreement between the city and the Green Infrastructure Center will result in the evaluation of the city's urban tree canopy, which is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

The study will result in recommendations for better management of existing trees within the city, and improving the planning of any future reforestation efforts. Any recommendations for tree removal will primarily focus on elimination of exotic invasive trees to reduce over-competition, increase diversity, and increase forest health.

The Green Infrastructure Center is a non-profit organization out of Charlottesville, Va., that works across the country to help evaluate and plan for conserving natural assets to sustain healthy communities. The organization worked with the U.S. Forest Service on a grant to fund a study of cities in six states to determine how much water their trees absorb and how they can better use their urban forests to manage their storm water and reduce flooding and polluted runoff.

The organization will use satellite imagery to map the land cover of the entire city of Auburn.

"The study will also help create healthier communities by realizing the many benefits that trees provide other than just clean air and shade," said Karen Firehock, executive director of Green Infrastructure Center.

Firehock said the 11 cities chosen for the study were based on need. Other cities chosen include Charleston, S.C., Jacksonville, Fla., Norcross, Ga., and Lynchburg, Va.

"It's also based on finding a progressive city that's willing to try something new," she said.

The project is being funded through a grant administered by the Alabama Forestry Commission and supported by an in-kind match provided by the city, which is provided primarily through associated aerial photography, planimetric data, and light detection and ranging data collected in 2017.

“We’ve been trying to work with the Alabama Forestry Commission for the last couple of years on a variety of projects focusing on green infrastructure,” said Daniel Ballard, watershed division manager for the city of Auburn’s water resource management team. “Trees are the original green infrastructure. They have a few different programs that they manage and one of these being this federal grant that they administer that focuses on urban forests for the specific purpose of improving storm water management.”

Auburn a good candidate

Ballard said Auburn was a good candidate for the study because it’s a rapidly growing city. A growing city results in the removal of trees and the city wanted to look at ways to better manage this for the specific purpose of improving storm water quality and water quality throughout the city.

“This definitely gives us an opportunity to do that, to give us a snapshot, an idea of where we stand,” he said.

Ballard said the city’s impaired watersheds, which are water quality areas of concern, will be part of the study and are always a priority for the city. Ballard defined a watershed as all the area of land that drains to a particular point.

“There are areas within the Parkerson Mill Creek watershed, the Saugahatchee Creek watershed, or the Moores Mill Creek watershed that are all priorities for our department,” he said.

The study is just beginning. Firehock said she recently received all of the paperwork to start the process and is currently compiling the city’s data and is starting on the mapping. She said a public meeting will be held early in the process, possibly by the end of spring, to hear interests and concerns from local citizens.

Ballard added that the timing for the study worked out perfectly since the city was already pursuing its green infrastructure master plan, which will integrate parks and natural areas, greenways, bike paths, sidewalks, and habitat corridors with places where people live, work, learn and play.

“This project filled in a gap in that master planning process,” Ballard said. “Although we’re not evaluating urban tree canopy in our green infrastructure master plan, we are in that process looking holistically at the way we manage storm water and not just trees.”

CARLA NELSON

https://www.auburnvillager.com/news/work-on-new-public-safety-facility-to-start-in-december/article_9126470a-1ad0-11e7-a95f-df572d138bc1.html

Work on new Public Safety facility to start in December

Allison Blankenship allison@auburnvillager.com Apr 6, 2017

Ground will be broken for the $22 million Public Safety facility planned for the corner of Magnolia Avenue and Ross Street in December, according to Interim City Manager Jim Buston, who gave the City Council an update this week.

The council unanimously approved a professional services contract with architect Seay, Seay & Litchfield in October to move forward with the new facility.

The design phase is about 35 percent complete, Buston said, and the architects hope to be at 95 percent by the end of August.

The facility will be one of the biggest projects ever for the city — 69,549 square feet with wings for the Judicial Department, Auburn Police Division and Fire Station No. 1, which will be temporarily relocated either to Auburn University's campus or near the Water Works Board until the facility is complete.

About 160 parking spaces will be gained after the project is complete, but several things will be set in motion before work can begin on the Public Safety facility.

First, the Carolyn Apartments on Glenn Avenue — behind the Development Services Building on the corner of Glenn and Ross Street — will be demolished in July. That site will become a landscaped, green parking lot, adding about 90 to 95 parking spots for people visiting the Public Safety site or Felton Little Park across the street. The parking lot is expected to be done in late November.

"We do plan to use this as a model for parking construction, so we plan to have green infrastructure," said Kevin Cowper, assistant city manager.

Cowper added there would be a bioretention pond with vegetation next to the lot to help clean stormwater and permeable pavers to absorb storm water instead of creating run-off.

Since the new Public Safety facility will be located on the corner of Magnolia Avenue and Ross Street where Fire Station No. 1 currently resides, the station will be demolished before construction can begin. Before demolition, about 13 firefighters and two trucks will be moved to a temporary location near or on Auburn's campus.

Construction is slated to begin on the facility in December, with a occupancy date of May 2019.

The current Douglas J. Watson Municipal Complex will stay untouched during construction, but once the new Public Safety facility is complete, the old complex will be demolished to become a parking lot. The Public Administration Building and Development Services Building will not be demolished.

At the regular City Council meeting this week, the council approved a development agreement with TCFC LLC, which gives tax incentives to the developer in exchange for repurposing an existing structure in a key economic corridor. The structure is an old home, located at 150 Ross Street, which will be made into a coffee shop.

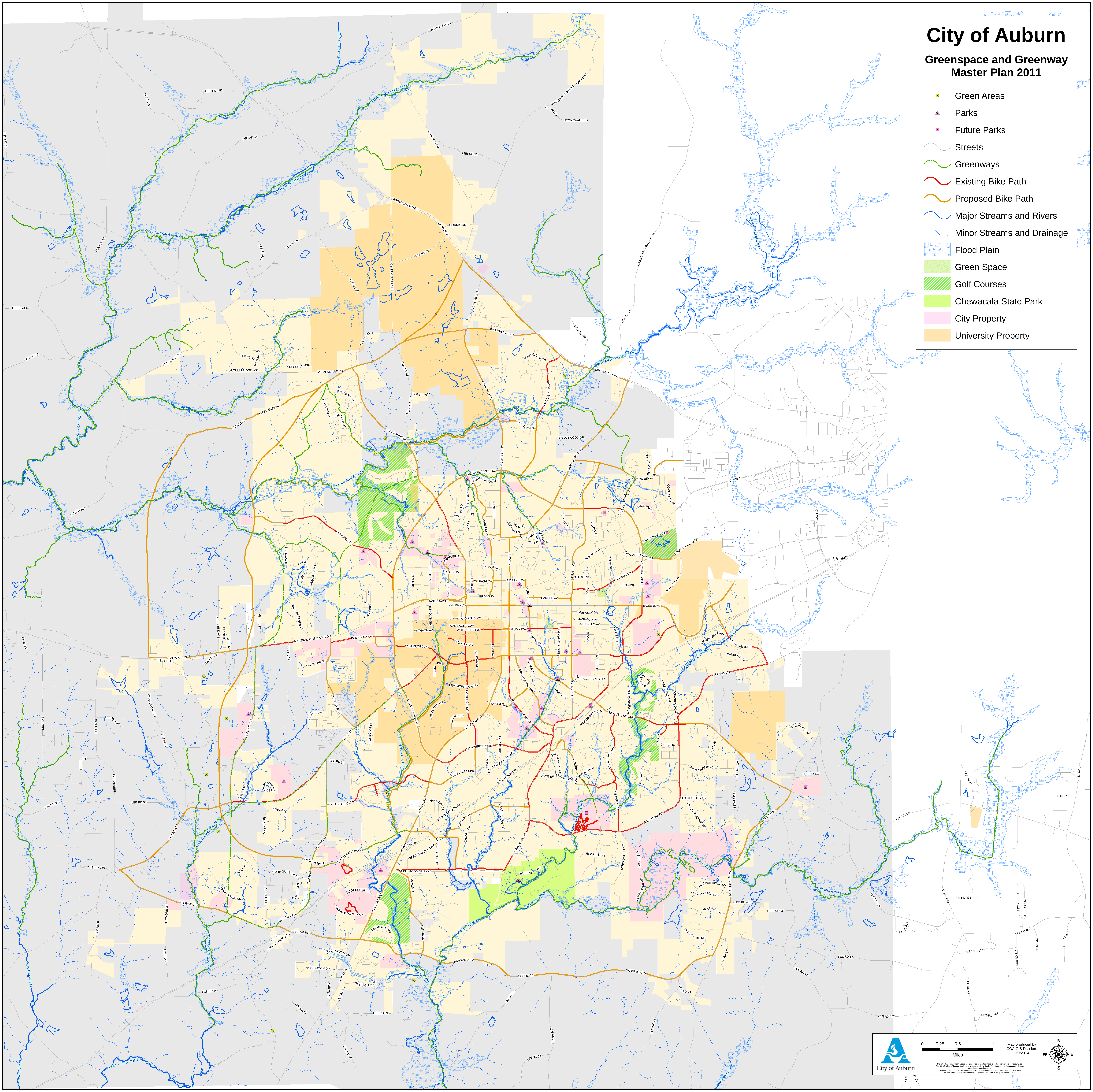
Owner Toni Holt said work on the structure has been ongoing since January with hopes for the business to open on May 1.

Work on the house will include painting the exterior, repouring the steps and sidewalk, installing new light fixtures, meeting ADA requirements, adding landscaping and creating a parking lot in the rear of the building.

The council also approved a contract to hire Colin Baenziger & Associates to assist in the selection of a new Auburn city manager. The cost for services is $24,500.

APPENDIX D

GREEN SPACE AND GREEN WAY MASTER PLAN


City of Auburn
Greenspace and Greenway Master Plan 2011
Green Areas
Parks
Future Parks
Streets
Greenways
Existing Bike Path
Proposed Bike Path
Major Streams and Rivers
Minor Streams and Drainage
Flood Plain
Green Space
Golf Courses
Chewacala State Park
City Property
University Property
City of Auburn
0 0.25 0.5 1
Miles
Map produced by COA GIS Division: 9/9/2014
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The City of Auburn, Alabama disclaims any responsibility or liability for interpretations from generated maps or decisions based thereon.
The information contained on generated maps is a general representation only and is not to be used without verification by an independent professional qualified to verify such information.
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APPENDIX E

2017 STORMWATER QUALITY MONITORING REPORT

City of Auburn, Alabama
Phase II MS4

Annual Surface Water Quality Monitoring Report
Monitoring Period: April 1, 2017 – March 31, 2018

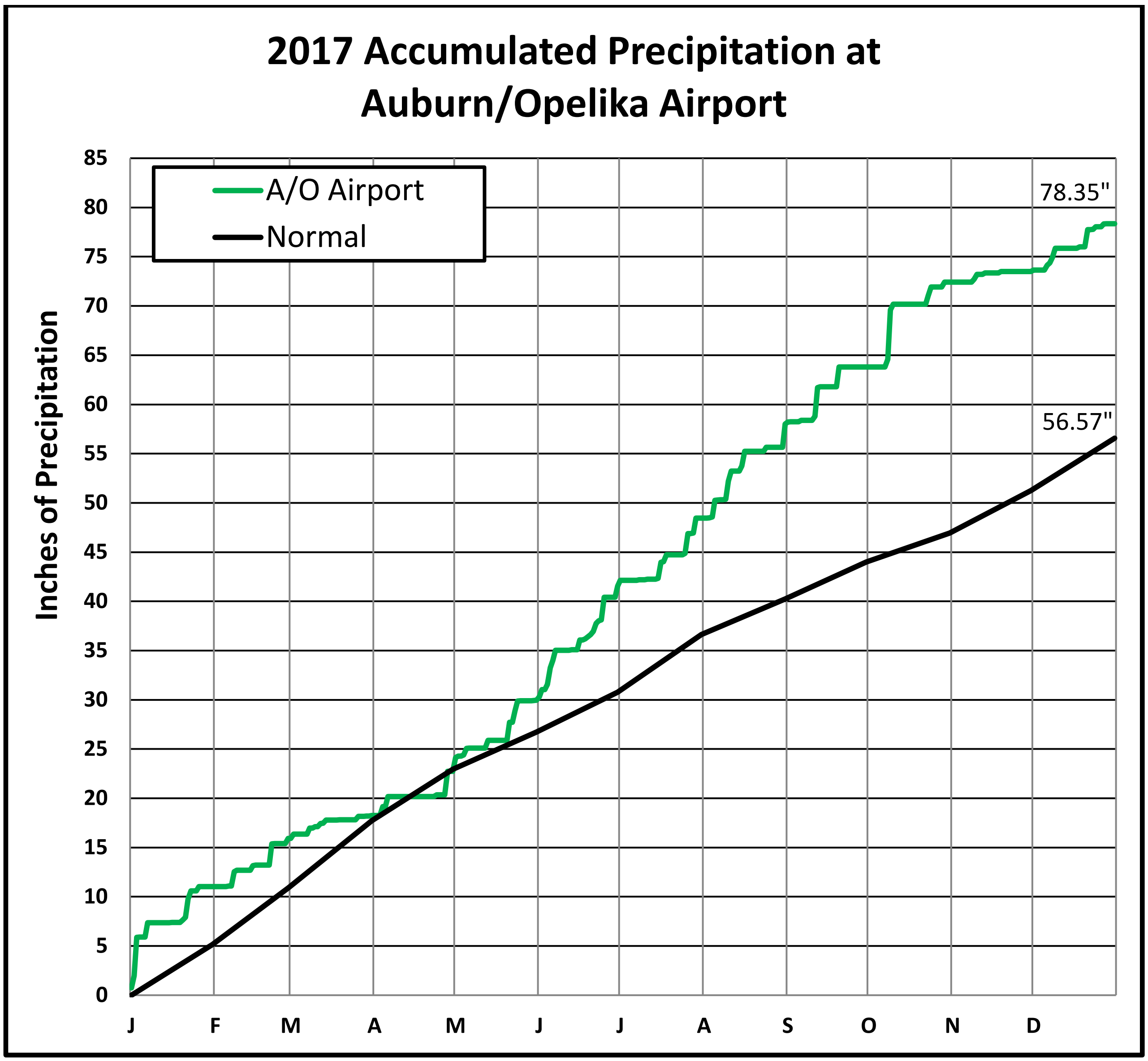
Permit # ALR040003
Effective: October 1, 2016
Expiration: September 30, 2021

Table of Contents

1.0 Introduction

The City of Auburn has been voluntarily collecting water quality data on its various surrounding water resources since the 1970's. Although initial efforts were primarily concentrated on source water quality monitoring in the Lake Ogletree reservoir basin of Chewacla Creek, the City's water quality monitoring has expanded to include a wide variety of monitoring programs that are used to guide its efforts of assessment, protection, and, when necessary, restoration of water quality. These programs include monitoring for physical, chemical, mineral, and biological indicators of water quality, with many monitoring efforts managed and operated in-house. This report presents the results of the water quality monitoring and analysis for the period of April 1, 2017 to March 31, 2018, and also includes notes and comments by Water Resource Management Staff.

1.0 Precipitation Data 2017



Monthly Accumulated Precipitation at Auburn/Opelika Airport

2.0 Monitoring Required Under ADEM Phase II NPDES General Permit ALR040003

2.1 Background

The City of Auburn has three (3) streams within its jurisdiction that fail to meet the state's minimum water quality standards for their designated uses. Two streams have a finalized Total Maximum Daily Load (TMDL), and one stream is included on the 2016 final 303(d) list. A TMDL was approved for the Saugahatchee Creek watershed in 2008, with the pollutants of concern being total phosphorus (TP) and organic enrichment/dissolved oxygen (OE/DO). A TMDL was finalized for Parkerson's Mill Creek in 2011 for pathogens, with E. coli as the indicator bacteria. Moore's Mill Creek was included on the 303(d) list of impaired streams in 2000 for siltation, and there is currently no TMDL for Moore's Mill Creek. The following data were collected from April 1, 2017 to March 31, 2018 in compliance with the Phase II NPDES General Permit ALR040003 as outlined in the City of Auburn's Stormwater Quality Monitoring Plan.

2.2 Compliance Requirements

According to ADEM Phase II NPDES General Permit ALR040003, if a waterbody within the MS4 jurisdiction is listed on the latest final 303(d) list, or otherwise designated impaired by ADEM, or for which a TMDL is approved or established by EPA, the MS4 permittee shall comply with the following:

1. Include a statement in the SWMPP stating if monitoring is required.
2. Implement a monitoring program within 6 months of permit coverage that addresses the impairment or TMDL. Include the monitoring plan in the SWMPP, and document the revisions to the monitoring plan in the SWMPP and SWMPP Annual Report.
3. Describe proposed monitoring locations and proposed monitoring frequency in the monitoring plan, with actual locations described in the SWMPP Annual Report.
4. Include in the monitoring program any parameters attributed with the latest final 303(d) list, or otherwise designated by ADEM as impaired, or are included in an EPA-approved or EPA-established TMDL.
5. Perform analysis and collection of samples in accordance with the methods specified at 40 CFR Part 136. If an approved 40 CFR Part 136 method does not exist, then an ADEM approved method may be used.
6. If samples cannot be collected due to adverse conditions, permittee must submit a description of why samples could not be collected, including available documentation of the event (e.g. weather conditions that create dangerous conditions for personnel, or impracticable conditions such as drought or ice).
7. Monitoring results must be reported with the subsequent SWMPP Annual Report and shall include the following:
    a. The date, latitude/longitude of location, and time of sampling
    b. The name(s) of the individual(s) who performed the sampling
    c. The date(s) analysis were performed
    d. The name(s) of the individual(s) who performed the analysis
    e. The analytical techniques or methods used

f. The results of such analysis

The pages that follow include the sampling and reporting requirements outlined above for Saugahatchee Creek, Parkerson's Mill Creek, and Moore's Mill Creek (watersheds that fail to meet the state's minimum water quality standards for their designated uses).

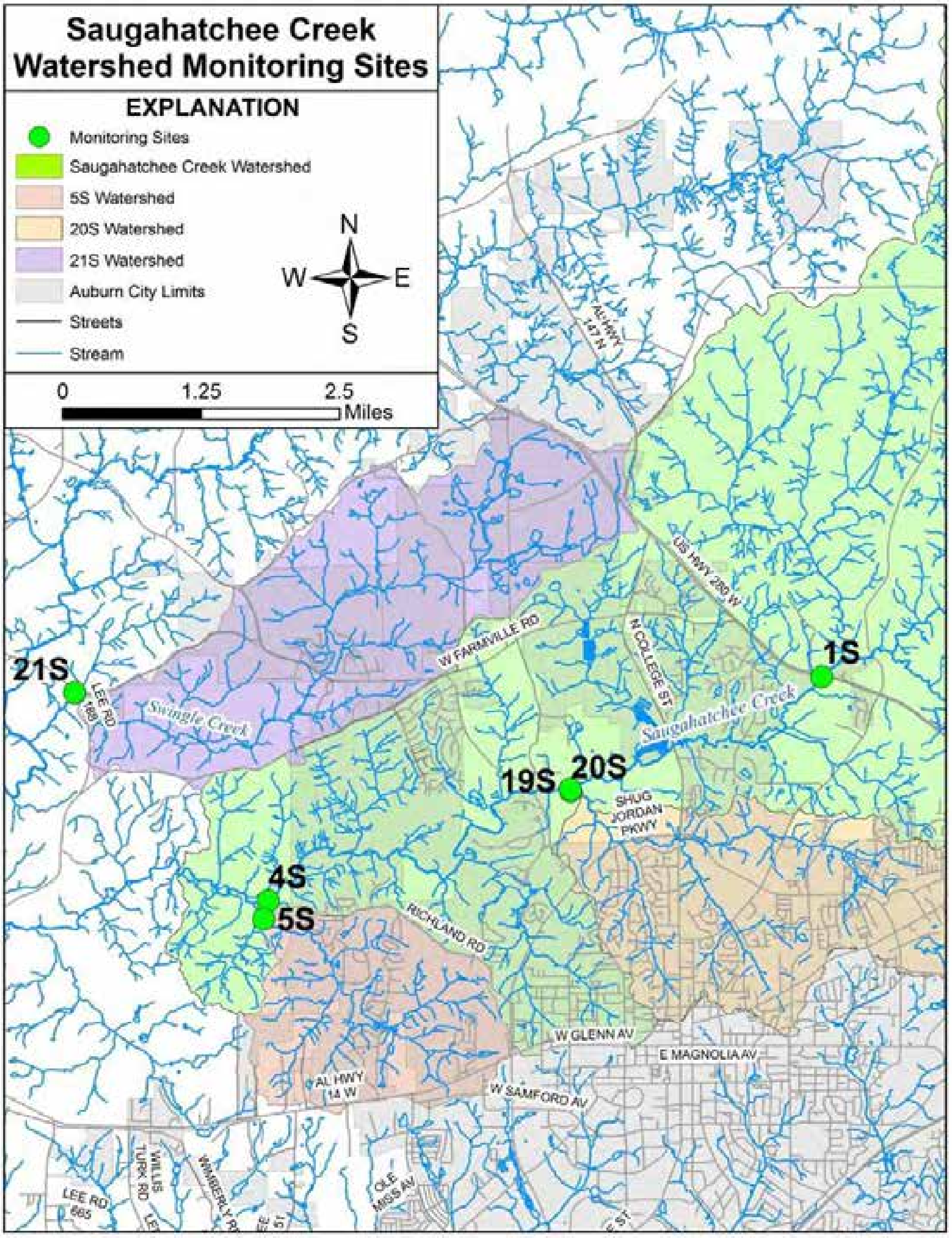
2.3 Water Sampling Methods

The City of Auburn understands that quality control and quality assurance are critical to a successful environmental monitoring program. In order to develop a dependable and credible database of water quality measurements for each sampling site in the City's MS4 area, the Water Resource Management (WRM) staff employ a stringent field and laboratory protocol. WRM staff are required to wear nitrile gloves when handling sample bottles, cleaning sample bottles, plating bacterial samples, handling bacterial plates and growth media, calibrating instruments, and collecting water samples. Before going to a sample site, water sample collection bottles are placed in clean, sealable plastic bags. They are carried to the sample site in a cooler, and after the samples are collected the bottles are immediately placed back into the bag and into the cooler to be chilled at 4 degrees Celsius. WRM staff calibrate all water quality instruments prior to field use. Calibration standards are never used outside the expiration date. A detailed calibration log is filled out each time an instrument is calibrated. Instruments, sampling devices, and sample vials are cleaned using Liquinox™ phosphate-free detergent, followed by a tap water rinse, and then a final rinse with deionized water. At all sample sites, WRM staff utilize field sheets to document site characteristics and observations such as stream color, geomorphic setting (riffle, pool, etc.), and weather conditions. The field sheets are also used to document water quality data measured in-situ at each site. These in-situ data include temperature, pH, specific conductance (μS/cm), dissolved oxygen (mg/L), and are collected using a YSI ProPlus instrument. Water samples are analyzed for turbidity in the field using a LaMotte 2020we portable turbidimeter. Streamflow is determined using the mid-section method, where the channel is divided into segments along a cross-section, and width, depth, and velocity are recorded at each segment. Velocity is measured at the center of each segment using a Price Pygmy Meter. The sum of flows of all the segments along a cross-section equals the total streamflow.

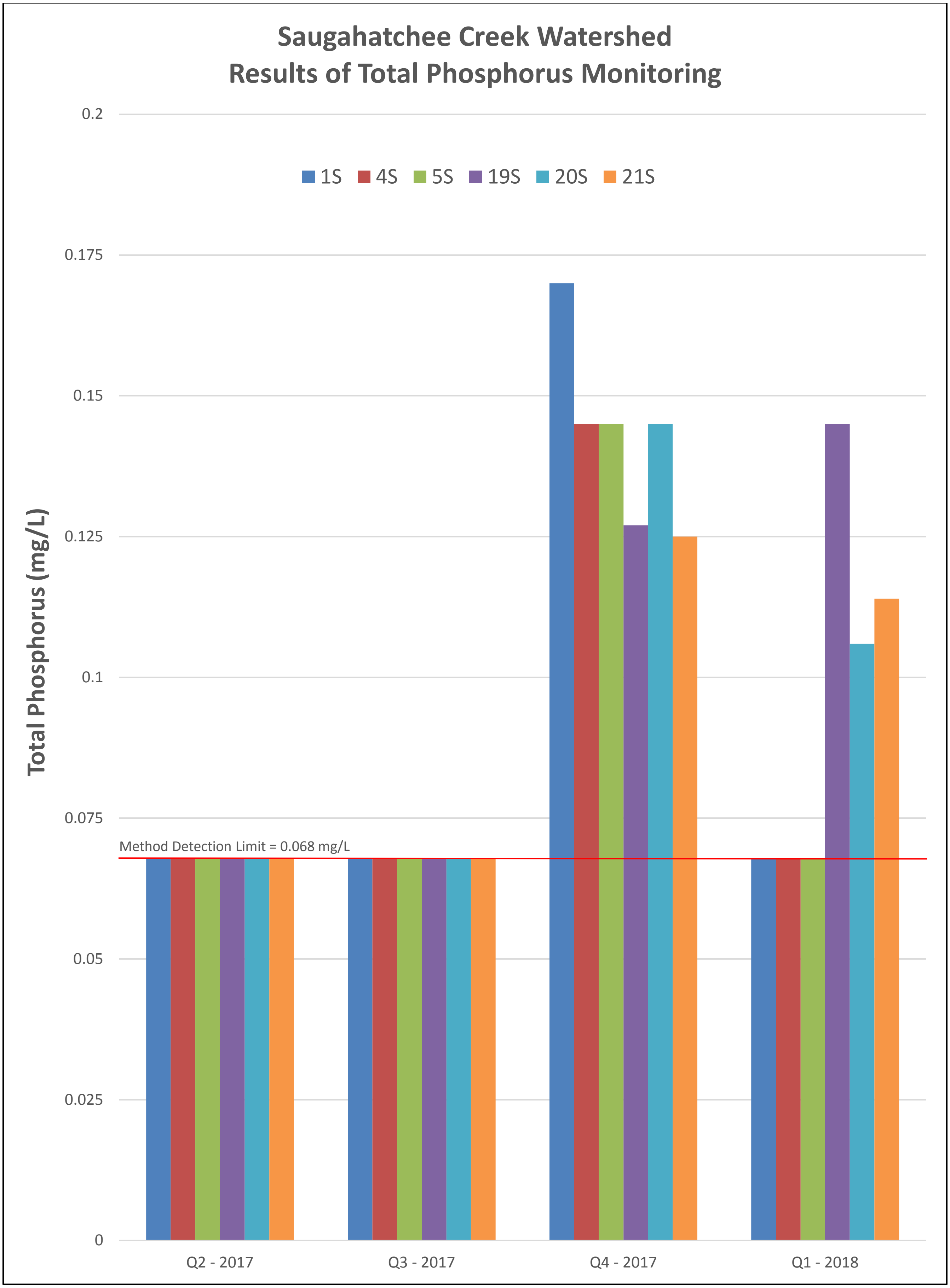
2.4 Saugahatchee Creek Compliance Monitoring Data

The Saugahatchee Creek Embayment on Yates Reservoir was originally placed on the ADEM 303(d) list of impaired waterbodies in 1996 for OE/DO and nutrients. It remained on the State's 303(d) list after each consecutive two-year water quality assessment until 2008, at which time the Saugahatchee Creek Embayment (Yates Reservoir) TMDL was finalized. Additionally, Pepperell Branch, an unnamed tributary of Saugahatchee Creek which originates in Opelika, also remained on the State's 303(d) list for nutrient impairment until 2008. The impairment of Pepperell Branch was also addressed in the Saugahatchee Creek Embayment TMDL. At no time has the main stem of Saugahatchee Creek been added to the State's 303(d) list. In order to address water quality concerns within the Saugahatchee Creek Embayment, ADEM and the EPA jointly developed a "watershed based" TMDL, which would in turn address nutrient loading from both the main stem of Saugahatchee Creek and Pepperell Branch. The final Saugahatchee Creek Watershed TMDL was issued in April of 2008, identifying TP as the primary pollutant of concern (expressed as chlorophyll-a to satisfy numeric target criteria for assessing eutrophication in lakes). The Saugahatchee Creek Embayment TMDL establishes the TP limits in stormwater runoff of equal to or less than 0.1 mg/L (see Table 5-2 of the Saugahatchee Creek Embayment TMDL).

Monitoring TP at strategic locations along the main stem of Saugahatchee Creek and on tributaries within the Saugahatchee Creek watershed that drain portions of the City's MS4 provides sufficient data to evaluate the success of efforts to reduce TP in stormwater and meet TMDL concentrations. The City makes all reasonable efforts to conduct quarterly sampling for TP, water temperature, pH, dissolved oxygen, specific conductance, and turbidity at three locations along the main stem of Saugahatchee Creek, and also at three tributaries within the Saugahatchee Creek watershed. Streamflow in cubic feet per second (cfs) and million gallons per day (MGD) are recorded at each sample site when water samples are collected. Streamflow is determined from the USGS streamgage 02418230 for sites on the main stem of Saugahatchee Creek. The City makes a reasonable effort to measure streamflow in-situ at tributary sites when flow conditions permit. Additionally, the City continues to reasonably support and participate in studies of water quality in the embayment.



Saugahatchee Creek Watershed Monitoring Sites


Saugahatchee Creek Watershed
Results of Total Phosphorus Monitoring
1S
4S
5S
19S
20S
21S
Total Phosphorus (mg/L)
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
Method Detection Limit = 0.068 mg/L
Q2 - 2017
Q3 - 2017
Q4 - 2017
Q1 - 2018

Saugahatchee Creek Watershed Monitoring Data

Site Number	Site Location	Site Coordinates
1S	Saugahatchee Creek at US HWY 280	32.657413 N, 85.459656 W
4S	Saugahatchee Creek at Northside WWTP	32.642777 N, 85.498761 W
5S	Unnamed Tributary to Saugahatchee Creek	32.628185 N, 85.545705 W
19S	Saugahatchee Creek 0.35 mi upstream of N. Donahue Dr.	32.625847 N, 85.546404 W
20S	Unnamed Tributary to Saugahatchee Creek	32.642492 N, 85.498606 W
21S	Swingle Creek above Lee Rd. 188	32.655618 N, 85.575517 W

Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	161	104
4S	6/27/2017	1345	D. Kimbrow	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	118	76
5S	6/27/2017	1420	D. Kimbrow	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	169	109
20S	6/26/2017	1440	D. Kimbrow	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	10	6.46
21S	6/26/2017	1255	D. Kimbrow	<0.068	EPA 365.4	7/7/2017	H. Knowles (ERA)	14.58	9.42
Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	<0.068	EPA 365.4	9/28/2017	H. Knowles (ERA)	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	0.17	EPA 365.4	12/15/2017	A. O’Neal (ERA)	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	0.145	EPA 365.4	12/15/2017	A. O’Neal (ERA)	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	0.145	EPA 365.4	12/15/2017	A. O’Neal (ERA)	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	0.127	EPA 365.4	12/15/2017	A. O’Neal (ERA)	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	0.145	EPA 365.4	12/15/2017	A. O’Neal (ERA)	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	0.125	EPA 365.4	12/15/2017	A. O’Neal (ERA)	5.65	3.65

Site Number	Sample Date	Sample Time	Sample Collected By	Total Phosphorus (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	<0.068	EPA 365.4	3/12/2017	H. Knowles (ERA)	89	57.5
4S	3/2/2018	1510	D. Kimbrow	<0.068	EPA 365.4	3/12/2017	H. Knowles (ERA)	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	<0.068	EPA 365.4	3/12/2017	H. Knowles (ERA)	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	0.145	EPA 365.4	3/15/2017	H. Knowles (ERA)	121	78.2
20S	3/7/2018	0930	D. Kimbrow	0.106	EPA 365.4	3/15/2017	H. Knowles (ERA)	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	0.114	EPA 365.4	3/15/2017	H. Knowles (ERA)	13.85	8.95
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	75.5	YSI 5560	6/26/2017	E. Bankston	161	104
4S	6/27/2017	1345	D. Kimbrow	73.2	YSI 5560	6/27/2017	D. Kimbrow	118	76
5S	6/27/2017	1420	D. Kimbrow	76.6	YSI 5560	6/27/2017	D. Kimbrow	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	74.7	YSI 5560	6/26/2017	D. Kimbrow	169	109
20S	6/26/2017	1440	D. Kimbrow	74.7	YSI 5560	6/26/2017	D. Kimbrow	10	6.46
21S	6/26/2017	1255	D. Kimbrow	73.4	YSI 5560	6/26/2017	D. Kimbrow	14.58	9.42
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	69.8	YSI 5560	9/14/2017	D. Kimbrow	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	68.5	YSI 5560	9/14/2017	D. Kimbrow, D. Ballard	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	68.3	YSI 5560	9/14/2017	D. Kimbrow	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	68.7	YSI 5560	9/14/2017	D. Kimbrow, D. Ballard	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	67.9	YSI 5560	9/14/2017	D. Kimbrow	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	66.3	YSI 5560	9/14/2017	D. Kimbrow	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	50.1	YSI 5560	12/13/2017	D. Kimbrow	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	44.9	YSI 5560	12/13/2017	D. Kimbrow	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	45.7	YSI 5560	12/13/2017	D. Kimbrow	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	46.2	YSI 5560	12/13/2017	D. Kimbrow	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	44.9	YSI 5560	12/13/2017	D. Kimbrow	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	44.3	YSI 5560	12/13/2017	D. Kimbrow	5.65	3.65
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	63.3	YSI 5560	3/2/2018	D. Kimbrow	89	57.5
4S	3/2/2018	1510	D. Kimbrow	62.1	YSI 5560	3/2/2018	D. Kimbrow	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	66.0	YSI 5560	2/27/2018	D. Kimbrow	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	54.4	YSI 5560	3/7/2018	D. Kimbrow	121	78.2
20S	3/7/2018	0930	D. Kimbrow	53.8	YSI 5560	3/7/2018	D. Kimbrow	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	53.6	YSI 5560	3/7/2018	D. Kimbrow	13.85	8.95

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	7.32	YSI 1001	6/26/2017	E. Bankston	161	104
4S	6/27/2017	1345	D. Kimbrow	6.57	YSI 1001	6/27/2017	D. Kimbrow	118	76
5S	6/27/2017	1420	D. Kimbrow	6.77	YSI 1001	6/27/2017	D. Kimbrow	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	6.87	YSI 1001	6/26/2017	D. Kimbrow	169	109
20S	6/26/2017	1440	D. Kimbrow	7.00	YSI 1001	6/26/2017	D. Kimbrow	10	6.46
21S	6/26/2017	1255	D. Kimbrow	6.79	YSI 1001	6/26/2017	D. Kimbrow	14.58	9.42
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	7.22	YSI 1001	9/14/2017	D. Kimbrow	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	6.93	YSI 1001	9/14/2017	D. Kimbrow, D. Ballard	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	6.83	YSI 1001	9/14/2017	D. Kimbrow	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	7.16	YSI 1001	9/14/2017	D. Kimbrow, D. Ballard	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	6.92	YSI 1001	9/14/2017	D. Kimbrow	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	6.84	YSI 1001	9/14/2017	D. Kimbrow	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	7.45	YSI 1001	12/13/2017	D. Kimbrow	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	7.44	YSI 1001	12/13/2017	D. Kimbrow	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	7.13	YSI 1001	12/13/2017	D. Kimbrow	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	7.30	YSI 1001	12/13/2017	D. Kimbrow	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	7.20	YSI 1001	12/13/2017	D. Kimbrow	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	7.38	YSI 1001	12/13/2017	D. Kimbrow	5.65	3.65
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	6.71	YSI 1001	3/2/2018	D. Kimbrow	89	57.5
4S	3/2/2018	1510	D. Kimbrow	6.73	YSI 1001	3/2/2018	D. Kimbrow	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	6.55	YSI 1001	2/27/2018	D. Kimbrow	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	7.16	YSI 1001	3/7/2018	D. Kimbrow	121	78.2
20S	3/7/2018	0930	D. Kimbrow	6.98	YSI 1001	3/7/2018	D. Kimbrow	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	6.78	YSI 1001	3/7/2018	D. Kimbrow	13.85	8.95
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	8.43	YSI 2003 polarographic	6/26/2017	E. Bankston	161	104
4S	6/27/2017	1345	D. Kimbrow	7.73	YSI 2003 polarographic	6/27/2017	D. Kimbrow	118	76
5S	6/27/2017	1420	D. Kimbrow	6.84	YSI 2003 polarographic	6/27/2017	D. Kimbrow	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	7.22	YSI 2003 polarographic	6/26/2017	D. Kimbrow	169	109
20S	6/26/2017	1440	D. Kimbrow	7.41	YSI 2003 polarographic	6/26/2017	D. Kimbrow	10	6.46
21S	6/26/2017	1255	D. Kimbrow	7.95	YSI 2003 polarographic	6/26/2017	D. Kimbrow	14.58	9.42

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	8.58	YSI 2003 polarographic	9/14/2017	D. Kimbrow	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	8.14	YSI 2003 polarographic	9/14/2017	D. Kimbrow, D. Ballard	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	7.60	YSI 2003 polarographic	9/14/2017	D. Kimbrow	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	7.90	YSI 2003 polarographic	9/14/2017	D. Kimbrow, D. Ballard	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	8.05	YSI 2003 polarographic	9/14/2017	D. Kimbrow	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	8.68	YSI 2003 polarographic	9/14/2017	D. Kimbrow	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	12.38	YSI 2003 polarographic	12/13/2017	D. Kimbrow	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	12.29	YSI 2003 polarographic	12/13/2017	D. Kimbrow	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	10.93	YSI 2003 polarographic	12/13/2017	D. Kimbrow	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	11.76	YSI 2003 polarographic	12/13/2017	D. Kimbrow	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	12.16	YSI 2003 polarographic	12/13/2017	D. Kimbrow	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	13.07	YSI 2003 polarographic	12/13/2017	D. Kimbrow	5.65	3.65
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	9.93	YSI 2003 polarographic	3/2/2018	D. Kimbrow	89	57.5
4S	3/2/2018	1510	D. Kimbrow	9.72	YSI 2003 polarographic	3/2/2018	D. Kimbrow	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	8.63	YSI 2003 polarographic	2/27/2018	D. Kimbrow	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	10.95	YSI 2003 polarographic	3/7/2018	D. Kimbrow	121	78.2
20S	3/7/2018	0930	D. Kimbrow	10.93	YSI 2003 polarographic	3/7/2018	D. Kimbrow	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	11.56	YSI 2003 polarographic	3/7/2018	D. Kimbrow	13.85	8.95
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	97	YSI 5560	6/26/2017	E. Bankston	161	104
4S	6/27/2017	1345	D. Kimbrow	103	YSI 5560	6/27/2017	D. Kimbrow	118	76
5S	6/27/2017	1420	D. Kimbrow	82	YSI 5560	6/27/2017	D. Kimbrow	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	108	YSI 5560	6/26/2017	D. Kimbrow	169	109
20S	6/26/2017	1440	D. Kimbrow	96	YSI 5560	6/26/2017	D. Kimbrow	10	6.46
21S	6/26/2017	1255	D. Kimbrow	69	YSI 5560	6/26/2017	D. Kimbrow	14.58	9.42

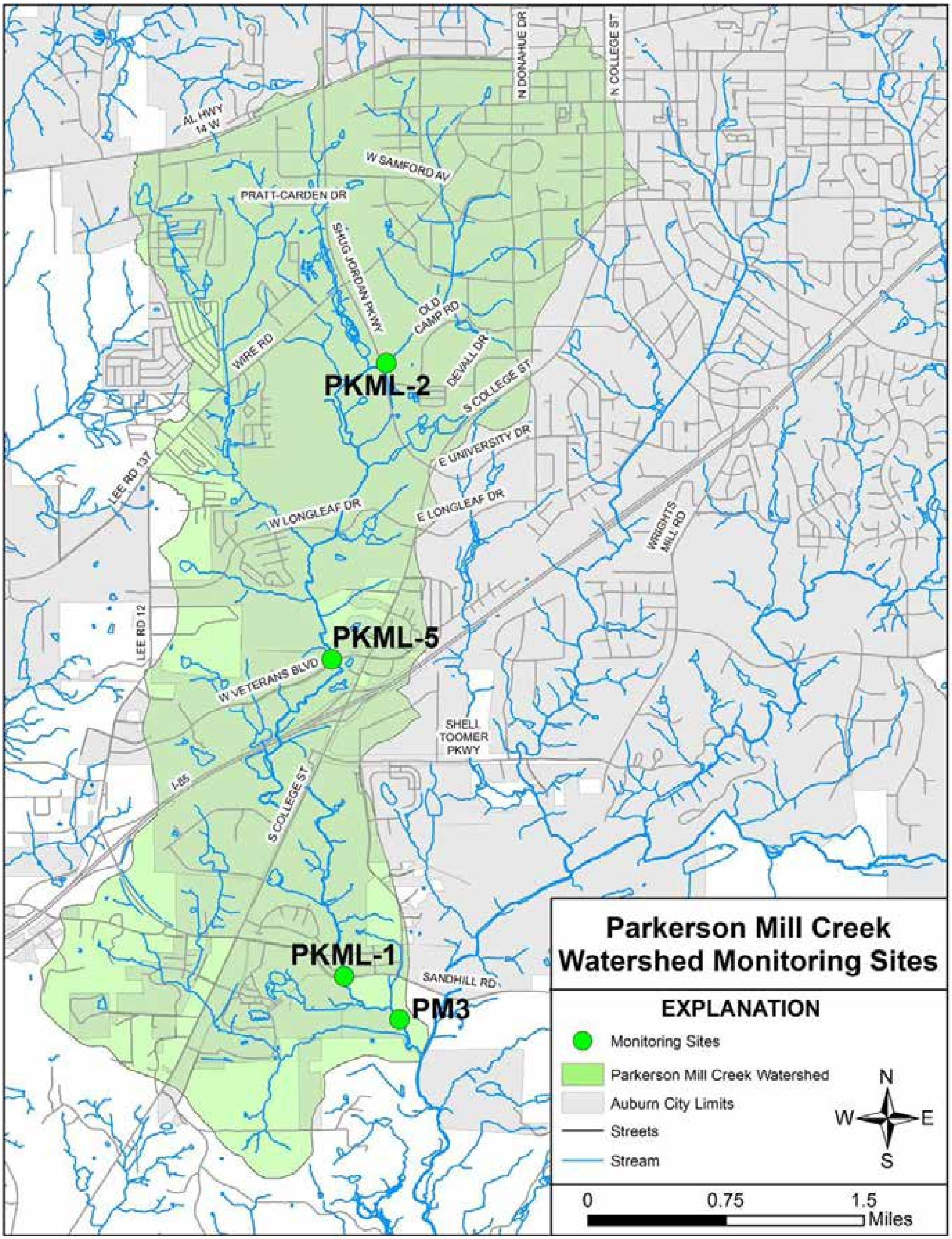
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	120	YSI 5560	9/14/2017	D. Kimbrow	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	112	YSI 5560	9/14/2017	D. Kimbrow, D. Ballard	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	79	YSI 5560	9/14/2017	D. Kimbrow	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	114	YSI 5560	9/14/2017	D. Kimbrow, D. Ballard	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	107	YSI 5560	9/14/2017	D. Kimbrow	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	70	YSI 5560	9/14/2017	D. Kimbrow	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	117	YSI 5560	12/13/2017	D. Kimbrow	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	113	YSI 5560	12/13/2017	D. Kimbrow	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	81	YSI 5560	12/13/2017	D. Kimbrow	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	108	YSI 5560	12/13/2017	D. Kimbrow	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	120	YSI 5560	12/13/2017	D. Kimbrow	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	67	YSI 5560	12/13/2017	D. Kimbrow	5.65	3.65
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	91	YSI 5560	3/2/2018	D. Kimbrow	89	57.5
4S	3/2/2018	1510	D. Kimbrow	95	YSI 5560	3/2/2018	D. Kimbrow	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	71	YSI 5560	2/27/2018	D. Kimbrow	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	84	YSI 5560	3/7/2018	D. Kimbrow	121	78.2
20S	3/7/2018	0930	D. Kimbrow	100	YSI 5560	3/7/2018	D. Kimbrow	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	62	YSI 5560	3/7/2018	D. Kimbrow	13.85	8.95
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	6/26/2017	1550	E. Bankston	12.2	SM 2130 B	6/26/2017	E. Bankston	161	104
4S	6/27/2017	1345	D. Kimbrow	12.03	SM 2130 B	6/27/2017	D. Kimbrow	118	76
5S	6/27/2017	1420	D. Kimbrow	8.69	SM 2130 B	6/27/2017	D. Kimbrow	4.41	2.85
19S	6/26/2017	1425	D. Kimbrow	8.07	SM 2130 B	6/26/2017	D. Kimbrow	169	109
20S	6/26/2017	1440	D. Kimbrow	9.3	SM 2130 B	6/26/2017	D. Kimbrow	10	6.46
21S	6/26/2017	1255	D. Kimbrow	12.09	SM 2130 B	6/26/2017	D. Kimbrow	14.58	9.42
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	9/14/2017	1210	D. Kimbrow	7.44	SM 2130 B	9/14/2017	D. Kimbrow	56.5	36.5
4S	9/14/2017	1040	D. Kimbrow, D. Ballard	11.6	SM 2130 B	9/14/2017	D. Kimbrow, D. Ballard	58.5	37.8
5S	9/14/2017	1015	D. Kimbrow	6.75	SM 2130 B	9/14/2017	D. Kimbrow	2.91	1.88
19S	9/14/2017	1135	D. Kimbrow, D. Ballard	11.9	SM 2130 B	9/14/2017	D. Kimbrow, D. Ballard	56.5	36.5
20S	9/14/2017	1110	D. Kimbrow	4.94	SM 2130 B	9/14/2017	D. Kimbrow	4.73	3.05
21S	9/14/2017	0910	D. Kimbrow	11.7	SM 2130 B	9/14/2017	D. Kimbrow	9.25	5.97
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	12/13/2017	1330	D. Kimbrow	5.13	SM 2130 B	12/13/2017	D. Kimbrow	49.3	31.8
4S	12/13/2017	0930	D. Kimbrow	5.72	SM 2130 B	12/13/2017	D. Kimbrow	49.3	31.8
5S	12/13/2017	0940	D. Kimbrow	5.01	SM 2130 B	12/13/2017	D. Kimbrow	1.96	1.26
19S	12/13/2017	1125	D. Kimbrow	4.15	SM 2130 B	12/13/2017	D. Kimbrow	51.1	33.0
20S	12/13/2017	1055	D. Kimbrow	1.52	SM 2130 B	12/13/2017	D. Kimbrow	3.48	2.24
21S	12/13/2017	1350	D. Kimbrow	11.6	SM 2130 B	12/13/2017	D. Kimbrow	5.65	3.65

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Streamflow (cfs)	Stream-flow (MGD)
1S	3/2/2018	1435	D. Kimbrow	7.59	SM 2130 B	3/2/2018	D. Kimbrow	89	57.5
4S	3/2/2018	1510	D. Kimbrow	9.85	SM 2130 B	3/2/2018	D. Kimbrow	86.3	55.7
5S	2/27/2018	1415	D. Kimbrow	12.6	SM 2130 B	2/27/2018	D. Kimbrow	6.75	4.36
19S	3/7/2018	1015	D. Kimbrow	14.7	SM 2130 B	3/7/2018	D. Kimbrow	121	78.2
20S	3/7/2018	0930	D. Kimbrow	7.14	SM 2130 B	3/7/2018	D. Kimbrow	9.38	6.06
21S	3/7/2018	1100	D. Kimbrow	9.8	SM 2130 B	3/7/2018	D. Kimbrow	13.85	8.95

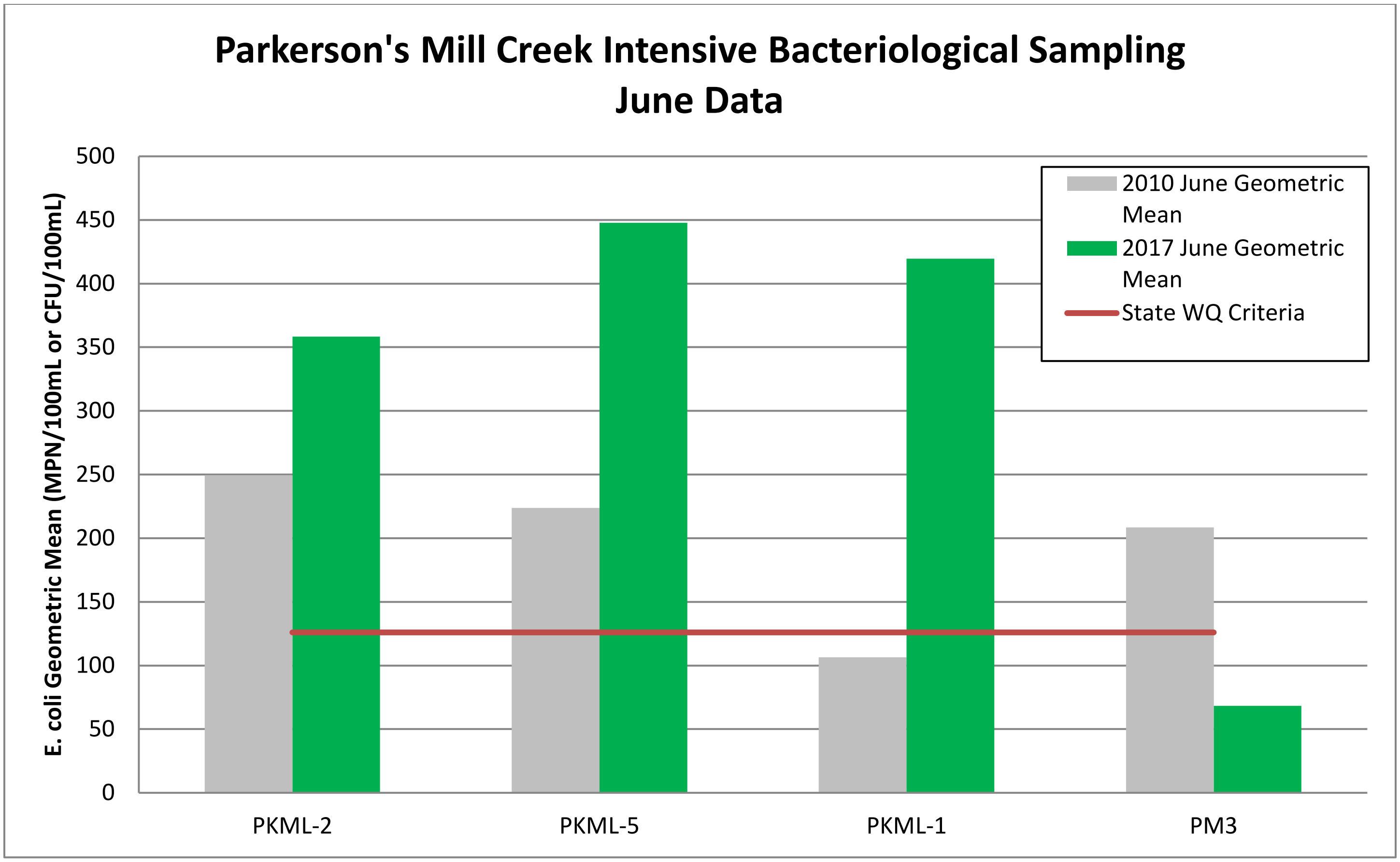
2.5 Parkerson's Mill Creek Compliance Monitoring Data

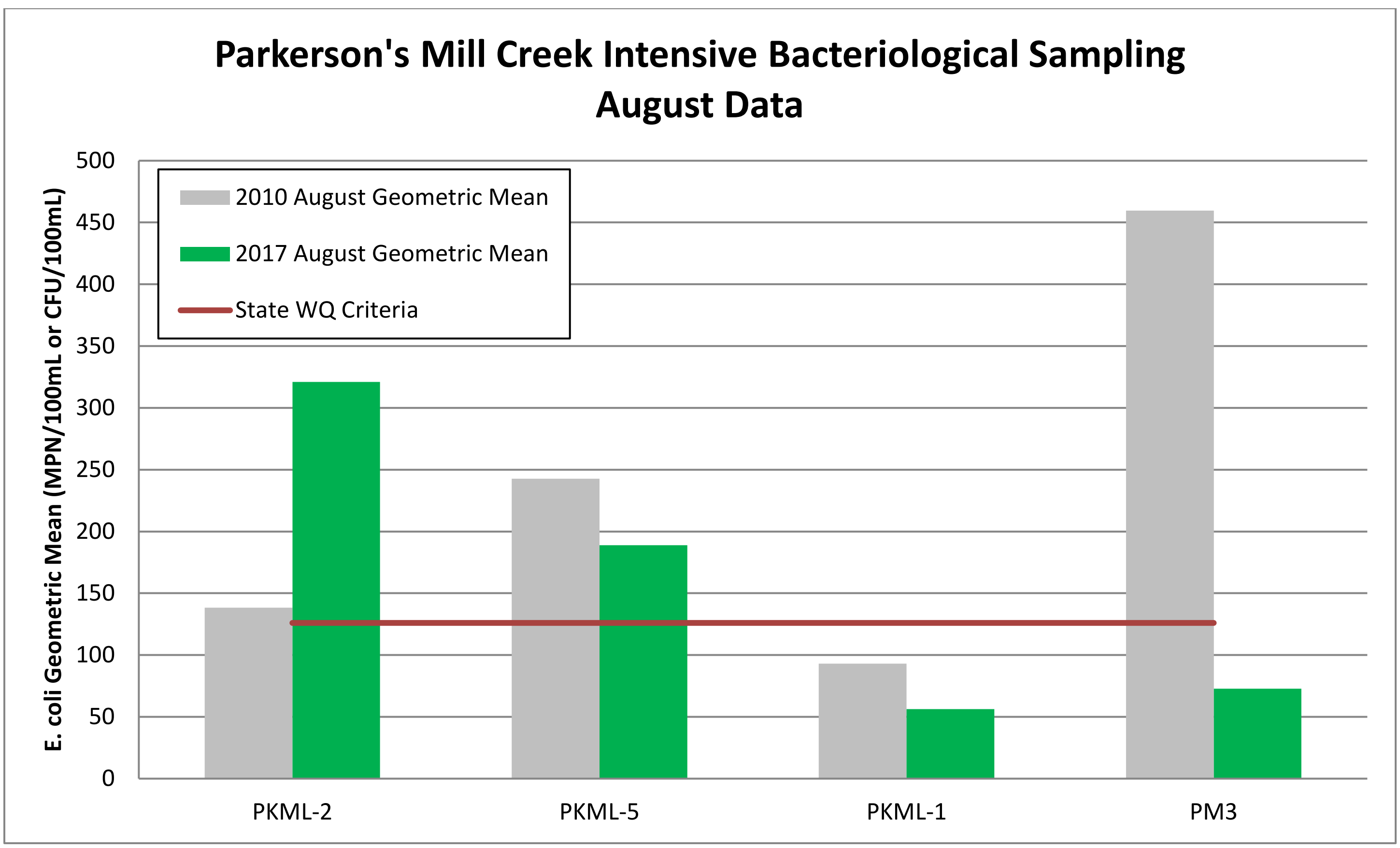
Parkerson's Mill Creek was placed on the ADEM 303(d) list of impaired waterbodies for pathogens in 2008. The impaired reach is 6.85 mi. long and includes all waters from its source (near the intersection of N. College St. and Glenn Ave. in downtown Auburn) to its confluence with Chewacla Creek. Potential sources of the impairment were listed as sanitary sewer overflows and urban runoff. The final Parkerson's Mill Creek TMDL was issued in September 2011, identifying E.coli as the pollutant of concern. The Parkerson's Mill Creek TMDL establishes the E. coli limits in stormwater at 3.42E+09 colonies/day, also expressed as a 61% reduction in non-point sources. This TMDL was established using the geometric mean criterion of 126 CFU/100mL.

The City makes all reasonable efforts to monitor E. coli concentrations in Parkerson's Mill Creek through annual intensive E. coli sampling. The intensive E. coli sampling provides sufficient data to evaluate the success of efforts to reduce pathogens in stormwater and meet TMDL concentrations. The intensive sampling is conducted in the same manner as the study performed by ADEM in 2010 at the same four (4) reference sites. Single samples are collected for E. coli once per month for April, May, July, September, October, and November. Weekly samples are collected at those sites during June and August. The 5-week geometric mean concentrations are calculated based on the results of the weekly sampling. The City makes a reasonable effort to measure streamflow (recorded in cfs and MGD) in-situ at each sample site after water samples are collected when flow conditions permit. Water temperature, pH, dissolved oxygen, specific conductance, and turbidity are measured in-situ at each site. Additionally, the City continues to reasonably support and participate in studies of water quality in the Parkerson's Mill Creek watershed. Sample sites for monitoring in the Parkerson's Mill Creek watershed are shown in the map below. Monitoring results are shown in the following charts and tables.



Parkerson Mill Creek Watershed Monitoring Sites


Parkerson's Mill Creek Intensive Bacteriological Sampling
June Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
500
450
400
350
300
250
200
150
100
50
0
PKML-2
PKML-5
PKML-1
PM3
2010 June Geometric Mean
2017 June Geometric Mean
State WQ Criteria


Parkerson's Mill Creek Intensive Bacteriological Sampling
August Data
E. coli Geometric Mean (MPN/100mL or CFU/100mL)
500
450
400
350
300
250
200
150
100
50
0
PKML-2
PKML-5
PKML-1
PM3
2010 August Geometric Mean
2017 August Geometric Mean
State WQ Criteria

Parkerson Mill Creek Watershed Monitoring Data

Site Number	Site Location	Site Coordinates
PKML-1	Parkerson's Mill Creek at Sand Hill Rd	32.53744 N, 85.50601 W
PKML-2	Parkerson's Mill Creek at Shug Jordan Pkwy	32.58551 N, 85.50249 W
PKML-5	Parkerson's Mill Creek at W. Veterans Blvd	32.56243 N, 85.50716 W
PM-3	Parkerson's Mill Creek below HC Morgan WPCF	32.53427 N, 85.50156 W

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard D. Kimbrow	200	Alabama Water Watch (Coliscan Easygel)	4/20/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	4/20/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	4/20/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard D. Kimbrow	350	Alabama Water Watch (Coliscan Easygel)	4/20/2017	D. Kimbrow	10.47	6.76
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	300	Alabama Water Watch (Coliscan Easygel)	5/18/2017	D. Kimbrow	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	150	Alabama Water Watch (Coliscan Easygel)	5/18/2017	D. Kimbrow	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	0	Alabama Water Watch (Coliscan Easygel)	5/18/2017	D. Kimbrow	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	450	Alabama Water Watch (Coliscan Easygel)	5/18/2017	D. Kimbrow	9.54	6.16
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	550	Alabama Water Watch (Coliscan Easygel)	6/12/2017	D. Ballard	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	750	Alabama Water Watch (Coliscan Easygel)	6/12/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	400	Alabama Water Watch (Coliscan Easygel)	6/12/2017	D. Ballard	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	300	Alabama Water Watch (Coliscan Easygel)	6/12/2017	D. Ballard	35.55	22.97

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	1500	Alabama Water Watch (Coliscan Easygel)	6/14/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	700	Alabama Water Watch (Coliscan Easygel)	6/14/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	3000	Alabama Water Watch (Coliscan Easygel)	6/14/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	500	Alabama Water Watch (Coliscan Easygel)	6/14/2017	D. Kimbrow	20.64	13.33
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	350	Alabama Water Watch (Coliscan Easygel)	6/25/2017	D. Ballard	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	300	Alabama Water Watch (Coliscan Easygel)	6/25/2017	D. Ballard	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	150	Alabama Water Watch (Coliscan Easygel)	6/25/2017	D. Ballard	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	0	Alabama Water Watch (Coliscan Easygel)	6/25/2017	D. Ballard	38.87	25.11
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	6/29/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	6/29/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	400	Alabama Water Watch (Coliscan Easygel)	6/29/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	6/29/2017	D. Kimbrow	20.05	12.95
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	300	Alabama Water Watch (Coliscan Easygel)	7/8/2017	D. Ballard	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	7/8/2017	D. Ballard	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	7/8/2017	D. Ballard	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	7/8/2017	D. Ballard	14.05	9.08

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	150	Alabama Water Watch (Coliscan Easygel)	8/2/2017	E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	350	Alabama Water Watch (Coliscan Easygel)	8/2/2017	E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	50	Alabama Water Watch (Coliscan Easygel)	8/2/2017	E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	100	Alabama Water Watch (Coliscan Easygel)	8/2/2017	E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	0	Alabama Water Watch (Coliscan Easygel)	8/9/2017	D. Kimbrow	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	200	Alabama Water Watch (Coliscan Easygel)	8/9/2017	D. Kimbrow	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	200	Alabama Water Watch (Coliscan Easygel)	8/9/2017	D. Kimbrow	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	300	Alabama Water Watch (Coliscan Easygel)	8/9/2017	D. Kimbrow	11.55	7.46
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	750	Alabama Water Watch (Coliscan Easygel)	8/18/2017	D. Kimbrow	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	500	Alabama Water Watch (Coliscan Easygel)	8/18/2017	D. Kimbrow	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	800	Alabama Water Watch (Coliscan Easygel)	8/18/2017	D. Kimbrow	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	450	Alabama Water Watch (Coliscan Easygel)	8/18/2017	D. Kimbrow	18.55	11.98
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	8/23/2017	D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	650	Alabama Water Watch (Coliscan Easygel)	8/23/2017	D. Kimbrow	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	600	Alabama Water Watch (Coliscan Easygel)	8/23/2017	D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	8/23/2017	D. Kimbrow	10.64	6.87

Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	50	Alabama Water Watch (Coliscan Easygel)	8/31/2017	D. Kimbrow	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	150	Alabama Water Watch (Coliscan Easygel)	8/31/2017	D. Kimbrow	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	50	Alabama Water Watch (Coliscan Easygel)	8/31/2017	D. Kimbrow	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	150	Alabama Water Watch (Coliscan Easygel)	8/31/2017	D. Kimbrow	9.81	6.34
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	9/29/2017	E. Bankston	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	350	Alabama Water Watch (Coliscan Easygel)	9/29/2017	E. Bankston	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	9/29/2017	E. Bankston	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	150	Alabama Water Watch (Coliscan Easygel)	9/29/2017	E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	10/20/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	100	Alabama Water Watch (Coliscan Easygel)	10/20/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	250	Alabama Water Watch (Coliscan Easygel)	10/20/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	150	Alabama Water Watch (Coliscan Easygel)	10/20/2017	D. Kimbrow	14.42	9.32
Site Number	Sample Date	Sample Time	Sample Collected By	E. coli (cfu/100mL)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	0	Alabama Water Watch (Coliscan Easygel)	12/4/2017	D. Ballard	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	12/4/2017	D. Ballard	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	550	Alabama Water Watch (Coliscan Easygel)	12/4/2017	D. Ballard	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	300	Alabama Water Watch (Coliscan Easygel)	12/4/2017	D. Ballard	10.36	6.69

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard, D. Kimbrow	70.8	YSI 5560	4/18/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard, D. Kimbrow	69.1	YSI 5560	4/18/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard, D. Kimbrow	71.2	YSI 5560	4/18/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard, D. Kimbrow	71.2	YSI 5560	4/18/2017	D. Kimbrow	10.47	6.76
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	71.5	YSI 5560	5/16/2017	D. Ballard J. Adamson	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	72.1	YSI 5560	5/16/2017	D. Kimbrow J. Adamson	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	70.1	YSI 5560	5/16/2017	D. Kimbrow J. Adamson	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	72.8	YSI 5560	5/16/2017	D. Ballard J. Adamson	9.54	6.16
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	71.9	YSI 5560	6/8/2017	D. Ballard E. Bankston	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	73.1	YSI 5560	6/8/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	73.0	YSI 5560	6/8/2017	D. Ballard E. Bankston	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	76.2	YSI 5560	6/8/2017	D. Kimbrow E. Bankston	35.55	22.97
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	77.9	YSI 5560	6/13/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	74.1	YSI 5560	6/13/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	76.1	YSI 5560	6/13/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	77.3	YSI 5560	6/13/2017	D. Kimbrow E. Bankston	20.64	13.33
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	76.5	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	76.7	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	77.4	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	75.6	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	38.87	25.11

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	77.0	YSI 5560	6/28/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	70.9	YSI 5560	6/28/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	72.7	YSI 5560	6/28/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	77.0	YSI 5560	6/28/2017	D. Kimbrow	20.05	12.95
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	79.0	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	77.4	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	77.7	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	78.2	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	14.05	9.08
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	76.8	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	74.4	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	76.3	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	78.3	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	78.4	YSI 5560	8/8/2018	D. Ballard	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	76.3	YSI 5560	8/8/2018	D. Ballard	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	76.8	YSI 5560	8/8/2018	D. Ballard	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	79.0	YSI 5560	8/8/2018	D. Ballard	11.55	7.46
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	79.0	YSI 5560	8/16/2017	D. Ballard	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	78.1	YSI 5560	8/16/2017	D. Ballard	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	78.9	YSI 5560	8/16/2017	D. Ballard	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	79.2	YSI 5560	8/16/2017	D. Ballard	18.55	11.98
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	78.6	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	77.6	YSI 5560	8/22/2017	D. Kimbrow E. Bankston	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	77.1	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	80.1	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	10.64	6.87

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	73.7	YSI 5560	8/29/2017	D. Ballard	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	72.3	YSI 5560	8/29/2017	D. Ballard	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	72.2	YSI 5560	8/29/2017	D. Ballard	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	78.3	YSI 5560	8/29/2017	D. Ballard	9.81	6.34
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	74.0	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	72.6	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	72.8	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	77.2	YSI 5560	9/28/2017	D. Kimbrow E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	62.0	YSI 5560	10/19/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	63.9	YSI 5560	10/19/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	64.9	YSI 5560	10/19/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	69.3	YSI 5560	10/19/2017	D. Kimbrow	14.42	9.32
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	56.5	YSI 5560	11/30/2017	D. Kimbrow	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	57.8	YSI 5560	11/30/2017	D. Kimbrow	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	56.5	YSI 5560	11/30/2017	D. Kimbrow	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	66.4	YSI 5560	11/30/2017	D. Kimbrow	10.36	6.69
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard, D. Kimbrow	7.98	YSI 1001	4/18/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard, D. Kimbrow	7.90	YSI 1001	4/18/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard, D. Kimbrow	7.65	YSI 1001	4/18/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard, D. Kimbrow	7.37	YSI 1001	4/18/2017	D. Kimbrow	10.47	6.76
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	7.59	YSI 1001	5/16/2017	D. Ballard J. Adamson	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	7.76	YSI 1001	5/16/2017	D. Kimbrow J. Adamson	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	7.42	YSI 1001	5/16/2017	D. Kimbrow J. Adamson	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	7.38	YSI 1001	5/16/2017	D. Ballard J. Adamson	9.54	6.16

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	6.96	YSI 1001	6/8/2017	D. Ballard E. Bankston	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	7.46	YSI 1001	6/8/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	6.63	YSI 1001	6/8/2017	D. Ballard E. Bankston	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	7.34	YSI 1001	6/8/2017	D. Kimbrow E. Bankston	35.55	22.97
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	7.90	YSI 1001	6/13/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	7.60	YSI 1001	6/13/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	7.42	YSI 1001	6/13/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	7.56	YSI 1001	6/13/2017	D. Kimbrow E. Bankston	20.64	13.33
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	7.87	YSI 1001	6/23/2017	D. Ballard D. Kimbrow E. Bankston	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	7.60	YSI 1001	6/23/2017	D. Ballard D. Kimbrow E. Bankston	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	7.40	YSI 1001	6/23/2017	D. Ballard D. Kimbrow E. Bankston	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	7.55	YSI 1001	6/23/2017	D. Ballard D. Kimbrow E. Bankston	38.87	25.11
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	8.05	YSI 1001	6/28/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	7.57	YSI 1001	6/28/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	7.51	YSI 1001	6/28/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	7.57	YSI 1001	6/28/2017	D. Kimbrow	20.05	12.95
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	7.91	YSI 1001	7/7/2017	D. Ballard D. Kimbrow	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	7.69	YSI 1001	7/7/2017	D. Ballard D. Kimbrow	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	7.54	YSI 1001	7/7/2017	D. Ballard D. Kimbrow	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	7.53	YSI 1001	7/7/2017	D. Ballard D. Kimbrow	14.05	9.08

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	8.10	YSI 1001	8/1/2017	D. Kimbrow E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	7.87	YSI 1001	8/1/2017	D. Kimbrow E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	7.70	YSI 1001	8/1/2017	D. Kimbrow E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	7.52	YSI 1001	8/1/2017	D. Kimbrow E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	7.91	YSI 1001	8/8/2018	D. Ballard	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	7.72	YSI 1001	8/8/2018	D. Ballard	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	7.49	YSI 1001	8/8/2018	D. Ballard	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	7.55	YSI 1001	8/8/2018	D. Ballard	11.55	7.46
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	6.89	YSI 1001	8/16/2017	D. Ballard	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	7.40	YSI 1001	8/16/2017	D. Ballard	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	6.98	YSI 1001	8/16/2017	D. Ballard	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	6.63	YSI 1001	8/16/2017	D. Ballard	18.55	11.98
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	7.50	YSI 1001	8/22/2017	D. Ballard D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	7.72	YSI 1001	8/22/2017	D. Kimbrow E. Bankston	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	7.38	YSI 1001	8/22/2017	D. Ballard D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	7.34	YSI 1001	8/22/2017	D. Ballard D. Kimbrow	10.64	6.87
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	7.90	YSI 1001	8/29/2017	D. Ballard	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	7.88	YSI 1001	8/29/2017	D. Ballard	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	7.57	YSI 1001	8/29/2017	D. Ballard	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	7.53	YSI 1001	8/29/2017	D. Ballard	9.81	6.34
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	7.46	YSI 1001	9/28/2017	D. Kimbrow	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	7.51	YSI 1001	9/28/2017	D. Kimbrow	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	7.45	YSI 1001	9/28/2017	D. Kimbrow	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	7.18	YSI 1001	9/28/2017	D. Kimbrow E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	8.00	YSI 1001	10/19/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	7.82	YSI 1001	10/19/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	7.72	YSI 1001	10/19/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	7.65	YSI 1001	10/19/2017	D. Kimbrow	14.42	9.32

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	6.84	YSI 1001	11/30/2017	D. Kimbrow	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	7.34	YSI 1001	11/30/2017	D. Kimbrow	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	7.10	YSI 1001	11/30/2017	D. Kimbrow	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	6.97	YSI 1001	11/30/2017	D. Kimbrow	10.36	6.69
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard, D. Kimbrow	9.25	YSI 2003 polarographic	4/18/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard, D. Kimbrow	9.77	YSI 2003 polarographic	4/18/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard, D. Kimbrow	8.50	YSI 2003 polarographic	4/18/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard, D. Kimbrow	8.26	YSI 2003 polarographic	4/18/2017	D. Kimbrow	10.47	6.76
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	8.86	YSI 2003 polarographic	5/16/2017	D. Ballard J. Adamson	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	9.31	YSI 2003 polarographic	5/16/2017	D. Kimbrow J. Adamson	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	8.83	YSI 2003 polarographic	5/16/2017	D. Kimbrow J. Adamson	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	8.18	YSI 2003 polarographic	5/16/2017	D. Ballard J. Adamson	9.54	6.16
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	8.55	YSI 2003 polarographic	6/8/2017	D. Ballard E. Bankston	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	8.95	YSI 2003 polarographic	6/8/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	9.26	YSI 2003 polarographic	6/8/2017	D. Ballard E. Bankston	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	8.18	YSI 2003 polarographic	6/8/2017	D. Kimbrow E. Bankston	35.55	22.97
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	8.93	YSI 2003 polarographic	6/13/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	8.12	YSI 2003 polarographic	6/13/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	8.00	YSI 2003 polarographic	6/13/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	8.04	YSI 2003 polarographic	6/13/2017	D. Kimbrow E. Bankston	20.64	13.33

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	8.67	YSI 2003 polarographic	6/23/2017	D. Ballard D. Kimbrow E. Bankston	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	8.19	YSI 2003 polarographic	6/23/2017	D. Ballard D. Kimbrow E. Bankston	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	8.00	YSI 2003 polarographic	6/23/2017	D. Ballard D. Kimbrow E. Bankston	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	8.00	YSI 2003 polarographic	6/23/2017	D. Ballard D. Kimbrow E. Bankston	38.87	25.11
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	8.85	YSI 2003 polarographic	6/28/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	8.22	YSI 2003 polarographic	6/28/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	8.27	YSI 2003 polarographic	6/28/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	9.09	YSI 2003 polarographic	6/28/2017	D. Kimbrow	20.05	12.95
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	7.77	YSI 2003 polarographic	7/7/2017	D. Ballard D. Kimbrow	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	7.77	YSI 2003 polarographic	7/7/2017	D. Ballard D. Kimbrow	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	7.43	YSI 2003 polarographic	7/7/2017	D. Ballard D. Kimbrow	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	7.54	YSI 2003 polarographic	7/7/2017	D. Ballard D. Kimbrow	14.05	9.08
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	7.63	YSI 2003 polarographic	8/1/2017	D. Kimbrow E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	8.43	YSI 2003 polarographic	8/1/2017	D. Kimbrow E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	8.86	YSI 2003 polarographic	8/1/2017	D. Kimbrow E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	7.81	YSI 2003 polarographic	8/1/2017	D. Kimbrow E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	8.06	YSI 2003 polarographic	8/8/2018	D. Ballard	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	7.10	YSI 2003 polarographic	8/8/2018	D. Ballard	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	7.60	YSI 2003 polarographic	8/8/2018	D. Ballard	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	7.53	YSI 2003 polarographic	8/8/2018	D. Ballard	11.55	7.46

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	8.13	YSI 2003 polarographic	8/16/2017	D. Ballard	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	7.67	YSI 2003 polarographic	8/16/2017	D. Ballard	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	7.85	YSI 2003 polarographic	8/16/2017	D. Ballard	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	7.88	YSI 2003 polarographic	8/16/2017	D. Ballard	18.55	11.98
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	7.44	YSI 2003 polarographic	8/22/2017	D. Ballard D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	7.64	YSI 2003 polarographic	8/22/2017	D. Kimbrow E. Bankston	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	7.46	YSI 2003 polarographic	8/22/2017	D. Ballard D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	6.77	YSI 2003 polarographic	8/22/2017	D. Ballard D. Kimbrow	10.64	6.87
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	7.59	YSI 2003 polarographic	8/29/2017	D. Ballard	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	7.13	YSI 2003 polarographic	8/29/2017	D. Ballard	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	7.00	YSI 2003 polarographic	8/29/2017	D. Ballard	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	6.87	YSI 2003 polarographic	8/29/2017	D. Ballard	9.81	6.34
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	7.74	YSI 2003 polarographic	9/28/2017	D. Kimbrow	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	7.85	YSI 2003 polarographic	9/28/2017	D. Kimbrow	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	7.42	YSI 2003 polarographic	9/28/2017	D. Kimbrow	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	7.49	YSI 2003 polarographic	9/28/2017	D. Kimbrow E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	10.30	YSI 2003 polarographic	10/19/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	9.91	YSI 2003 polarographic	10/19/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	9.87	YSI 2003 polarographic	10/19/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	8.52	YSI 2003 polarographic	10/19/2017	D. Kimbrow	14.42	9.32

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	11.64	YSI 2003 polarographic	11/30/2017	D. Kimbrow	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	10.48	YSI 2003 polarographic	11/30/2017	D. Kimbrow	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	10.85	YSI 2003 polarographic	11/30/2017	D. Kimbrow	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	9.00	YSI 2003 polarographic	11/30/2017	D. Kimbrow	10.36	6.69
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard, D. Kimbrow	204.4	YSI 5560	4/18/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard, D. Kimbrow	328.0	YSI 5560	4/18/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard, D. Kimbrow	211.5	YSI 5560	4/18/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard, D. Kimbrow	334.2	YSI 5560	4/18/2017	D. Kimbrow	10.47	6.76
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	166	YSI 5560	5/16/2017	D. Ballard J. Adamson	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	320	YSI 5560	5/16/2017	D. Kimbrow J. Adamson	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	181	YSI 5560	5/16/2017	D. Kimbrow J. Adamson	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	300	YSI 5560	5/16/2017	D. Ballard J. Adamson	9.54	6.16
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	145	YSI 5560	6/8/2017	D. Ballard E. Bankston	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	271	YSI 5560	6/8/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	151	YSI 5560	6/8/2017	D. Ballard E. Bankston	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	234	YSI 5560	6/8/2017	D. Kimbrow E. Bankston	35.55	22.97
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	148	YSI 5560	6/13/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	274	YSI 5560	6/13/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	149	YSI 5560	6/13/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	256	YSI 5560	6/13/2017	D. Kimbrow E. Bankston	20.64	13.33

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	145	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	276	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	153	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	214	YSI 5560	6/23/2017	D. Ballard D. Kimbrow E. Bankston	38.87	25.11
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	177	YSI 5560	6/28/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	286	YSI 5560	6/28/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	187	YSI 5560	6/28/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	268	YSI 5560	6/28/2017	D. Kimbrow	20.05	12.95
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	200	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	323	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	207	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	304	YSI 5560	7/7/2017	D. Ballard D. Kimbrow	14.05	9.08
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	166	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	315	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	191	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	300	YSI 5560	8/1/2017	D. Kimbrow E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	170	YSI 5560	8/8/2018	D. Ballard	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	305	YSI 5560	8/8/2018	D. Ballard	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	146	YSI 5560	8/8/2018	D. Ballard	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	307	YSI 5560	8/8/2018	D. Ballard	11.55	7.46
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	109	YSI 5560	8/16/2017	D. Ballard	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	215	YSI 5560	8/16/2017	D. Ballard	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	121	YSI 5560	8/16/2017	D. Ballard	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	256	YSI 5560	8/16/2017	D. Ballard	18.55	11.98

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	203	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	364	YSI 5560	8/22/2017	D. Kimbrow E. Bankston	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	233	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	335	YSI 5560	8/22/2017	D. Ballard D. Kimbrow	10.64	6.87
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	208	YSI 5560	8/29/2017	D. Ballard	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	373	YSI 5560	8/29/2017	D. Ballard	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	242	YSI 5560	8/29/2017	D. Ballard	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	360	YSI 5560	8/29/2017	D. Ballard	9.81	6.34
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	204	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	319	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	208	YSI 5560	9/28/2017	D. Kimbrow	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	334	YSI 5560	9/28/2017	D. Kimbrow E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	202	YSI 5560	10/19/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	316	YSI 5560	10/19/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	202	YSI 5560	10/19/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	306	YSI 5560	10/19/2017	D. Kimbrow	14.42	9.32
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	200	YSI 5560	11/30/2017	D. Kimbrow	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	309	YSI 5560	11/30/2017	D. Kimbrow	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	201	YSI 5560	11/30/2017	D. Kimbrow	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	320	YSI 5560	11/30/2017	D. Kimbrow	10.36	6.69
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	4/18/2017	1135	D. Ballard, D. Kimbrow	5.81	SM 2130 B	4/18/2017	D. Kimbrow	2.31	1.49
PKML-2	4/18/2017	1455	D. Ballard, D. Kimbrow	1.56	SM 2130 B	4/18/2017	D. Kimbrow	0.6	0.39
PKML-5	4/18/2017	1413	D. Ballard, D. Kimbrow	4.51	SM 2130 B	4/18/2017	D. Kimbrow	2.07	1.34
PM-3	4/18/2017	1030	D. Ballard, D. Kimbrow	2.43	SM 2130 B	4/18/2017	D. Kimbrow	10.47	6.76

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	5/16/2017	0950	D. Ballard J. Adamson	8.72	SM 2130 B	5/16/2017	D. Ballard J. Adamson	2.95	1.91
PKML-2	5/16/2017	1305	D. Kimbrow J. Adamson	3.21	SM 2130 B	5/16/2017	D. Kimbrow J. Adamson	0.48	0.31
PKML-5	5/16/2017	1120	D. Kimbrow J. Adamson	8.20	SM 2130 B	5/16/2017	D. Kimbrow J. Adamson	2.67	1.72
PM-3	5/16/2017	0920	D. Ballard J. Adamson	3.46	SM 2130 B	5/16/2017	D. Ballard J. Adamson	9.54	6.16
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/8/2017	1020	D. Ballard E. Bankston	15.3	SM 2130 B	6/8/2017	D. Ballard E. Bankston	12	7.75
PKML-2	6/8/2017	1410	D. Ballard	7.48	SM 2130 B	6/8/2017	D. Ballard	1.8	1.16
PKML-5	6/8/2017	1200	D. Ballard E. Bankston	13.9	SM 2130 B	6/8/2017	D. Ballard E. Bankston	7.67	4.95
PM-3	6/8/2017	1430	D. Kimbrow E. Bankston	9.49	SM 2130 B	6/8/2017	D. Kimbrow E. Bankston	35.55	22.97
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/13/2017	1420	D. Kimbrow	15.0	SM 2130 B	6/13/2017	D. Kimbrow	8.65	5.59
PKML-2	6/13/2017	1555	D. Kimbrow	3.15	SM 2130 B	6/13/2017	D. Kimbrow	0.94	0.61
PKML-5	6/13/2017	1510	D. Kimbrow	11.3	SM 2130 B	6/13/2017	D. Kimbrow	5.35	3.46
PM-3	6/13/2017	1310	D. Kimbrow E. Bankston	7.63	SM 2130 B	6/13/2017	D. Kimbrow E. Bankston	20.64	13.33
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/23/2017	1109	D. Ballard D. Kimbrow E. Bankston	8.61	SM 2130 B	6/23/2017	D. Ballard D. Kimbrow E. Bankston	20.79	13.43
PKML-2	6/23/2017	1440	D. Ballard D. Kimbrow E. Bankston	5.27	SM 2130 B	6/23/2017	D. Ballard D. Kimbrow E. Bankston	2.56	1.65
PKML-5	6/23/2017	1352	D. Ballard D. Kimbrow E. Bankston	7.61	SM 2130 B	6/23/2017	D. Ballard D. Kimbrow E. Bankston	14.28	9.22
PM-3	6/23/2017	0953	D. Ballard D. Kimbrow E. Bankston	6.51	SM 2130 B	6/23/2017	D. Ballard D. Kimbrow E. Bankston	38.87	25.11
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	6/28/2017	1250	D. Kimbrow	3.94	SM 2130 B	6/28/2017	D. Kimbrow	8.16	5.27
PKML-2	6/28/2017	0915	D. Kimbrow	3.14	SM 2130 B	6/28/2017	D. Kimbrow	1.57	1.01
PKML-5	6/28/2017	1055	D. Kimbrow	3.92	SM 2130 B	6/28/2017	D. Kimbrow	6.49	4.19
PM-3	6/28/2017	1220	D. Kimbrow	2.89	SM 2130 B	6/28/2017	D. Kimbrow	20.05	12.95

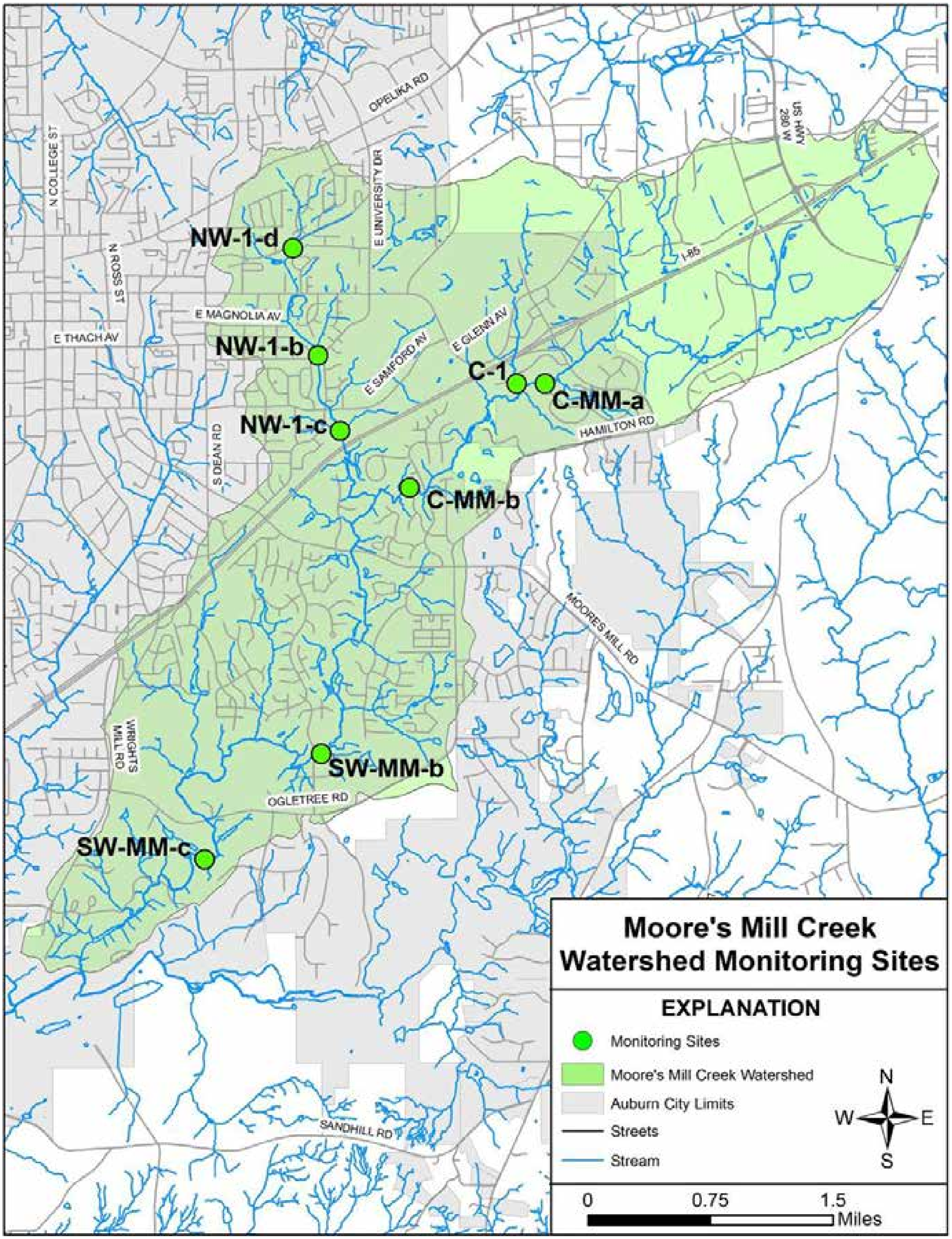
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	7/7/2017	1000	D. Ballard D. Kimbrow	6.46	SM 2130 B	7/7/2017	D. Ballard D. Kimbrow	5.44	3.51
PKML-2	7/7/2017	1110	D. Ballard D. Kimbrow	2.35	SM 2130 B	7/7/2017	D. Ballard D. Kimbrow	1.05	0.68
PKML-5	7/7/2017	1030	D. Ballard D. Kimbrow	3.52	SM 2130 B	7/7/2017	D. Ballard D. Kimbrow	3.71	2.40
PM-3	7/7/2017	0900	D. Ballard D. Kimbrow	2.87	SM 2130 B	7/7/2017	D. Ballard D. Kimbrow	14.05	9.08
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/1/2017	1200	D. Kimbrow E. Bankston	4.50	SM 2130 B	8/1/2017	D. Kimbrow E. Bankston	3.38	2.18
PKML-2	8/1/2017	1505	D. Kimbrow E. Bankston	2.97	SM 2130 B	8/1/2017	D. Kimbrow E. Bankston	meter error	meter error
PKML-5	8/1/2017	1415	D. Kimbrow E. Bankston	3.39	SM 2130 B	8/1/2017	D. Kimbrow E. Bankston	2.16	1.40
PM-3	8/1/2017	1050	D. Kimbrow E. Bankston	2.29	SM 2130 B	8/1/2017	D. Kimbrow E. Bankston	15.39	9.94
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/8/2018	1130	D. Ballard	5.79	SM 2130 B	8/8/2018	D. Ballard	3.58	2.31
PKML-2	8/8/2018	1230	D. Ballard	2.50	SM 2130 B	8/8/2018	D. Ballard	0.65	0.42
PKML-5	8/8/2018	1200	D. Ballard	4.83	SM 2130 B	8/8/2018	D. Ballard	2.13	1.38
PM-3	8/8/2018	0950	D. Ballard	3.96	SM 2130 B	8/8/2018	D. Ballard	11.55	7.46
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/16/2017	1058	D. Ballard	29.7	SM 2130 B	8/16/2017	D. Ballard	6.29	4.06
PKML-2	8/16/2017	1230	D. Ballard	7.20	SM 2130 B	8/16/2017	D. Ballard	1.07	0.69
PKML-5	8/16/2017	1142	D. Ballard	15.0	SM 2130 B	8/16/2017	D. Ballard	4.31	2.78
PM-3	8/16/2017	1000	D. Ballard	14.3	SM 2130 B	8/16/2017	D. Ballard	18.55	11.98
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/22/2017	0954	D. Ballard D. Kimbrow	3.54	SM 2130 B	8/22/2017	D. Ballard D. Kimbrow	1.53	0.99
PKML-2	8/22/2017	1125	D. Kimbrow E. Bankston	2.16	SM 2130 B	8/22/2017	D. Kimbrow E. Bankston	0.63	0.41
PKML-5	8/22/2017	1041	D. Ballard D. Kimbrow	3.00	SM 2130 B	8/22/2017	D. Ballard D. Kimbrow	1.57	1.01
PM-3	8/22/2017	0902	D. Ballard D. Kimbrow	2.82	SM 2130 B	8/22/2017	D. Ballard D. Kimbrow	10.64	6.87
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	8/29/2017	0944	D. Ballard	2.53	SM 2130 B	8/29/2017	D. Ballard	1.38	0.89
PKML-2	8/29/2017	1108	D. Ballard	1.94	SM 2130 B	8/29/2017	D. Ballard	0.49	0.32
PKML-5	8/29/2017	1025	D. Ballard	2.57	SM 2130 B	8/29/2017	D. Ballard	1.08	0.70
PM-3	8/29/2017	0910	D. Ballard	1.60	SM 2130 B	8/29/2017	D. Ballard	9.81	6.34

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	9/28/2017	1000	D. Kimbrow	2.71	SM 2130 B	9/28/2017	D. Kimbrow	meter error	meter error
PKML-2	9/28/2017	1030	D. Kimbrow	1.70	SM 2130 B	9/28/2017	D. Kimbrow	meter error	meter error
PKML-5	9/28/2017	1015	D. Kimbrow	2.43	SM 2130 B	9/28/2017	D. Kimbrow	meter error	meter error
PM-3	9/28/2017	0903	D. Kimbrow E. Bankston	1.93	SM 2130 B	9/28/2017	D. Kimbrow E. Bankston	meter error	meter error
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	10/19/2017	1045	D. Kimbrow	3.30	SM 2130 B	10/19/2017	D. Kimbrow	4.36	2.82
PKML-2	10/19/2017	1400	D. Kimbrow	2.27	SM 2130 B	10/19/2017	D. Kimbrow	0.84	0.54
PKML-5	10/19/2017	1340	D. Kimbrow	2.61	SM 2130 B	10/19/2017	D. Kimbrow	3.47	2.24
PM-3	10/19/2017	0935	D. Kimbrow	2.25	SM 2130 B	10/19/2017	D. Kimbrow	14.42	9.32
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By	Stream-flow (cfs)	Stream-flow (MGD)
PKML-1	11/30/2017	1025	D. Kimbrow	3.86	SM 2130 B	11/30/2017	D. Kimbrow	2.17	1.40
PKML-2	11/30/2017	1155	D. Kimbrow	0.74	SM 2130 B	11/30/2017	D. Kimbrow	meter error	meter error
PKML-5	11/30/2017	1135	D. Kimbrow	1.62	SM 2130 B	11/30/2017	D. Kimbrow	meter error	meter error
PM-3	11/30/2017	0920	D. Kimbrow	1.68	SM 2130 B	11/30/2017	D. Kimbrow	10.36	6.69

2.5 Moore’s Mill Creek Compliance Monitoring Data

Moore’s Mill Creek was placed on the draft 303(d) list for siltation in 1998, and has been on the final 303(d) list since 2000. The impaired reach is 10.51 mi. and includes all waters from its source to its confluence with Chewacla Creek. Habitat degradation due to sedimentation/siltation is the impairment in Moore’s Mill Creek. Potential sources of the impairment are listed as land development and urban runoff/storm sewers. The Moore’s Mill Creek Watershed Management Plan was completed in 2008. This plan outlined several objectives aimed to reduce sedimentation and mitigate habitat degradation. Included in the plan were geomorphic surveys and Bank Erosion Hazard Index (BEHI) assessments of stream reaches on both the main stem and tributaries throughout the watershed. Findings from these geomorphic surveys and BEHI assessments identified in-stream sediment loading from streambank erosion as a significant contributor to the impairment. The watershed management plan recommended continued monitoring of these sites to evaluate the success of future efforts aimed to reduce bank erosion.

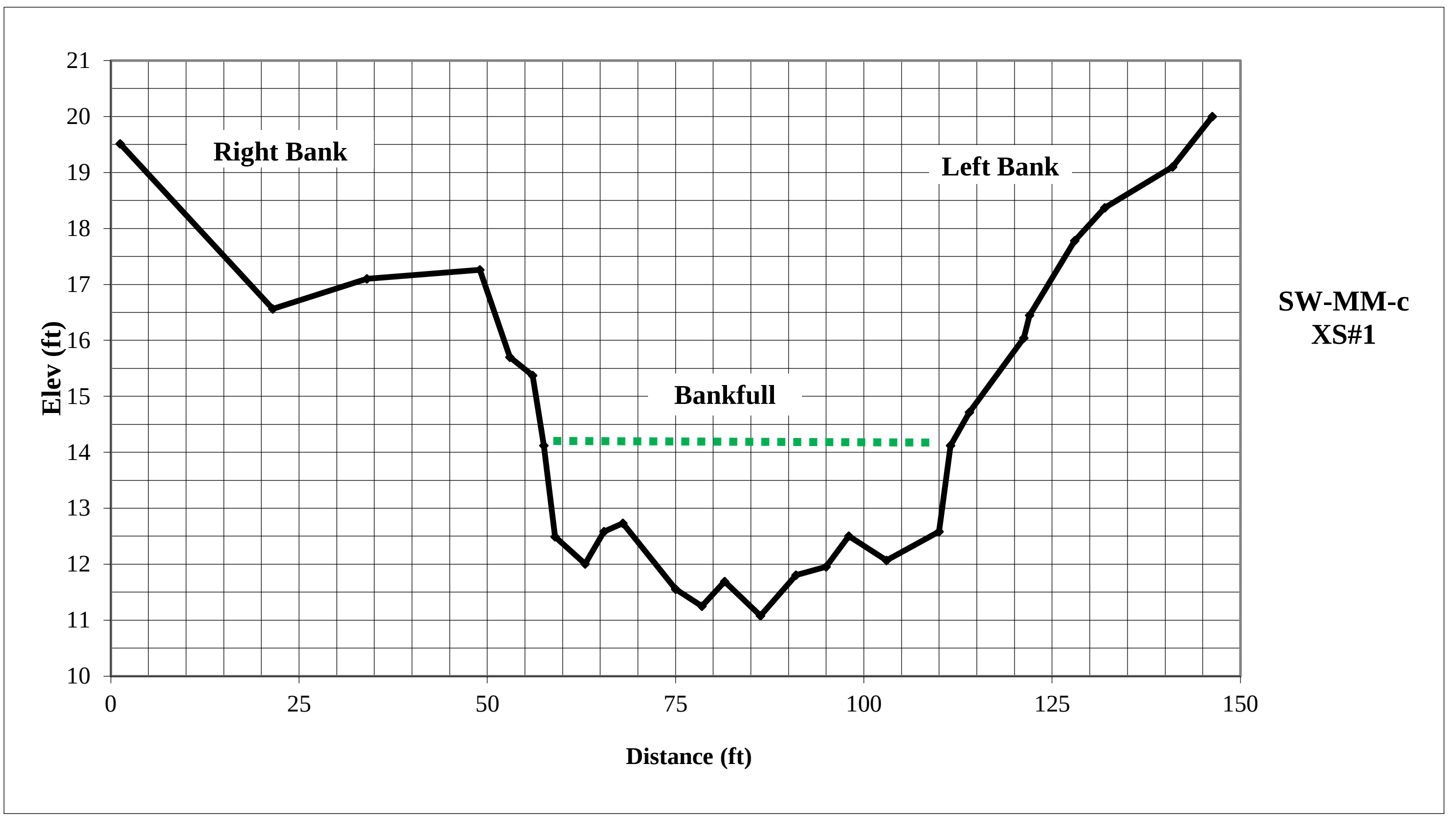
The City makes reasonable efforts to monitor streambank erosion at eight (8) reaches in the Moore’s Mill Creek watershed with annual stream geomorphic surveys. These annual surveys measure geomorphic parameters that are used as indicators of stability of a stream reach. A stream condition rapid assessment is performed annually at each of the 8 reaches. The stream condition rapid assessment was developed with a grant from EPA (EPA Region IV Wetlands Program Development Grant CD00D01412, "Eco-Morphological Mitigation Design and Assessment Tools for the Alabama and Tennessee Appalachian Plateau”), and rates stream condition and function based on eco-geomorphic indicators. In addition, quarterly samples of total suspended solids (TSS), water temperature, pH, dissolved oxygen, specific conductance, and turbidity are measured in-situ at each site. Additionally, the City continues to reasonably support and participate in studies of water quality in the Moore’s Mill Creek watershed. Sample reaches for monitoring in the Moore’s Mill Creek watershed are shown below.



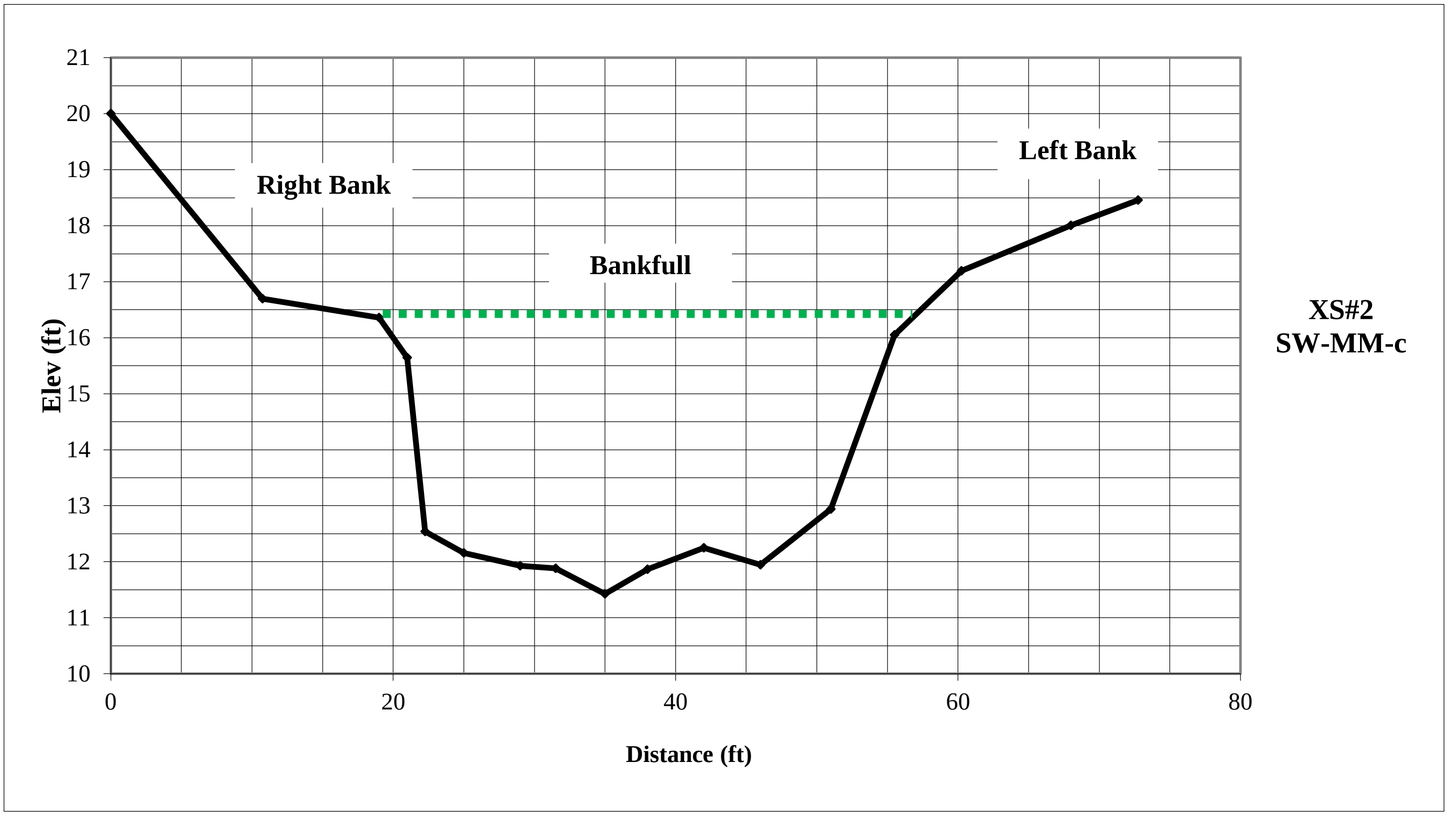
Moore’s Mill Creek Watershed Monitoring Sites

Site	Stream Condition and Function	Score (0 – 2)*
SW-MM-c	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	1
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	18

Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-c	1	Bankfull Area	109	$ft.^2$
		Bankfull Width	54	ft.
		Bankfull Depth	2.0	ft.
		Maximum Bankfull Depth	3.04	ft.
		Low Bank Height	6.18	ft.
		Width of the Flood-prone Area	140	ft.
		Width to Depth Ratio	26.7	n/a
		Bank Height Ratio	2.0	n/a
		Entrenchment Ratio	2.6	n/a

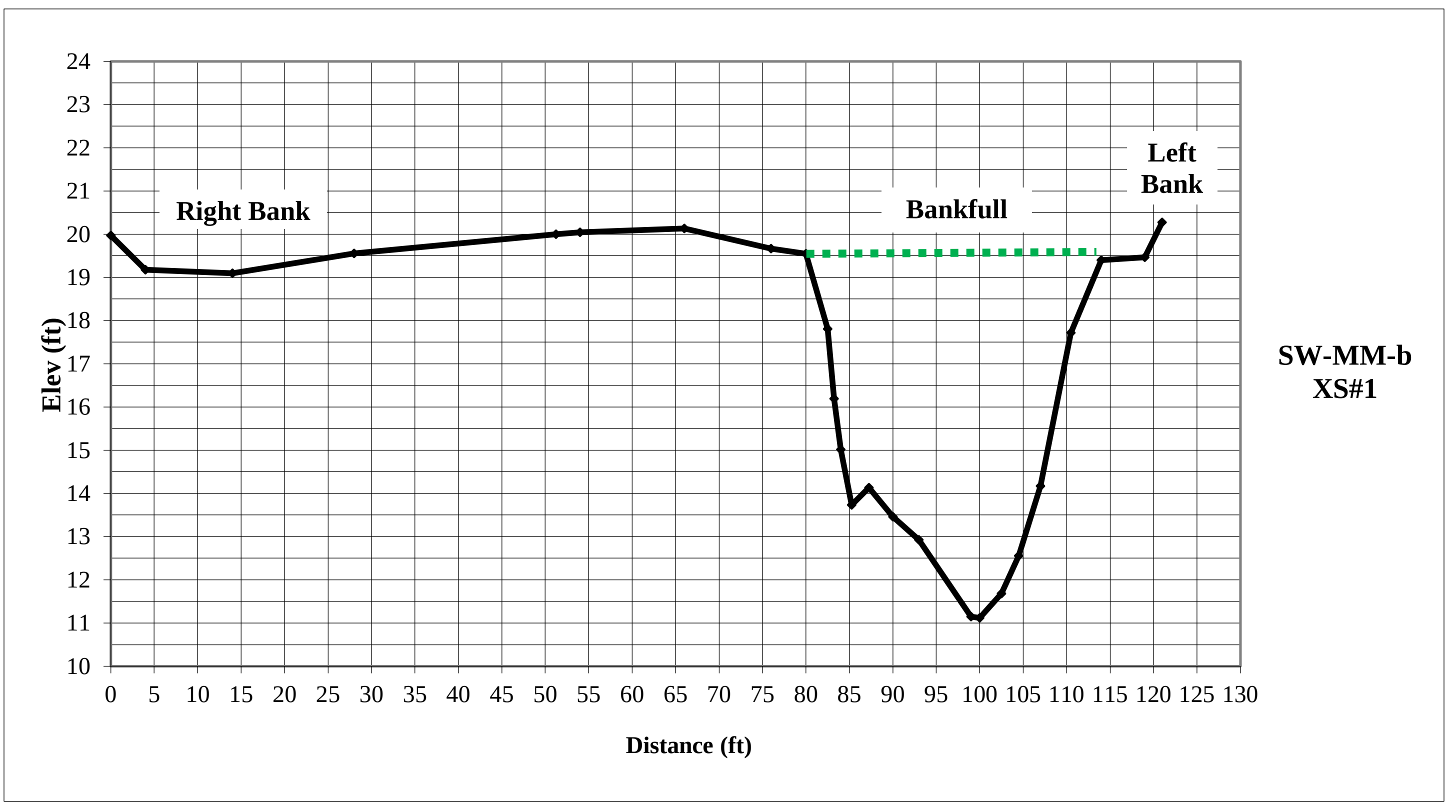


Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-c	2	Bankfull Area	129	ft.^{2}
		Bankfull Width	35	ft.
		Bankfull Depth	3.7	ft.
		Maximum Bankfull Depth	4.94	ft.
		Low Bank Height	7.04	ft.
		Width of the Flood-prone Area	220	ft.
		Width to Depth Ratio	9.3	n/a
		Bank Height Ratio	1.4	n/a
		Entrenchment Ratio	6.4	n/a

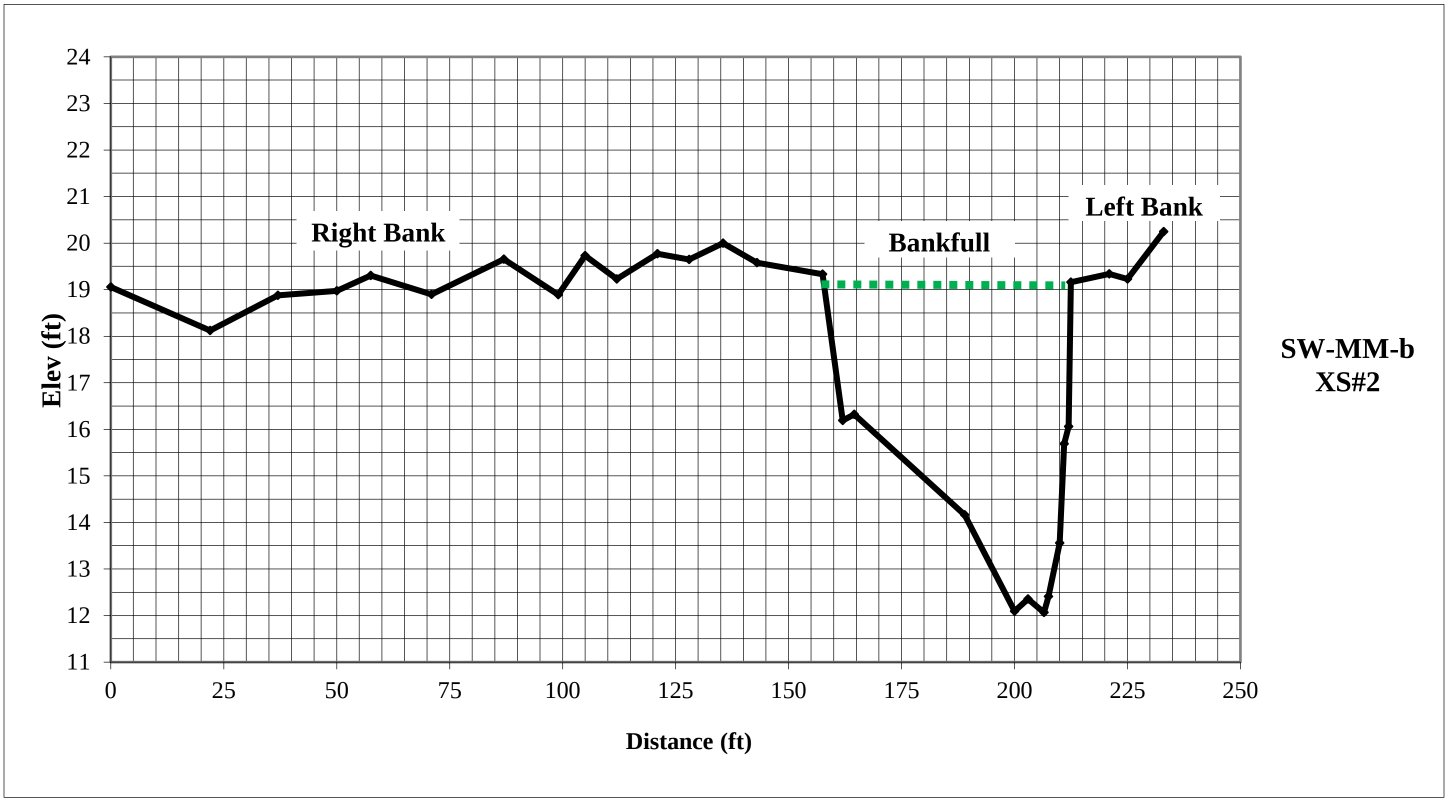


Site	Stream Condition and Function	Score (0 – 2)*
SW-MM-b	Upstream watershed impacts from stormwater, wastewater, or sediment	0
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	1
	Channel bed profile related to longitudinal profile measurements	1
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	12

Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-b	1	Bankfull Area	178	$ft.^2$
		Bankfull Width	34	ft.
		Bankfull Depth	5.2	ft.
		Maximum Bankfull Depth	8.4	ft.
		Low Bank Height	9.02	ft.
		Width of the Flood-prone Area	450	ft.
		Width to Depth Ratio	6.5	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	13.2	n/a

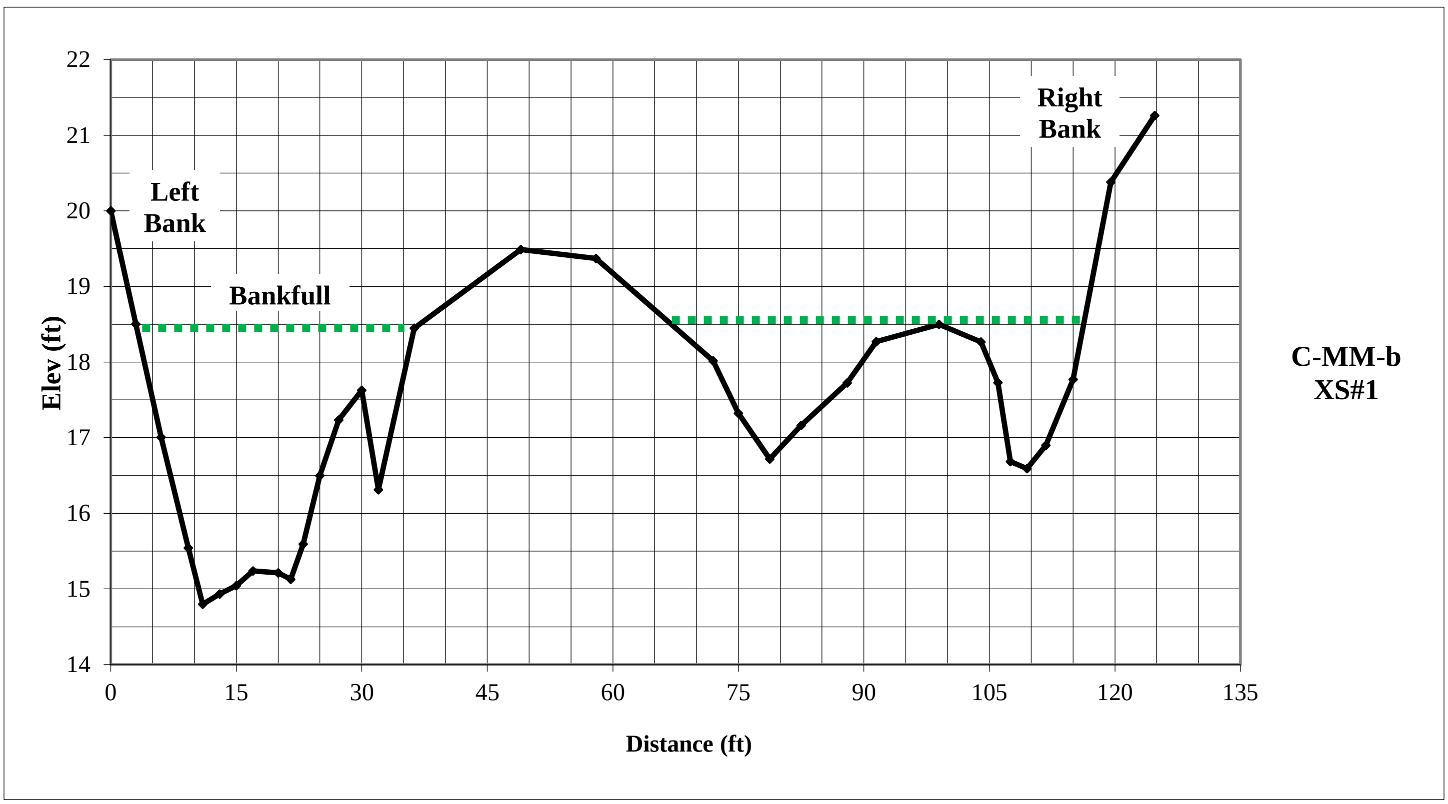


Site	Cross-Section	Geomorphic Parameter	Value	Units
SW-MM-b	2	Bankfull Area	303	$ft.^2$
		Bankfull Width	55	ft.
		Bankfull Depth	5.5	ft.
		Maximum Bankfull Depth	7.3	ft.
		Low Bank Height	7.93	ft.
		Width of the Flood-prone Area	425	ft.
		Width to Depth Ratio	10.0	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	7.7	n/a

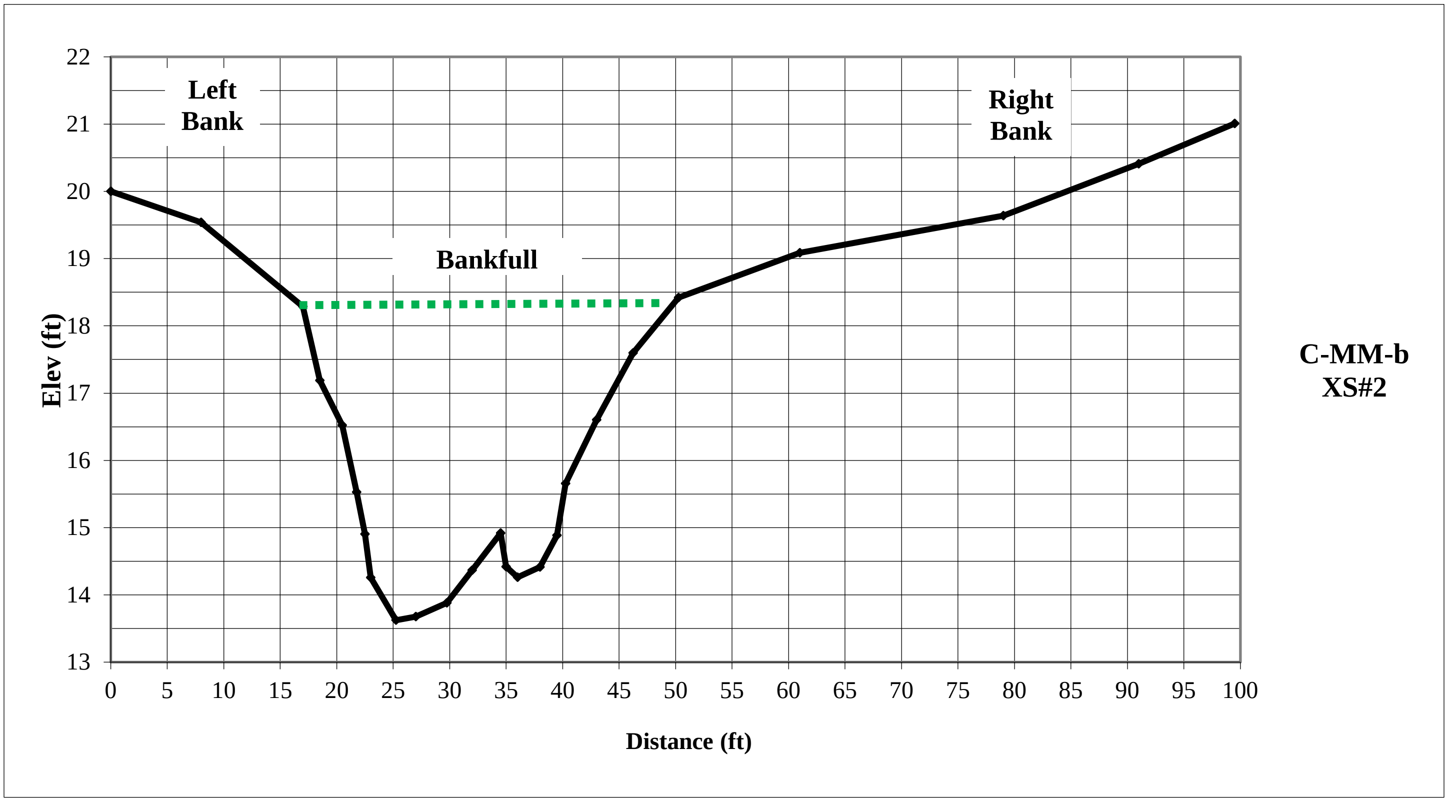


Site	Stream Condition and Function	Score (0 – 2)*
C-MM-b	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	16

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-b	1	Bankfull Area	60	$ft.^2$
		Bankfull Width	27	ft.
		Bankfull Depth	2.2	ft.
		Maximum Bankfull Depth	3.7	ft.
		Low Bank Height	4.69	ft.
		Width of the Flood-prone Area	135	ft.
		Width to Depth Ratio	12.1	n/a
		Bank Height Ratio	1.3	n/a
		Entrenchment Ratio	5.0	n/a

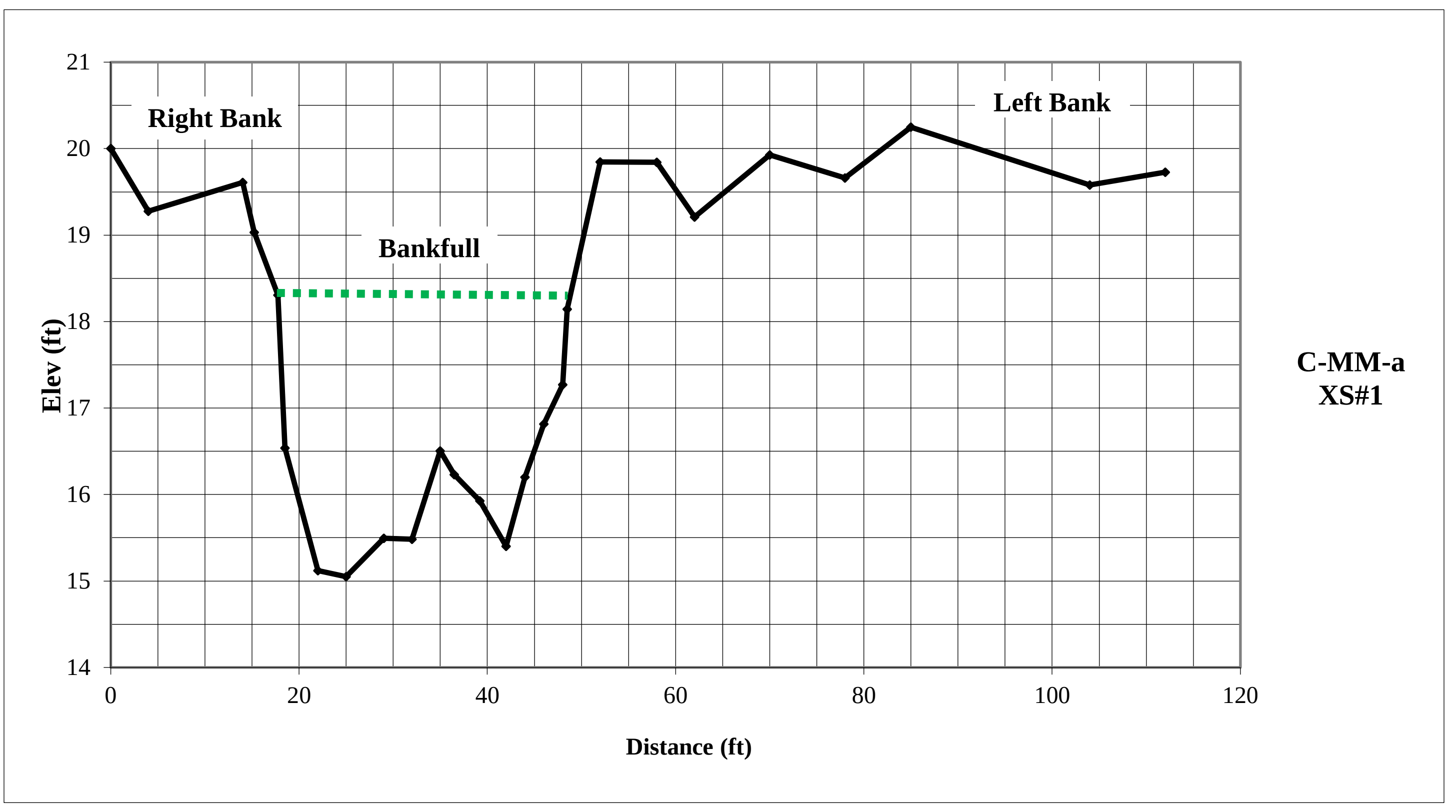


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-b	2	Bankfull Area	89	ft.^{2}
		Bankfull Width	29	ft.
		Bankfull Depth	3.0	ft.
		Maximum Bankfull Depth	4.7	ft.
		Low Bank Height	6.38	ft.
		Width of the Flood-prone Area	315	ft.
		Width to Depth Ratio	9.6	n/a
		Bank Height Ratio	1.4	n/a
		Entrenchment Ratio	10.8	n/a

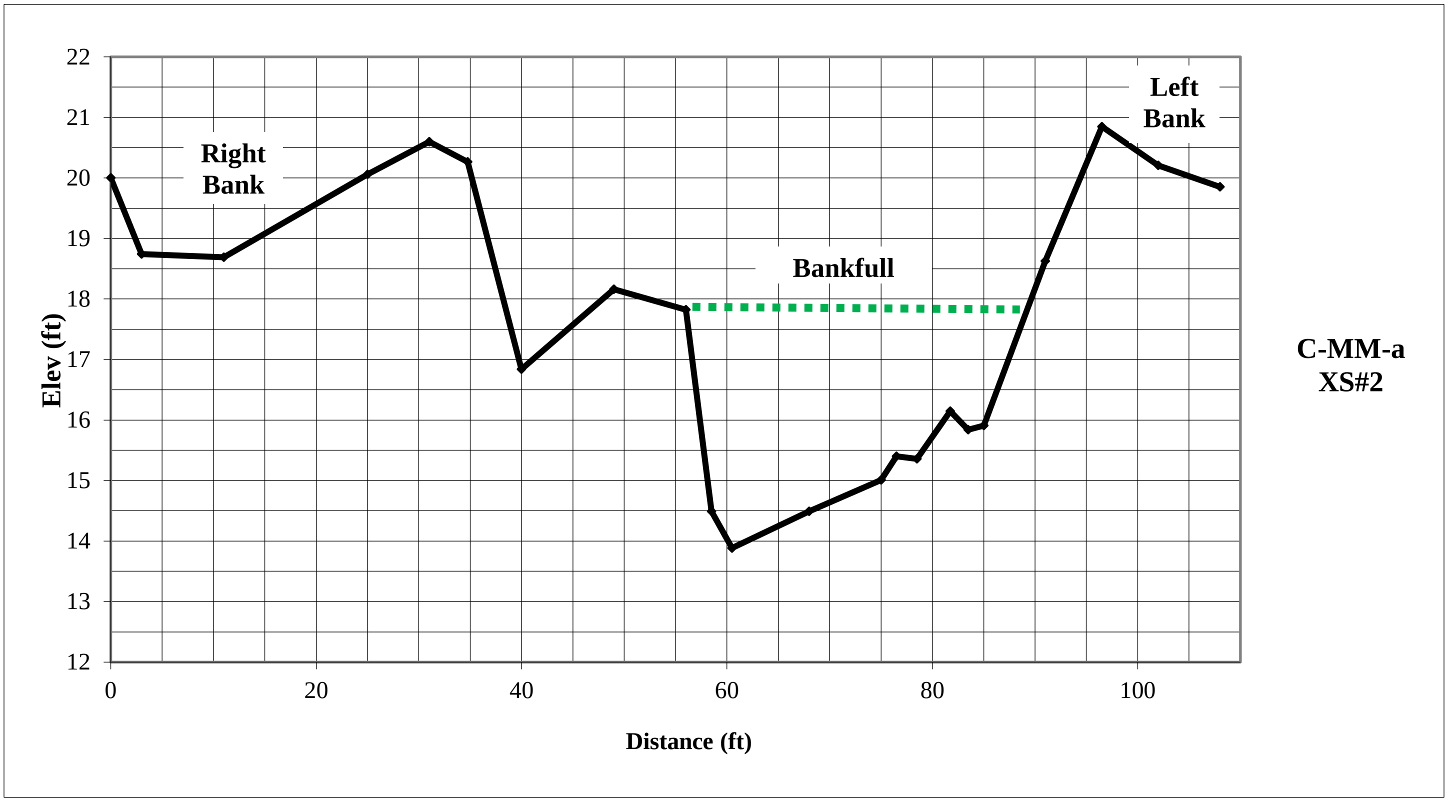


Site	Stream Condition and Function	Score (0 – 2)*
C-MM-a	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	0
	Channel bed profile related to longitudinal profile measurements	0
	Streambank stability and protection from erosion	2
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	1
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	12

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-a	1	Bankfull Area	74	ft.^{2}
		Bankfull Width	31	ft.
		Bankfull Depth	2.4	ft.
		Maximum Bankfull Depth	3.3	ft.
		Low Bank Height	4.8	ft.
		Width of the Flood-prone Area	365	ft.
		Width to Depth Ratio	12.7	n/a
		Bank Height Ratio	1.5	n/a
		Entrenchment Ratio	11.9	n/a

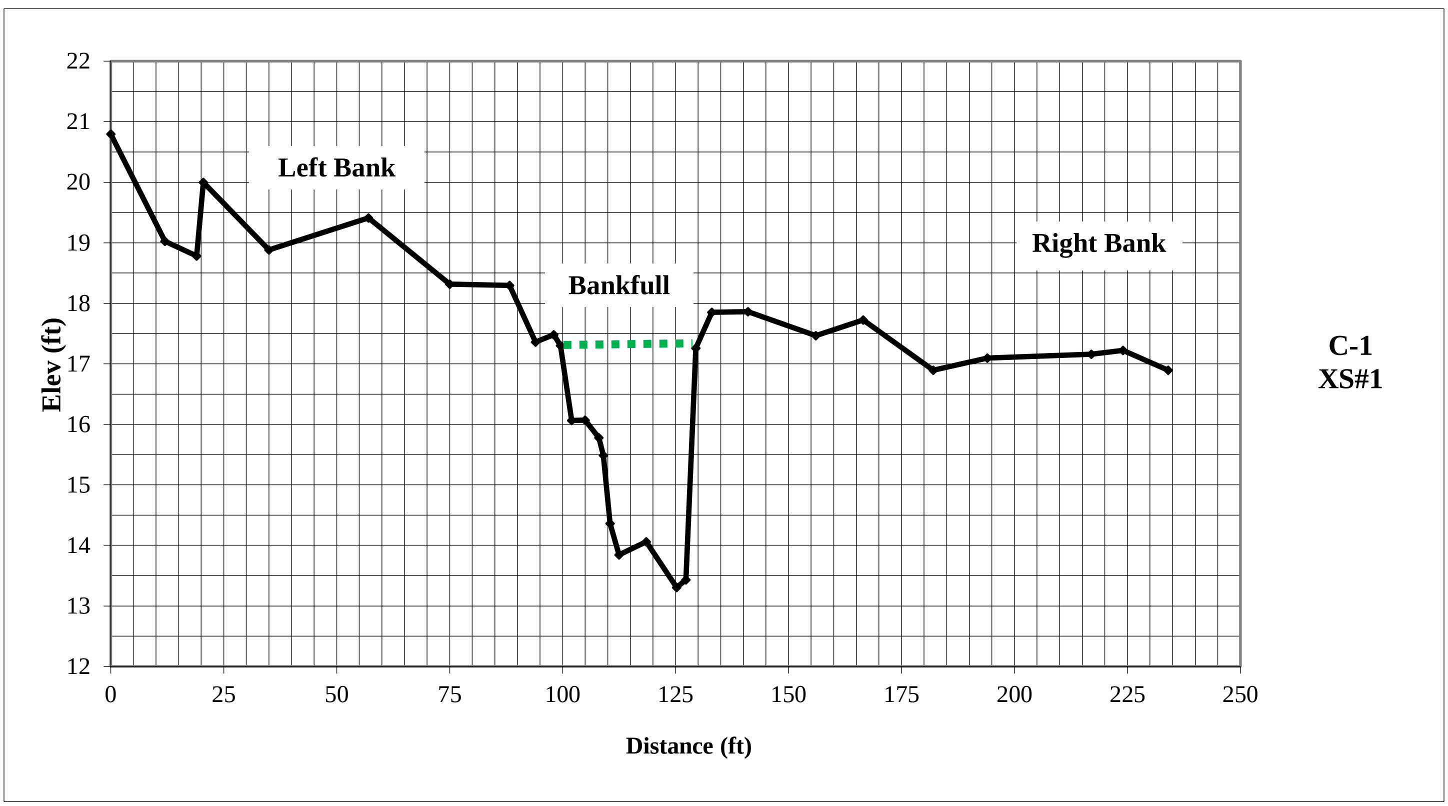


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-MM-a	2	Bankfull Area	86	$ft.^2$
		Bankfull Width	35	ft.
		Bankfull Depth	2.5	ft.
		Maximum Bankfull Depth	3.9	ft.
		Low Bank Height	6.71	ft.
		Width of the Flood-prone Area	320	ft.
		Width to Depth Ratio	14.2	n/a
		Bank Height Ratio	1.7	n/a
		Entrenchment Ratio	9.1	n/a

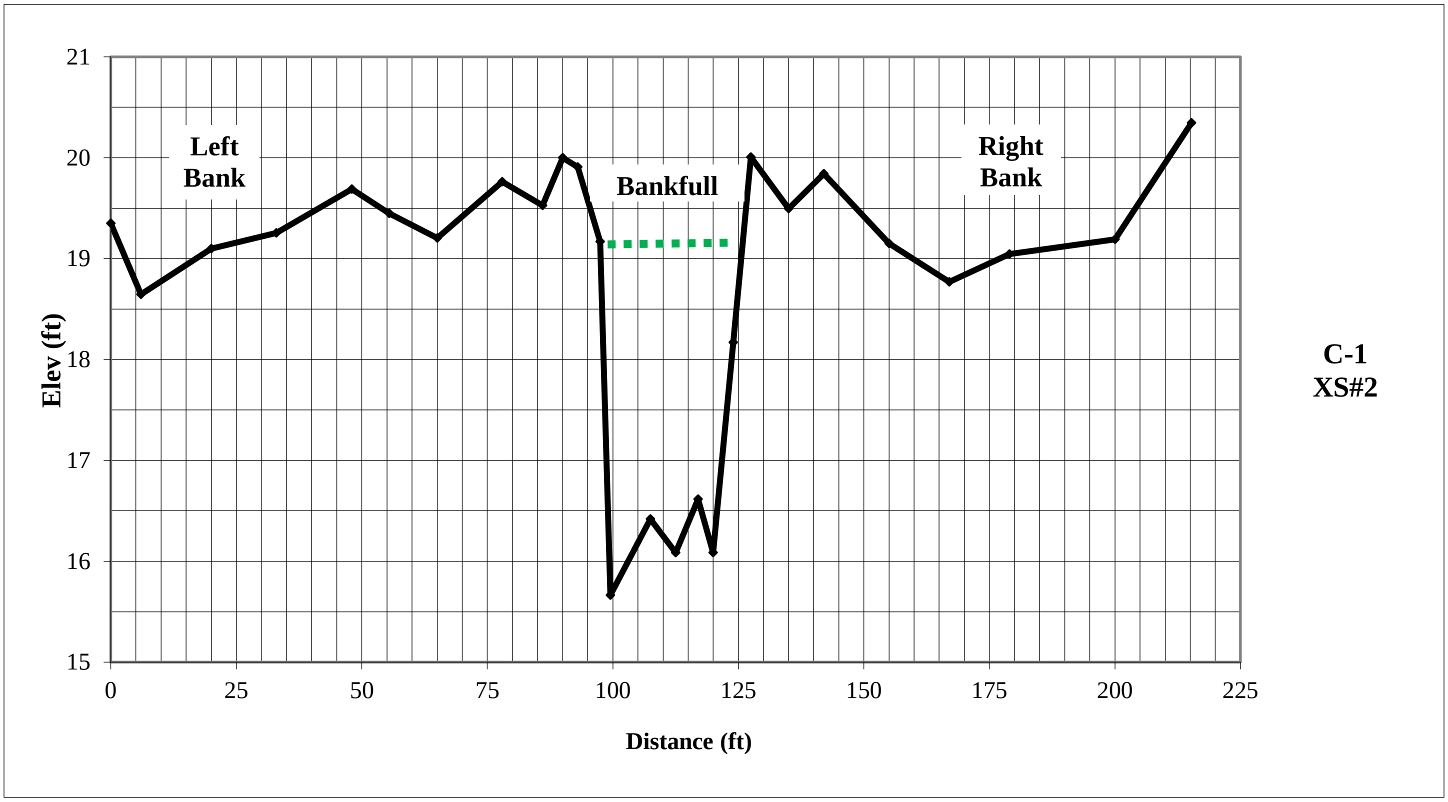


Site	Stream Condition and Function	Score (0 – 2)*
C-1	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	2
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	19

Site	Cross-Section	Geomorphic Parameter	Value	Units
C-1	1	Bankfull Area	79	$ft.^2$
		Bankfull Width	30	ft.
		Bankfull Depth	2.6	ft.
		Maximum Bankfull Depth	4.0	ft.
		Low Bank Height	5	ft.
		Width of the Flood-prone Area	180	ft.
		Width to Depth Ratio	11.4	n/a
		Bank Height Ratio	1.3	n/a
		Entrenchment Ratio	6.0	n/a

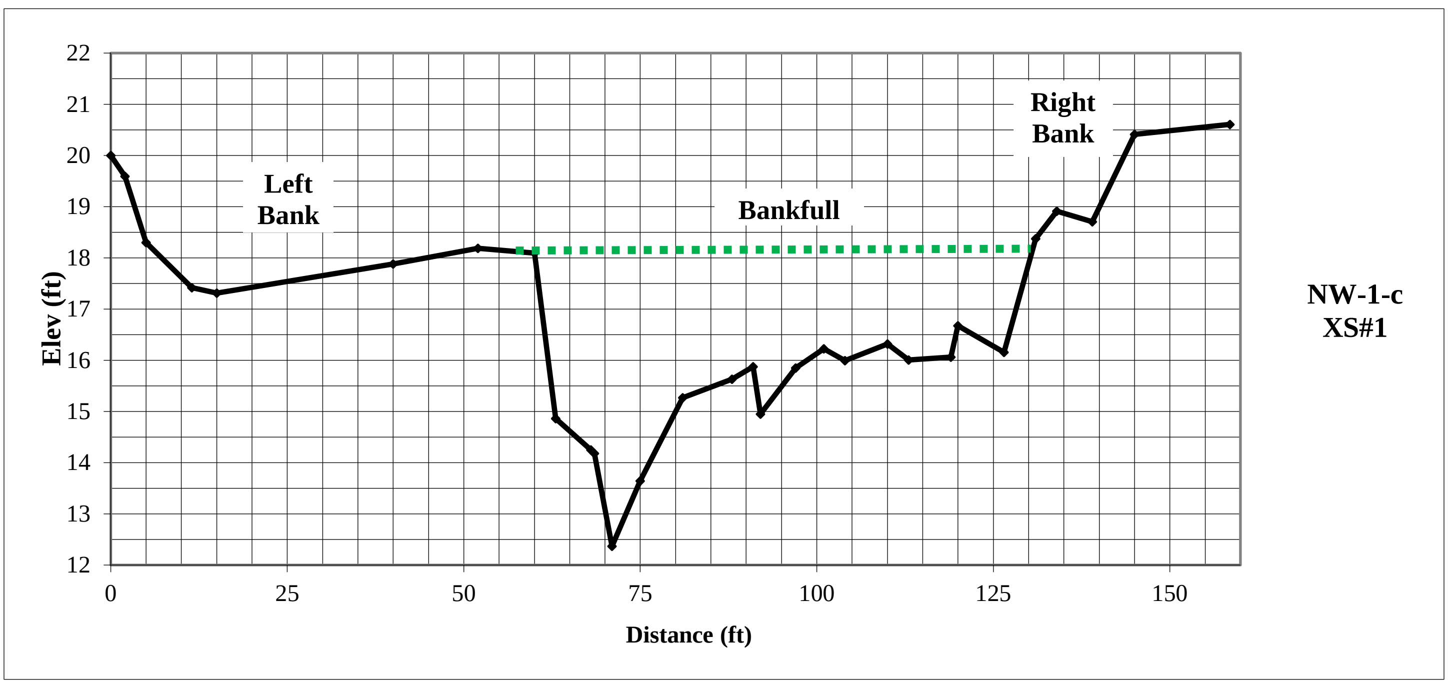


Site	Cross-Section	Geomorphic Parameter	Value	Units
C-1	2	Bankfull Area	72	ft.²
		Bankfull Width	30	ft.
		Bankfull Depth	2.4	ft.
		Maximum Bankfull Depth	3.5	ft.
		Low Bank Height	4.34	ft.
		Width of the Flood-prone Area	232	ft.
		Width to Depth Ratio	12.5	n/a
		Bank Height Ratio	1.2	n/a
		Entrenchment Ratio	7.7	n/a

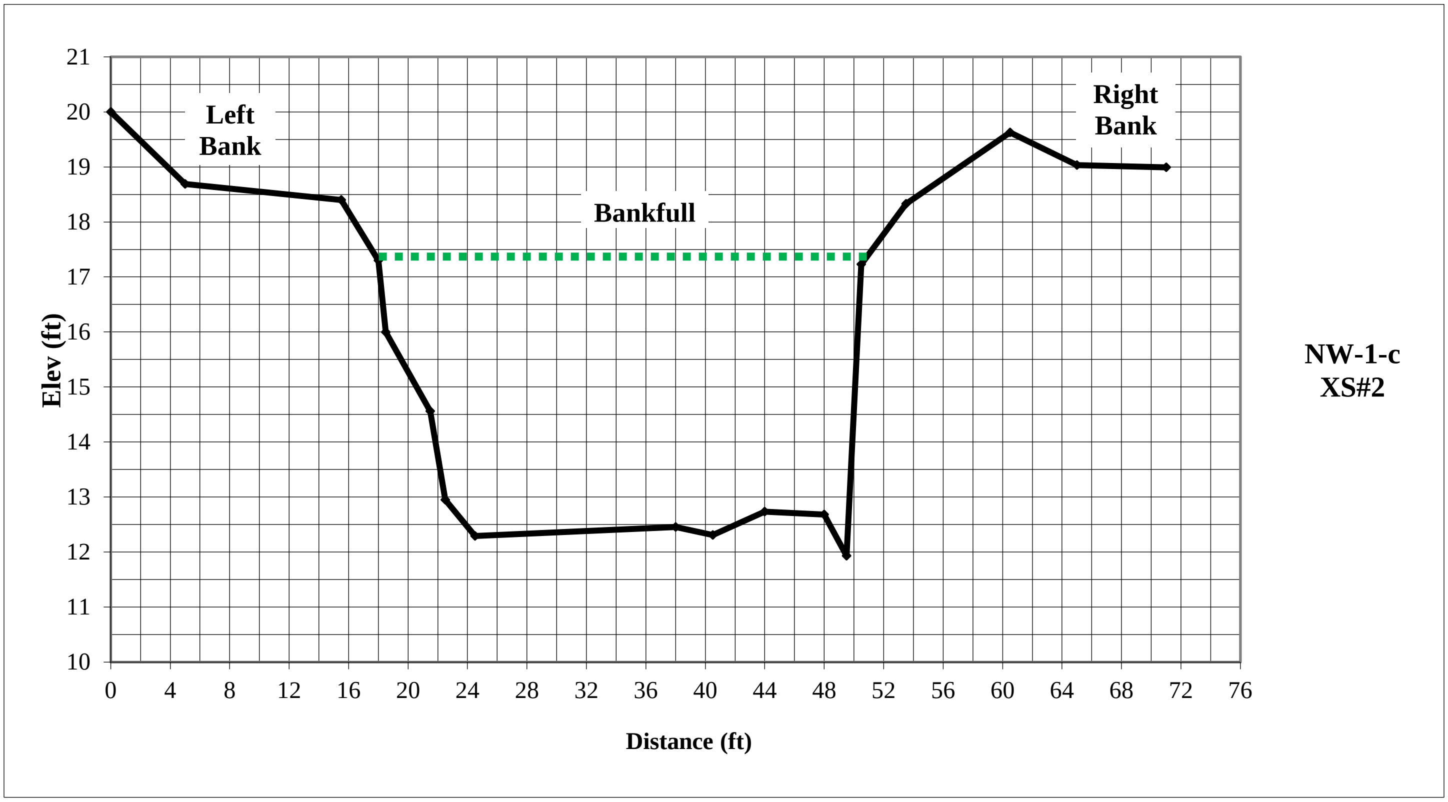


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-c	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	1
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	2
	Riparian vegetation to provide shade, nutrient uptake, and food sources	2
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	2
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	17

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-c	1	Bankfull Area	176	$ft.^2$
		Bankfull Width	71	ft.
		Bankfull Depth	2.5	ft.
		Maximum Bankfull Depth	5.7	ft.
		Low Bank Height	5.82	ft.
		Width of the Flood-prone Area	570	ft.
		Width to Depth Ratio	28.6	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	8.0	n/a

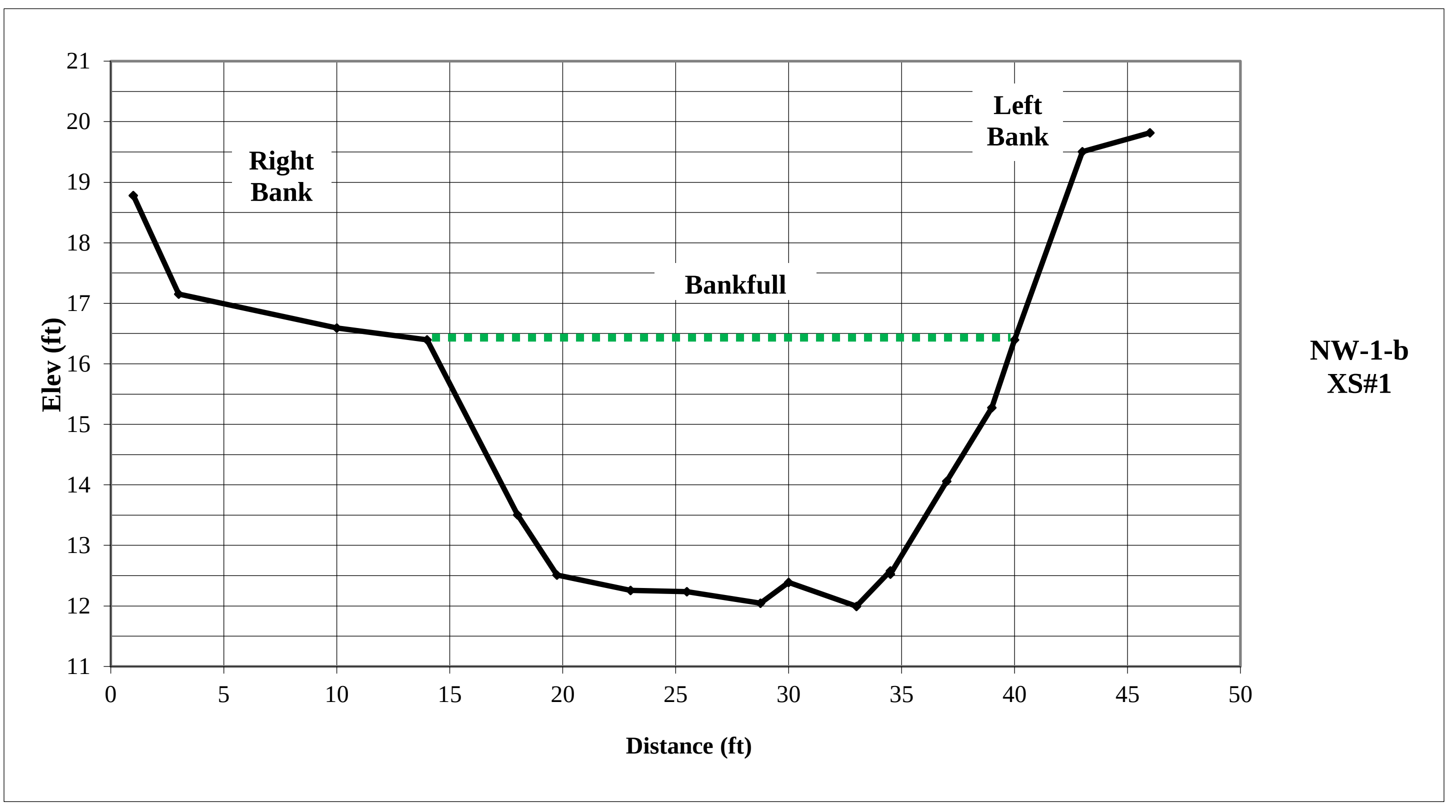


Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-c	2	Bankfull Area	144	$ft.^2$
		Bankfull Width	33	ft.
		Bankfull Depth	4.4	ft.
		Maximum Bankfull Depth	5.4	ft.
		Low Bank Height	6.47	ft.
		Width of the Flood-prone Area	479	ft.
		Width to Depth Ratio	7.3	n/a
		Bank Height Ratio	1.2	n/a
		Entrenchment Ratio	14.7	n/a

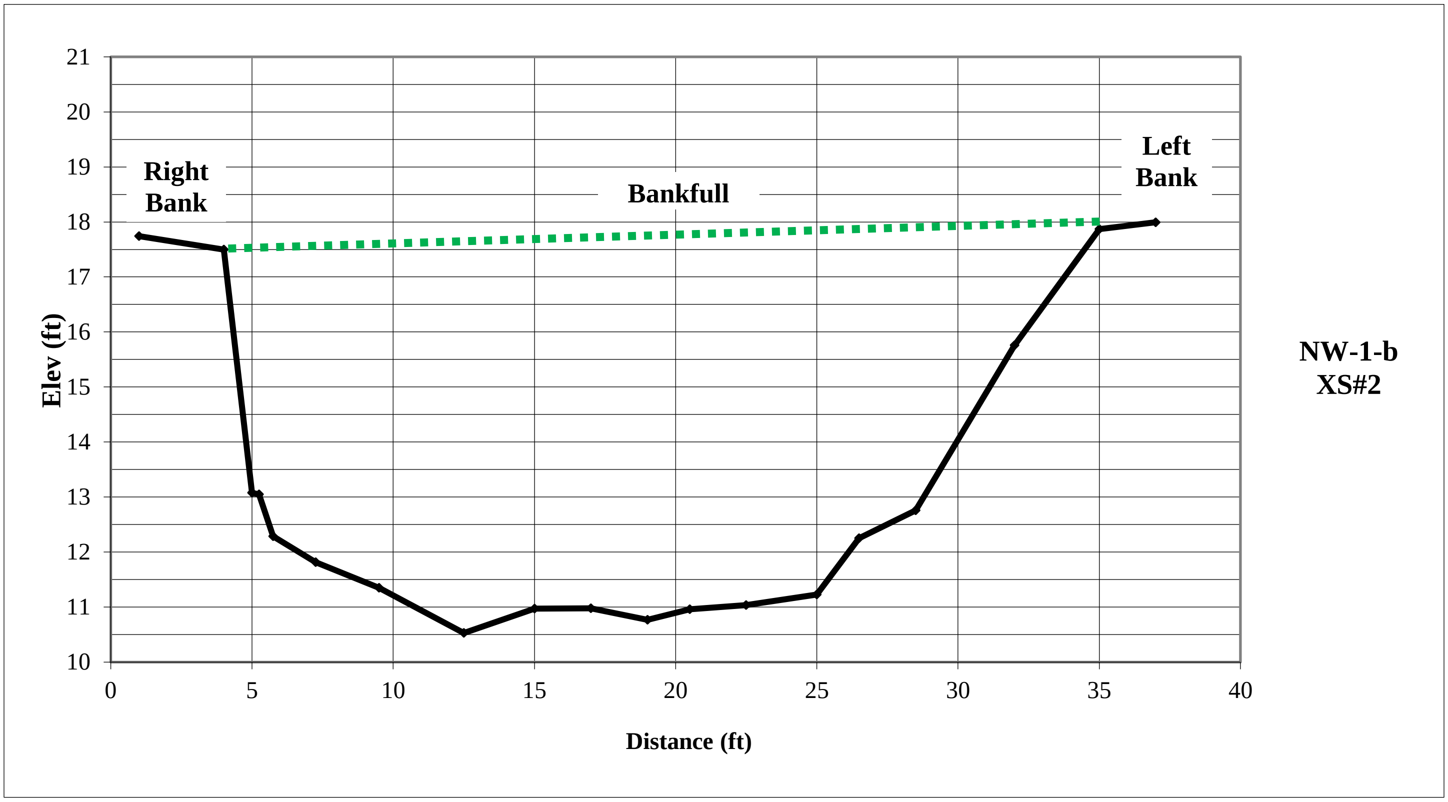


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-b	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	0
	Channel dimension related to bankfull cross-section measurements	0
	Channel pattern related to planform measurements	0
	Channel bed profile related to longitudinal profile measurements	1
	Streambank stability and protection from erosion	0
	Floodplain connection for bankfull flood access	1
	Floodplain morphology to dissipate flood energy and minimize erosion	1
	Riparian vegetation to provide shade, nutrient uptake, and food sources	0
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	0
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	6

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-b	1	Bankfull Area	88	$ft.^2$
		Bankfull Width	26	ft.
		Bankfull Depth	3.4	ft.
		Maximum Bankfull Depth	4.4	ft.
		Low Bank Height	7.5	ft.
		Width of the Flood-prone Area	192	ft.
		Width to Depth Ratio	7.7	n/a
		Bank Height Ratio	1.7	n/a
		Entrenchment Ratio	7.4	n/a

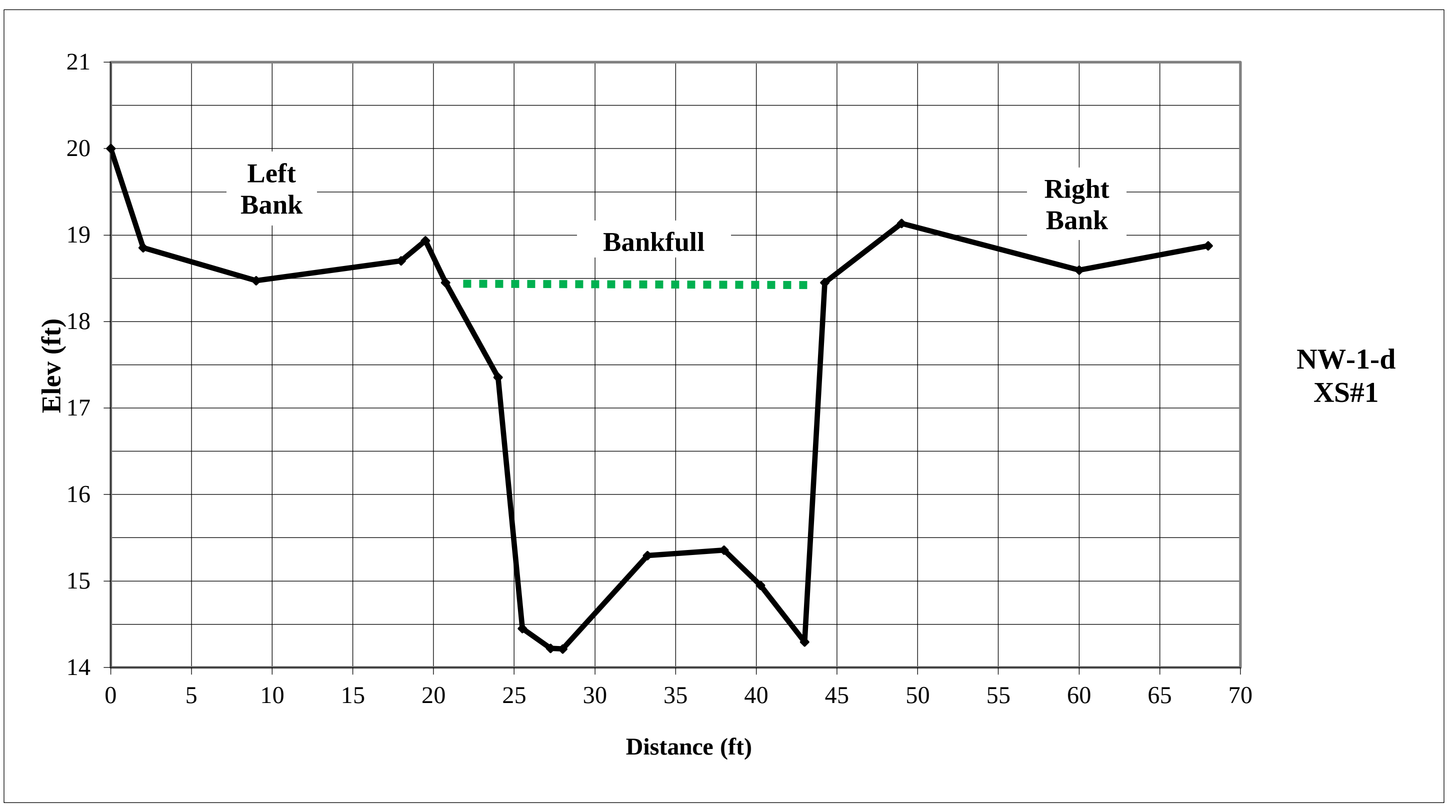


Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-b	2	Bankfull Area	157	$ft.^2$
		Bankfull Width	31	ft.
		Bankfull Depth	5.1	ft.
		Maximum Bankfull Depth	7.0	ft.
		Low Bank Height	7.21	ft.
		Width of the Flood-prone Area	215	ft.
		Width to Depth Ratio	6.1	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	6.9	n/a

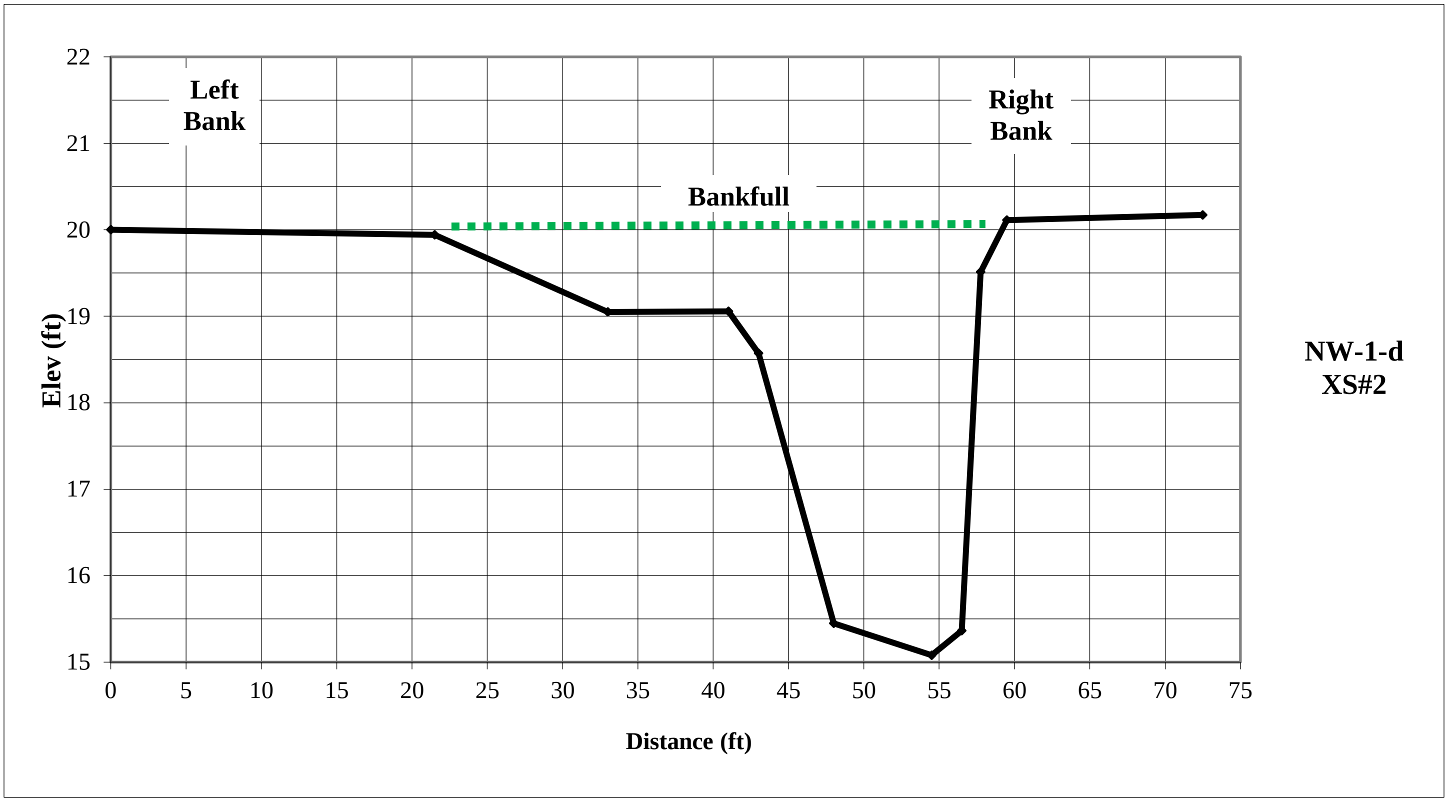


Site	Stream Condition and Function	Score (0 – 2)*
NW-1-d	Upstream watershed impacts from stormwater, wastewater, or sediment	1
	Local stream reach impacts from ditches, pipes, livestock, utilities, or roads	1
	Channel dimension related to bankfull cross-section measurements	2
	Channel pattern related to planform measurements	2
	Channel bed profile related to longitudinal profile measurements	2
	Streambank stability and protection from erosion	1
	Floodplain connection for bankfull flood access	2
	Floodplain morphology to dissipate flood energy and minimize erosion	1
	Riparian vegetation to provide shade, nutrient uptake, and food sources	1
	Habitats including diverse bedform, large woody debris, leaf packs, root hairs	1
	Water quality and stream bed sediments	2
	Presence of desirable fish and macroinvertebrates expected for watershed	0
*Score indicates natural function and health: 2 = Good; 1 = Fair; 0 = Poor	TOTAL	16

Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-d	1	Bankfull Area	71	$ft.^2$
		Bankfull Width	24	ft.
		Bankfull Depth	3.0	ft.
		Maximum Bankfull Depth	4.2	ft.
		Low Bank Height	4.72	ft.
		Width of the Flood-prone Area	140	ft.
		Width to Depth Ratio	7.8	n/a
		Bank Height Ratio	1.1	n/a
		Entrenchment Ratio	6.0	n/a



Site	Cross-Section	Geomorphic Parameter	Value	Units
NW-1-d	2	Bankfull Area	84	$ft.^2$
		Bankfull Width	38	ft.
		Bankfull Depth	2.2	ft.
		Maximum Bankfull Depth	4.9	ft.
		Low Bank Height	4.86	ft.
		Width of the Flood-prone Area	100	ft.
		Width to Depth Ratio	17.2	n/a
		Bank Height Ratio	1.0	n/a
		Entrenchment Ratio	2.6	n/a



Moore’s Mill Creek Watershed Monitoring Data

Site Number	Reach Length	Upstream Coordinates	Downstream Coordinates
C-1	550 ft.	32.601404 N, 85.432698 W	32.600192 N, 85.432044 W
C-MM-a	950 ft.	32.600874 N, 85.428538 W	32.600530 N, 85.431463 W
C-MM-b	1100 ft.	32.591034 N, 85.442119 W	32.590912 N, 85.444596 W
NW-1-b	600 ft.	32.603946 N, 85.453310 W	32.602333 N, 85.453047 W
NW-1-c	850 ft.	32.597506 N, 85.451326 W	32.595712 N, 85.450483 W
NW-1-d	950 ft.	32.613527 N, 85.455178 W	32.611580 N, 85.456570 W
SW-MM-b	650 ft.	32.568631 N, 85.451830 W	32.567873 N, 85.453612 W
SW-MM-c	1350 ft.	32.559094 N, 85.463712 W	32.558760 N, 85.466685 W

Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	< 2.50	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
C-MM-a	6/23/2017	0845	D. Kimbrow	14.9	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
C-MM-b	6/23/2017	0900	D. Kimbrow	4.67	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
NW-1-b	6/23/2017	0800	D. Kimbrow	< 2.50	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
NW-1-c	6/23/2017	0820	D. Kimbrow	< 2.50	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
NW-1-d	6/23/2017	0745	D. Kimbrow	< 2.50	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
SW-MM-b	6/23/2017	0920	D. Kimbrow	7.67	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
SW-MM-c	6/23/2017	1215	D. Kimbrow	3.67	SM 2540D 1997	6/28/2017	Y. Akingbemi (ERA)
Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
C-MM-a	9/22/2017	1335	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
C-MM-b	9/22/2017	1355	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
NW-1-b	9/22/2017	1250	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
NW-1-c	9/22/2017	1305	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
NW-1-d	9/22/2017	1240	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
SW-MM-b	9/22/2017	1410	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
SW-MM-c	9/22/2017	1425	D. Kimbrow	< 2.50	SM 2540D 1997	9/27/2017	A. O’Neal (ERA)
Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
C-MM-a	12/12/2017	1420	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
C-MM-b	12/12/2017	1435	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
NW-1-b	12/12/2017	1340	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
NW-1-c	12/12/2017	1355	D. Kimbrow	3.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
NW-1-d	12/12/2017	1325	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
SW-MM-b	12/12/2017	1450	D. Kimbrow	3.70	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
SW-MM-c	12/12/2017	1510	D. Kimbrow	< 2.50	SM 2540D 1997	12/14/2017	J. Andrews (ERA)
Site Number	Sample Date	Sample Time	Sample Collected By	Total Suspended Solids (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	28.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
C-MM-a	3/6/2018	1355	D. Kimbrow	13.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
C-MM-b	3/6/2018	1415	D. Kimbrow	18.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
NW-1-b	3/6/2018	1310	D. Kimbrow	12.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
NW-1-c	3/6/2018	1325	D. Kimbrow	20.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
NW-1-d	3/6/2018	1250	D. Kimbrow	9.00	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
SW-MM-b	3/6/2018	1440	D. Kimbrow	36.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)
SW-MM-c	3/6/2018	1510	D. Kimbrow	58.0	SM 2540D 1997	3/9/2018	A. O’Neal (ERA)

Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	72.2	YSI 5560	6/23/2017	D. Kimbrow
C-MM-a	6/23/2017	0845	D. Kimbrow	77.9	YSI 5560	6/23/2017	D. Kimbrow
C-MM-b	6/23/2017	0900	D. Kimbrow	76.5	YSI 5560	6/23/2017	D. Kimbrow
NW-1-b	6/23/2017	0800	D. Kimbrow	73.4	YSI 5560	6/23/2017	D. Kimbrow
NW-1-c	6/23/2017	0820	D. Kimbrow	73.4	YSI 5560	6/23/2017	D. Kimbrow
NW-1-d	6/23/2017	0745	D. Kimbrow	71.0	YSI 5560	6/23/2017	D. Kimbrow
SW-MM-b	6/23/2017	0920	D. Kimbrow	75.5	YSI 5560	6/23/2017	D. Kimbrow
SW-MM-c	6/23/2017	1215	D. Kimbrow	76.9	YSI 5560	6/23/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	72.3	YSI 5560	9/22/2017	D. Kimbrow
C-MM-a	9/22/2017	1335	D. Kimbrow	78.1	YSI 5560	9/22/2017	D. Kimbrow
C-MM-b	9/22/2017	1355	D. Kimbrow	75.9	YSI 5560	9/22/2017	D. Kimbrow
NW-1-b	9/22/2017	1250	D. Kimbrow	77.0	YSI 5560	9/22/2017	D. Kimbrow
NW-1-c	9/22/2017	1305	D. Kimbrow	76.2	YSI 5560	9/22/2017	D. Kimbrow
NW-1-d	9/22/2017	1240	D. Kimbrow	72.8	YSI 5560	9/22/2017	D. Kimbrow
SW-MM-b	9/22/2017	1410	D. Kimbrow	79.6	YSI 5560	9/22/2017	D. Kimbrow
SW-MM-c	9/22/2017	1425	D. Kimbrow	78.5	YSI 5560	9/22/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	50.6	YSI 5560	12/12/2017	D. Kimbrow
C-MM-a	12/12/2017	1420	D. Kimbrow	48.9	YSI 5560	12/12/2017	D. Kimbrow
C-MM-b	12/12/2017	1435	D. Kimbrow	49.7	YSI 5560	12/12/2017	D. Kimbrow
NW-1-b	12/12/2017	1340	D. Kimbrow	51.0	YSI 5560	12/12/2017	D. Kimbrow
NW-1-c	12/12/2017	1355	D. Kimbrow	49.9	YSI 5560	12/12/2017	D. Kimbrow
NW-1-d	12/12/2017	1325	D. Kimbrow	54.2	YSI 5560	12/12/2017	D. Kimbrow
SW-MM-b	12/12/2017	1450	D. Kimbrow	50.5	YSI 5560	12/12/2017	D. Kimbrow
SW-MM-c	12/12/2017	1510	D. Kimbrow	48.6	YSI 5560	12/12/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Water Temperature (F)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	60.2	YSI 5560	3/6/2018	D. Kimbrow
C-MM-a	3/6/2018	1355	D. Kimbrow	60.3	YSI 5560	3/6/2018	D. Kimbrow
C-MM-b	3/6/2018	1415	D. Kimbrow	60.5	YSI 5560	3/6/2018	D. Kimbrow
NW-1-b	3/6/2018	1310	D. Kimbrow	60.3	YSI 5560	3/6/2018	D. Kimbrow
NW-1-c	3/6/2018	1325	D. Kimbrow	60.6	YSI 5560	3/6/2018	D. Kimbrow
NW-1-d	3/6/2018	1250	D. Kimbrow	61.1	YSI 5560	3/6/2018	D. Kimbrow
SW-MM-b	3/6/2018	1440	D. Kimbrow	60.9	YSI 5560	3/6/2018	D. Kimbrow
SW-MM-c	3/6/2018	1510	D. Kimbrow	60.8	YSI 5560	3/6/2018	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	7.45	YSI 1001	6/23/2017	D. Kimbrow
C-MM-a	6/23/2017	0845	D. Kimbrow	7.22	YSI 1001	6/23/2017	D. Kimbrow
C-MM-b	6/23/2017	0900	D. Kimbrow	7.37	YSI 1001	6/23/2017	D. Kimbrow
NW-1-b	6/23/2017	0800	D. Kimbrow	7.41	YSI 1001	6/23/2017	D. Kimbrow
NW-1-c	6/23/2017	0820	D. Kimbrow	7.34	YSI 1001	6/23/2017	D. Kimbrow
NW-1-d	6/23/2017	0745	D. Kimbrow	7.09	YSI 1001	6/23/2017	D. Kimbrow
SW-MM-b	6/23/2017	0920	D. Kimbrow	7.26	YSI 1001	6/23/2017	D. Kimbrow
SW-MM-c	6/23/2017	1215	D. Kimbrow	7.68	YSI 1001	6/23/2017	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	7.44	YSI 1001	9/22/2017	D. Kimbrow
C-MM-a	9/22/2017	1335	D. Kimbrow	7.10	YSI 1001	9/22/2017	D. Kimbrow
C-MM-b	9/22/2017	1355	D. Kimbrow	7.40	YSI 1001	9/22/2017	D. Kimbrow
NW-1-b	9/22/2017	1250	D. Kimbrow	7.52	YSI 1001	9/22/2017	D. Kimbrow
NW-1-c	9/22/2017	1305	D. Kimbrow	7.43	YSI 1001	9/22/2017	D. Kimbrow
NW-1-d	9/22/2017	1240	D. Kimbrow	7.22	YSI 1001	9/22/2017	D. Kimbrow
SW-MM-b	9/22/2017	1410	D. Kimbrow	7.40	YSI 1001	9/22/2017	D. Kimbrow
SW-MM-c	9/22/2017	1425	D. Kimbrow	8.04	YSI 1001	9/22/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	7.41	YSI 1001	12/12/2017	D. Kimbrow
C-MM-a	12/12/2017	1420	D. Kimbrow	7.32	YSI 1001	12/12/2017	D. Kimbrow
C-MM-b	12/12/2017	1435	D. Kimbrow	7.40	YSI 1001	12/12/2017	D. Kimbrow
NW-1-b	12/12/2017	1340	D. Kimbrow	7.46	YSI 1001	12/12/2017	D. Kimbrow
NW-1-c	12/12/2017	1355	D. Kimbrow	7.43	YSI 1001	12/12/2017	D. Kimbrow
NW-1-d	12/12/2017	1325	D. Kimbrow	7.11	YSI 1001	12/12/2017	D. Kimbrow
SW-MM-b	12/12/2017	1450	D. Kimbrow	7.43	YSI 1001	12/12/2017	D. Kimbrow
SW-MM-c	12/12/2017	1510	D. Kimbrow	7.79	YSI 1001	12/12/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	pH	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	6.90	YSI 1001	3/6/2018	D. Kimbrow
C-MM-a	3/6/2018	1355	D. Kimbrow	6.84	YSI 1001	3/6/2018	D. Kimbrow
C-MM-b	3/6/2018	1415	D. Kimbrow	7.01	YSI 1001	3/6/2018	D. Kimbrow
NW-1-b	3/6/2018	1310	D. Kimbrow	6.97	YSI 1001	3/6/2018	D. Kimbrow
NW-1-c	3/6/2018	1325	D. Kimbrow	6.94	YSI 1001	3/6/2018	D. Kimbrow
NW-1-d	3/6/2018	1250	D. Kimbrow	6.81	YSI 1001	3/6/2018	D. Kimbrow
SW-MM-b	3/6/2018	1440	D. Kimbrow	7.08	YSI 1001	3/6/2018	D. Kimbrow
SW-MM-c	3/6/2018	1510	D. Kimbrow	6.87	YSI 1001	3/6/2018	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	8.28	YSI 2003 polarographic	6/23/2017	D. Kimbrow
C-MM-a	6/23/2017	0845	D. Kimbrow	6.06	YSI 2003 polarographic	6/23/2017	D. Kimbrow
C-MM-b	6/23/2017	0900	D. Kimbrow	7.53	YSI 2003 polarographic	6/23/2017	D. Kimbrow
NW-1-b	6/23/2017	0800	D. Kimbrow	8.01	YSI 2003 polarographic	6/23/2017	D. Kimbrow
NW-1-c	6/23/2017	0820	D. Kimbrow	7.58	YSI 2003 polarographic	6/23/2017	D. Kimbrow
NW-1-d	6/23/2017	0745	D. Kimbrow	7.58	YSI 2003 polarographic	6/23/2017	D. Kimbrow
SW-MM-b	6/23/2017	0920	D. Kimbrow	7.44	YSI 2003 polarographic	6/23/2017	D. Kimbrow
SW-MM-c	6/23/2017	1215	D. Kimbrow	8.87	YSI 2003 polarographic	6/23/2017	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	8.22	YSI 2003 polarographic	9/22/2017	D. Kimbrow
C-MM-a	9/22/2017	1335	D. Kimbrow	6.30	YSI 2003 polarographic	9/22/2017	D. Kimbrow
C-MM-b	9/22/2017	1355	D. Kimbrow	6.96	YSI 2003 polarographic	9/22/2017	D. Kimbrow
NW-1-b	9/22/2017	1250	D. Kimbrow	8.30	YSI 2003 polarographic	9/22/2017	D. Kimbrow
NW-1-c	9/22/2017	1305	D. Kimbrow	7.86	YSI 2003 polarographic	9/22/2017	D. Kimbrow
NW-1-d	9/22/2017	1240	D. Kimbrow	7.75	YSI 2003 polarographic	9/22/2017	D. Kimbrow
SW-MM-b	9/22/2017	1410	D. Kimbrow	7.55	YSI 2003 polarographic	9/22/2017	D. Kimbrow
SW-MM-c	9/22/2017	1425	D. Kimbrow	8.20	YSI 2003 polarographic	9/22/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	11.9	YSI 2003 polarographic	12/12/2017	D. Kimbrow
C-MM-a	12/12/2017	1420	D. Kimbrow	11.7	YSI 2003 polarographic	12/12/2017	D. Kimbrow
C-MM-b	12/12/2017	1435	D. Kimbrow	12.4	YSI 2003 polarographic	12/12/2017	D. Kimbrow
NW-1-b	12/12/2017	1340	D. Kimbrow	12.4	YSI 2003 polarographic	12/12/2017	D. Kimbrow
NW-1-c	12/12/2017	1355	D. Kimbrow	12.1	YSI 2003 polarographic	12/12/2017	D. Kimbrow
NW-1-d	12/12/2017	1325	D. Kimbrow	10.1	YSI 2003 polarographic	12/12/2017	D. Kimbrow
SW-MM-b	12/12/2017	1450	D. Kimbrow	12.4	YSI 2003 polarographic	12/12/2017	D. Kimbrow
SW-MM-c	12/12/2017	1510	D. Kimbrow	12.9	YSI 2003 polarographic	12/12/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Dissolved Oxygen (mg/L)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	9.97	YSI 2003 polarographic	3/6/2018	D. Kimbrow
C-MM-a	3/6/2018	1355	D. Kimbrow	9.29	YSI 2003 polarographic	3/6/2018	D. Kimbrow
C-MM-b	3/6/2018	1415	D. Kimbrow	9.82	YSI 2003 polarographic	3/6/2018	D. Kimbrow
NW-1-b	3/6/2018	1310	D. Kimbrow	9.94	YSI 2003 polarographic	3/6/2018	D. Kimbrow
NW-1-c	3/6/2018	1325	D. Kimbrow	9.67	YSI 2003 polarographic	3/6/2018	D. Kimbrow
NW-1-d	3/6/2018	1250	D. Kimbrow	9.30	YSI 2003 polarographic	3/6/2018	D. Kimbrow
SW-MM-b	3/6/2018	1440	D. Kimbrow	9.32	YSI 2003 polarographic	3/6/2018	D. Kimbrow
SW-MM-c	3/6/2018	1510	D. Kimbrow	10.1	YSI 2003 polarographic	3/6/2018	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	157	YSI 5560	6/23/2017	D. Kimbrow
C-MM-a	6/23/2017	0845	D. Kimbrow	101	YSI 5560	6/23/2017	D. Kimbrow
C-MM-b	6/23/2017	0900	D. Kimbrow	112	YSI 5560	6/23/2017	D. Kimbrow
NW-1-b	6/23/2017	0800	D. Kimbrow	162	YSI 5560	6/23/2017	D. Kimbrow
NW-1-c	6/23/2017	0820	D. Kimbrow	160	YSI 5560	6/23/2017	D. Kimbrow
NW-1-d	6/23/2017	0745	D. Kimbrow	218	YSI 5560	6/23/2017	D. Kimbrow
SW-MM-b	6/23/2017	0920	D. Kimbrow	128	YSI 5560	6/23/2017	D. Kimbrow
SW-MM-c	6/23/2017	1215	D. Kimbrow	122	YSI 5560	6/23/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	147	YSI 5560	9/22/2017	D. Kimbrow
C-MM-a	9/22/2017	1335	D. Kimbrow	113	YSI 5560	9/22/2017	D. Kimbrow
C-MM-b	9/22/2017	1355	D. Kimbrow	127	YSI 5560	9/22/2017	D. Kimbrow
NW-1-b	9/22/2017	1250	D. Kimbrow	151	YSI 5560	9/22/2017	D. Kimbrow
NW-1-c	9/22/2017	1305	D. Kimbrow	158	YSI 5560	9/22/2017	D. Kimbrow
NW-1-d	9/22/2017	1240	D. Kimbrow	191	YSI 5560	9/22/2017	D. Kimbrow
SW-MM-b	9/22/2017	1410	D. Kimbrow	148	YSI 5560	9/22/2017	D. Kimbrow
SW-MM-c	9/22/2017	1425	D. Kimbrow	137	YSI 5560	9/22/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	139	YSI 5560	12/12/2017	D. Kimbrow
C-MM-a	12/12/2017	1420	D. Kimbrow	106	YSI 5560	12/12/2017	D. Kimbrow
C-MM-b	12/12/2017	1435	D. Kimbrow	115	YSI 5560	12/12/2017	D. Kimbrow
NW-1-b	12/12/2017	1340	D. Kimbrow	137	YSI 5560	12/12/2017	D. Kimbrow
NW-1-c	12/12/2017	1355	D. Kimbrow	140	YSI 5560	12/12/2017	D. Kimbrow
NW-1-d	12/12/2017	1325	D. Kimbrow	173	YSI 5560	12/12/2017	D. Kimbrow
SW-MM-b	12/12/2017	1450	D. Kimbrow	132	YSI 5560	12/12/2017	D. Kimbrow
SW-MM-c	12/12/2017	1510	D. Kimbrow	128	YSI 5560	12/12/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Specific Conductance (uS/cm)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	70	YSI 5560	3/6/2018	D. Kimbrow
C-MM-a	3/6/2018	1355	D. Kimbrow	93	YSI 5560	3/6/2018	D. Kimbrow
C-MM-b	3/6/2018	1415	D. Kimbrow	88	YSI 5560	3/6/2018	D. Kimbrow
NW-1-b	3/6/2018	1310	D. Kimbrow	90	YSI 5560	3/6/2018	D. Kimbrow
NW-1-c	3/6/2018	1325	D. Kimbrow	79	YSI 5560	3/6/2018	D. Kimbrow
NW-1-d	3/6/2018	1250	D. Kimbrow	119	YSI 5560	3/6/2018	D. Kimbrow
SW-MM-b	3/6/2018	1440	D. Kimbrow	82	YSI 5560	3/6/2018	D. Kimbrow
SW-MM-c	3/6/2018	1510	D. Kimbrow	72	YSI 5560	3/6/2018	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	6/23/2017	0840	D. Kimbrow	4.66	SM 2130 B	6/23/2017	D. Kimbrow
C-MM-a	6/23/2017	0845	D. Kimbrow	6.20	SM 2130 B	6/23/2017	D. Kimbrow
C-MM-b	6/23/2017	0900	D. Kimbrow	5.56	SM 2130 B	6/23/2017	D. Kimbrow
NW-1-b	6/23/2017	0800	D. Kimbrow	4.33	SM 2130 B	6/23/2017	D. Kimbrow
NW-1-c	6/23/2017	0820	D. Kimbrow	4.78	SM 2130 B	6/23/2017	D. Kimbrow
NW-1-d	6/23/2017	0745	D. Kimbrow	3.92	SM 2130 B	6/23/2017	D. Kimbrow
SW-MM-b	6/23/2017	0920	D. Kimbrow	7.00	SM 2130 B	6/23/2017	D. Kimbrow
SW-MM-c	6/23/2017	1215	D. Kimbrow	7.28	SM 2130 B	6/23/2017	D. Kimbrow

Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	9/22/2017	1325	D. Kimbrow	3.60	SM 2130 B	9/22/2017	D. Kimbrow
C-MM-a	9/22/2017	1335	D. Kimbrow	3.86	SM 2130 B	9/22/2017	D. Kimbrow
C-MM-b	9/22/2017	1355	D. Kimbrow	3.54	SM 2130 B	9/22/2017	D. Kimbrow
NW-1-b	9/22/2017	1250	D. Kimbrow	3.14	SM 2130 B	9/22/2017	D. Kimbrow
NW-1-c	9/22/2017	1305	D. Kimbrow	3.63	SM 2130 B	9/22/2017	D. Kimbrow
NW-1-d	9/22/2017	1240	D. Kimbrow	2.80	SM 2130 B	9/22/2017	D. Kimbrow
SW-MM-b	9/22/2017	1410	D. Kimbrow	4.19	SM 2130 B	9/22/2017	D. Kimbrow
SW-MM-c	9/22/2017	1425	D. Kimbrow	5.04	SM 2130 B	9/22/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	12/12/2017	1410	D. Kimbrow	3.30	SM 2130 B	12/12/2017	D. Kimbrow
C-MM-a	12/12/2017	1420	D. Kimbrow	3.83	SM 2130 B	12/12/2017	D. Kimbrow
C-MM-b	12/12/2017	1435	D. Kimbrow	3.68	SM 2130 B	12/12/2017	D. Kimbrow
NW-1-b	12/12/2017	1340	D. Kimbrow	3.02	SM 2130 B	12/12/2017	D. Kimbrow
NW-1-c	12/12/2017	1355	D. Kimbrow	3.12	SM 2130 B	12/12/2017	D. Kimbrow
NW-1-d	12/12/2017	1325	D. Kimbrow	2.07	SM 2130 B	12/12/2017	D. Kimbrow
SW-MM-b	12/12/2017	1450	D. Kimbrow	5.40	SM 2130 B	12/12/2017	D. Kimbrow
SW-MM-c	12/12/2017	1510	D. Kimbrow	4.69	SM 2130 B	12/12/2017	D. Kimbrow
Site Number	Sample Date	Sample Time	Sample Collected By	Turbidity (NTU)	Analytical Method	Analysis Date	Analysis Performed By
C-1	3/6/2018	1345	D. Kimbrow	47.4	SM 2130 B	3/6/2018	D. Kimbrow
C-MM-a	3/6/2018	1355	D. Kimbrow	11.7	SM 2130 B	3/6/2018	D. Kimbrow
C-MM-b	3/6/2018	1415	D. Kimbrow	19.8	SM 2130 B	3/6/2018	D. Kimbrow
NW-1-b	3/6/2018	1310	D. Kimbrow	23.8	SM 2130 B	3/6/2018	D. Kimbrow
NW-1-c	3/6/2018	1325	D. Kimbrow	39	SM 2130 B	3/6/2018	D. Kimbrow
NW-1-d	3/6/2018	1250	D. Kimbrow	26.4	SM 2130 B	3/6/2018	D. Kimbrow
SW-MM-b	3/6/2018	1440	D. Kimbrow	35.6	SM 2130 B	3/6/2018	D. Kimbrow
SW-MM-c	3/6/2018	1510	D. Kimbrow	55.5	SM 2130 B	3/6/2018	D. Kimbrow

3.0 Water Quality at Long-term Monitoring Sites

3.1 Purpose

The 2017 monitoring year represents the eleventh full year that the City has conducted turbidity measurements at 40 stations within its MS4 jurisdiction. Monitoring at these sites is not included in the City's Water Quality Monitoring Plan, and is not required under the Phase II NPDES General Permit ALR040003. This monitoring is conducted by the City on a strictly voluntary basis. As with previous years, data from each individual watershed is evaluated independently by monitoring station and collectively as a representative watershed group. Each station's data is also evaluated against any neighboring upstream station, thereby assisting in the identification of potential sources of sediment. Turbidity monitoring locations were strategically chosen to allow for both monitoring of the effectiveness of erosion and sediment control at construction sites and also to analyze potential trends within each watershed.

Sediment plays an important role in the biological, chemical, and physical health of streams, lakes, wetlands, and other waterbodies. However, excess siltation can cause increases in stream temperatures, decreases in the passage of light through the water column, decreased dissolved oxygen, issues with color, clogging of fish and aquatic invertebrate gills, destruction of habitat, increased nutrient loading, channel and pond aggradation, and decreased recreational use. Therefore, it is important that we understand the various sources of sediment to these ecosystems and that we monitor and control any potential sources that would otherwise exceed the natural carrying capacity of the waterbody. In addition, this monitoring provides invaluable observations of other potential water quality concerns such as illegal dumping, illicit discharge violations, unauthorized construction activity, unauthorized stream buffer encroachment, etc. These data also support and enhance the effectiveness of the City's Construction Site Erosion and Sediment Control Inspection and Enforcement Program.

3.2 Definitions and Methods

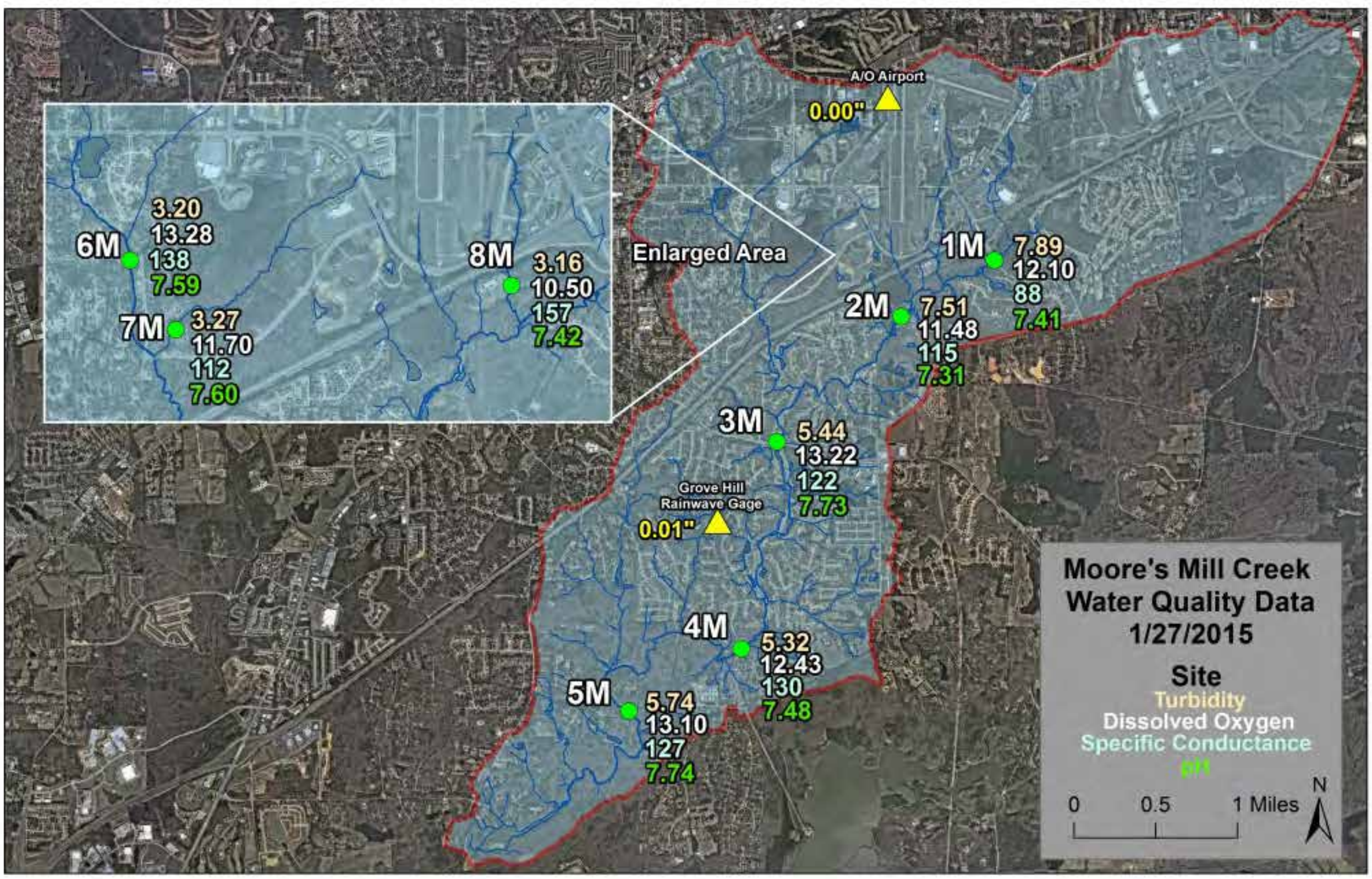
Turbidity is the measure of the degree of transparency of a fluid as it affects the ability of light to pass through. Although it is not a direct measurement of sediment or Total Suspended Solids (TSS) within the water column, it has been identified as a useful surrogate indicator for monitoring sediment pollution in stormwater runoff from active construction sites and is often the monitoring parameter of choice for regulatory agencies. Currently, the Alabama Department of Environmental Management (ADEM) water quality criteria states that "*There shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall turbidity exceed 50 Nephelometric units above background*". Turbidity levels are most commonly measured using a turbidity meter which measures the amount of scattered light as it is passed through a sample at a 90° angle. The resulting numerical value is called a nephelometric turbidity unit (NTU) of which increasing values represent a decrease in light penetration through the sample. The City uses a LaMotte 2020 WE turbidimeter to measure turbidity.

The City began measuring physical and chemical parameters at each station in September 2014 using a YSI Professional Plus water quality meter. WRM staff use these data to develop water quality "signatures" for each site, dependent upon both season and antecedent precipitation. In addition to turbidity, the following parameters are collected:

- Water Temperature – A measure of the heat contained in water. For most designated uses, State Water Quality Criteria requires that temperature not exceed 90° Fahrenheit.
- pH – A measure of how basic or how acidic a substance is. For most designated uses, State Water Quality Criteria requires pH to be between 6.0 and 8.5.

- Dissolved Oxygen – A measure of the concentration of oxygen in its dissolved form within a substance. For most designated uses, State Water Quality Criteria requires dissolved oxygen to be a minimum of 5 mg/L except under “extreme conditions”.
- Specific Conductance – A measure of a substance’s ability to pass an electrical current. There are currently no State Water Quality Criteria for conductivity. Conductivity is directly correlated to the amount of dissolved ions within a substance and is a useful indicator of potential illicit discharges.

Quality control/quality assurance is an integral part of a successful water quality monitoring program. In order to develop a dependable database of water quality measurements for each sample site, WRM Staff calibrate all water quality instruments prior to field use. A detailed calibration log is filled out each time an instrument is calibrated. WRM staff also utilize field sheets to document sample site characteristics and observations such as stream color, geomorphic setting (riffle, pool, etc.), channel substrate and grain size, sample site location relative to the road crossing, sample time, and weather conditions.



Example of a Water Quality Map for the Moore’s Mill Creek Watershed

3.4 Water Quality Monitoring Sites

Chewacla Creek Watershed

Approximately 140 independent water quality measurements were collected in the Chewacla Creek watershed from April 1, 2017 to March 31, 2018. This number does not include data collected in the Chewacla Creek Watershed that is part of the Source Water Monitoring Program.

Monitoring Station Locations and Notes:

Station 1CW – Latitude *32, 35, 3.874 N*; Longitude *85, 25, 55.243 W*. Station 1CW is located along Moore's Mill Road, immediately east of the entrance to Bent Brooke Subdivision.

Station 2CW – Latitude *32, 34, 25.519 N*; Longitude *85, 25, 6.579 W*. Station 2CW is located along Moore's Mill Road, between CR 107/Estate Drive and Society Hill Road.

Station 4CW – Latitude *32, 33, 21.85 N*; Longitude *85, 24, 46.51 W*. Station 4CW is located at the crossing of CR 027 with Chewacla Creek. 4CW is a reference station used to evaluate turbidity as it enters Auburn's Phase II jurisdiction and discharges to Lake Ogletree.

Station 5CW – Latitude *32, 32, 52.236 N*; Longitude *85, 28, 1.713 W*. Station 5CW is located ½ mile downstream of the Lake Ogletree spillway and upstream of the Martin-Marietta Quarry discharge. 5CW is also a reference station monitored to evaluate turbidity within Chewacla Creek as it is discharged from Lake Ogletree, and before it leaves Auburn's Phase II jurisdiction. The relatively low values exhibited at this station can be attributed to the TSS removal provided by Lake Ogletree.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Chewacla Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1CW	4/10/2017	1205	63.2	6.85	8.15	74.4	16.5	0.00
1CW	4/24/2017	1150	61.8	7.03	7.97	74.5	14.1	0.22
1CW	5/9/2017	1615	68.5	6.98	7.72	81.2	19.1	0.00
1CW	6/14/2017	1145	71.0	6.84	6.85	76	19.3	0.04
2CW	4/14/2017	1500	67.6	7.08	7.40	53.6	7.07	0.00
2CW	5/1/2017	1340	67.0	7.30	7.55	61.4	137	1.46
2CW	5/10/2017	1130	63.1	7.01	7.65	59.8	9.51	0.00
2CW	6/14/2017	1155	71.2	6.93	7.80	57.3	8.06	0.04
2CW	9/20/2017	0955	70.9	6.93	7.22	61	12.1	2.00
2CW	10/23/2017	1540	68.0	7.13	7.40	46	34.8	2.00
2CW	12/11/2017	1050	43.4	7.37	11.7	56	6.82	0.92
2CW	1/2/2018	1050	37.3	7.40	13.0	55	5.83	0.00
2CW	1/12/2018	1045	56.1	6.68	8.13	62	6.62	0.20
2CW	2/22/2018	1305	65.1	7.45	8.75	55	10.29	0.21
4CW	4/14/2017	1510	68.3	7.20	7.57	74.9	6.97	0.00
4CW	5/1/2017	1350	70.0	7.12	7.71	84.8	8.65	1.46
4CW	5/10/2017	1140	67.2	7.10	7.90	90.1	7.95	0.00
4CW	6/14/2017	1210	73.1	7.07	8.06	80.7	8.51	0.04
5CW	4/14/2017	1540	68.7	7.85	8.82	102.2	6.56	0.00
5CW	5/1/2017	1415	66.7	7.24	8.32	100.1	8.24	1.46
5CW	5/10/2017	1210	68.5	7.46	9.04	102.4	5.19	0.00
5CW	6/15/2017	1610	77.4	7.44	7.49	108	5.50	0.00

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
5CW	9/20/2017	1340	77.7	6.79	6.84	93	4.69	2.00
5CW	10/30/2017	0925	60.6	6.86	8.61	93	25.7	0.00
5CW	12/11/2017	1340	53.1	7.73	10.6	104	8.05	0.92
5CW	1/2/2018	1505	46.1	7.43	11.5	108	6.00	0.00
5CW	1/12/2018	1410	55.8	7.24	10.1	106	6.16	0.20
5CW	2/22/2018	1325	66.3	7.14	8.75	89	9.43	0.21

Choctafaula Creek Watershed

Approximately 130 independent water quality measurements were collected in the Choctafaula Creek watershed from April 1, 2017 to March 31, 2018. Landcover within the Choctafaula Creek watershed consists of mostly forest and pasture, with relatively little urban/suburban development. This is generally reflected in the turbidity data, as the Choctafaula stations often exhibit lower turbidity than the other streams within the City's MS4 jurisdiction.

Monitoring Station Locations and Notes:

Station 1CH – Latitude *32, 34, 8.089 N*; Longitude *85, 32, 41.169 W*. Station 1CH is located on main stem Choctafaula Creek along Wire Road, immediately east of Talheim Street.

Station 2CH – Latitude *32, 34, 3.928 N*; Longitude *85, 33, 21.503 W*. Station 2CH is located on an unnamed tributary of Choctafaula Creek as it crosses under Wire Road, immediately east of CR 57. 2CH also receives flow from a mostly rural, forested basin and therefore generally exhibits low baseline and storm event turbidity values.

Station 4CH – Latitude *32, 32, 51.901 N*; Longitude *85, 33, 19.14 W*. Station 4CH is located on main stem Choctafaula Creek, as it crosses under Beehive Road, immediately west of the City of Auburn Tech Park West.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Choctafaula Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1CH	4/4/2017	1600	72.9	7.28	8.30	72.1	3.88	0.74
1CH	4/17/2017	1125	66.8	7.13	8.48	59.9	3.11	0.00
1CH	5/1/2017	1520	71.6	7.09	7.93	66.4	13.8	1.35
1CH	5/10/2017	1550	72.1	7.12	8.60	62.7	2.47	0.00
1CH	6/14/2017	1630	76.0	7.09	7.63	70.2	4.75	0.37
1CH	8/31/2017	1445	74.9	7.40	7.68	79	-	2.37
1CH	10/25/2017	1125	58.9	7.00	9.48	79	11.6	0.00
1CH	12/11/2017	1255	48.2	7.30	12.2	80	3.19	0.92
1CH	1/2/2018	1540	40.7	7.38	13.3	80	3.48	0.00
1CH	1/12/2018	1310	57.2	6.84	11.3	68	14.8	0.20

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1CH	2/22/2018	1405	68.7	7.28	9.96	74	5.38	0.21
2CH	4/4/2017	1555	70.6	6.99	8.32	59.4	5.11	0.74
2CH	4/14/2017	1630	67.6	7.09	8.15	60.7	3.71	0.00
2CH	5/1/2017	1510	69.9	7.14	8.29	61.1	10.7	1.35
2CH	5/10/2017	1545	68.4	7.03	9.57	64	3.11	0.00
2CH	6/14/2017	1620	73.7	6.88	8.78	58.6	4.11	0.37
2CH	8/31/2017	1450	72.9	7.27	7.89	66	-	2.37
4CH	4/4/2017	1540	71.2	7.14	8.71	61.5	4.87	1.00
4CH	4/14/2017	1615	69.2	7.42	8.23	66.3	3.31	0.00
4CH	5/1/2017	1500	70.1	7.06	8.11	56.5	19.3	1.65
4CH	5/10/2017	1530	70.0	7.53	9.14	68.6	3.29	0.00
4CH	6/14/2017	1605	75.4	7.18	7.92	61.7	5.84	0.04
4CH	10/25/2017	1135	59.4	7.03	9.59	69	5.08	0.00
4CH	12/11/2017	1305	45.8	7.29	12.5	68	3.35	0.92
4CH	1/2/2018	1530	40.6	7.46	14.4	69	2.74	0.00
4CH	1/12/2018	1325	56.7	6.83	10.3	70	12.2	0.20
4CH	2/22/2018	1355	68.4	7.36	9.35	61	3.59	0.21

Moore’s Mill Creek Watershed

Approximately 285 independent water quality measurements were collected in the Moore’s Mill Creek watershed from April 1, 2017 to March 31, 2018.

Moore’s Mill Creek remains on the ADEM list of impaired waters for siltation, therefore monitoring of turbidity within Moore’s Mill Creek is of critical importance in determining the potential sources of excess sediment loading and in evaluating opportunities for protection, enhancement, and restoration.

Monitoring Station Locations and Notes:

1M – Latitude *32, 36, 8.253 N*; Longitude *85, 25, 35.563 W.* Station 1M is the farthest upstream monitoring location on Moore’s Mill Creek, and is located at Bent Creek Road. This station is representative of water quality as it enters the City’s Phase II jurisdiction. There are currently no active construction or development activities upstream of this site within the City’s MS4 jurisdiction.

2M – Latitude *32, 35, 50.808 N*; Longitude *85, 26, 9.911 W.* Station 2M is located on Moore’s Mill Creek off Bonny Glen Road. 2M is downstream of the unnamed tributary that drains the Auburn University Regional Airport (AUO).

3M – Latitude *32, 35, 10.371 N*; Longitude *85, 26, 58.62 W.* Station 3M is located on Moore’s Mill Creek at Moore’s Mill Road.

4M – Latitude *32, 34, 4.675 N*; Longitude *85, 27, 12.574 W.* Station 4M is located on Moore’s Mill Creek at Windway Road.

5M – Latitude *32, 33, 44.879 N*; Longitude *85, 27, 54.706 W.* Station 5M is the final downstream station on Moore's Mill Creek at Ogletree Road.

6M – Latitude *32, 36, 11.560 N*; Longitude *85, 27, 11.520 W.* 6M is located on an unnamed tributary to Moore's Mill Creek as it crosses under Old Mill Rd. near East University Dr.

7M – Latitude *32, 36, 0.433 N*; Longitude *85, 27, 2.378 W.* 7M is also located on an unnamed tributary to Moore's Mill Creek as it crosses under Jockish Road.

8M – Latitude 32, 36, *8.200 N*; Longitude *85, 25, 56.680 W.* 8M is located on an unnamed tributary to Moore's Mill Creek at Champions Blvd below AUO Airport.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Moore's Mill Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1M	4/10/2017	1115	65.7	7.45	7.72	107	2.81	0.00
1M	4/24/2017	1105	67.8	7.28	5.86	112.2	2.40	0.19
1M	5/9/2017	1505	72.9	7.22	6.62	116.2	2.83	0.00
1M	6/14/2017	1025	77.0	7.14	5.36	106.8	3.44	0.05
1M	9/20/2017	945	78.5	6.55	7.06	84	6.35	2.00
1M	10/23/2017	1500	70.6	6.96	8.16	76	11.8	2.00
1M	12/11/2017	1035	47.4	7.32	11.1	97	5.01	0.92
1M	1/2/2018	1035	40.2	7.20	12.6	99	5.49	0.00
1M	1/12/2018	1030	53.6	6.70	10.2	93	6.85	0.20
1M	2/20/2018	1320	67.0	7.45	9.68	93	-	0.00
2M	4/10/2017	1140	63.4	7.31	8.33	124.2	4.10	0.00
2M	4/24/2017	1130	65.0	7.29	6.90	119.9	5.02	0.19
2M	5/9/2017	1445	68.9	7.27	7.47	126.2	3.96	0.00
2M	6/14/2017	1120	75.0	7.19	6.07	119.8	3.86	0.05
3M	4/10/2017	1155	64.1	7.72	10.5	134.9	4.39	0.00
3M	4/24/2017	1140	63.6	7.62	10.6	137.8	3.65	0.22
3M	5/9/2017	1430	73.3	8.30	11.8	137.9	3.27	0.00
3M	6/14/2017	1135	74.6	7.83	10.3	137.7	4.98	0.04
4M	4/14/2017	1440	73.0	7.36	7.47	148.9	4.99	0.00
4M	5/1/2017	1320	72.2	7.23	8.04	66.7	29.7	1.46
4M	5/10/2017	1115	68.2	7.33	8.63	149.5	4.35	0.00
4M	6/15/2017	1535	80.1	7.34	7.73	144	5.91	0.04
4M	8/10/2017	1150	79.6	7.22	7.54	95	18.2	1.96
5M	4/14/2017	1430	70.3	7.68	7.92	141.9	5.54	0.00
5M	5/1/2017	1310	70.9	7.16	8.71	79.5	41.3	1.46
5M	5/10/2017	1105	69.2	7.71	9.00	129.1	4.60	0.00
5M	6/15/2017	1525	77.5	7.50	7.76	111.5	38.9	0.04
5M	8/10/2017	1140	78.0	7.37	7.90	93	23.6	1.96

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
5M	9/20/2017	1010	74.7	6.72	7.34	90	33.6	2.00
5M	10/23/2017	1445	70.2	7.01	8.26	70	109	2.00
5M	12/11/2017	1100	45.2	7.30	12.9	124	5.40	0.92
5M	1/2/2018	1105	38.3	7.09	14.1	133	6.89	0.00
5M	1/12/2018	1105	56.7	6.57	10.0	127	9.27	0.20
5M	2/22/2018	1250	67.2	7.73	9.91	129	6.07	0.21
6M	4/10/2017	1055	62.6	7.52	10.1	143.7	5.09	0.00
6M	4/24/2017	1040	62.1	7.42	9.15	132.1	2.64	0.19
6M	5/8/2017	1620	68.8	7.51	8.22	151.2	2.36	0.00
6M	6/14/2017	1000	72.3	7.47	8.57	155.2	3.13	0.05
6M	9/20/2017	925	74.1	6.56	7.97	111	11.2	2.00
6M	10/23/2017	1515	69.6	6.94	8.42	84	20.8	2.00
6M	12/11/2017	1020	45.9	7.36	12.6	137	3.50	0.92
6M	1/2/2018	1020	36.4	7.23	14.4	137	3.23	0.00
6M	1/12/2018	1010	56.9	6.54	10.2	98	14.4	0.2
6M	2/20/2018	1305	65.7	7.60	10.1	141	-	0.00
7M	4/10/2017	11	60.3	7.56	9.74	145.6	5.09	0.00
7M	4/24/2017	1050	61.2	7.39	8.36	161.9	3.81	0.22
7M	5/8/2017	1430	65.9	7.45	7.40	136	6.54	0.00
7M	6/14/2017	1010	71.1	7.43	7.61	161.6	3.65	0.04
7M	9/20/2017	935	73.7	6.67	7.54	79	68.2	2.00
7M	10/23/2017	1510	69.5	7.02	8.26	66	99.0	2.00
7M	12/11/2017	1025	46.4	7.38	11.9	134	4.33	0.92
7M	1/2/2018	1025	37.3	7.11	13.8	141	2.67	0.00
7M	1/12/2018	1020	57.2	6.59	9.88	90	78.0	0.20
7M	2/20/2018	1310	65.3	7.62	10.1	140	-	0.00
8M	4/10/2017	1125	63.0	7.31	6.79	99.1	4.29	0.00
8M	4/24/2017	1115	65.8	7.28	6.61	109.2	3.39	0.19
8M	5/9/2017	1555	70.1	7.25	7.33	115.7	4.98	0.00
8M	6/14/2017	1050	75.2	7.14	5.70	119	3.82	0.05

Parkerson's Mill Creek Watershed

Approximately 285 independent water quality measurements were collected in the Parkerson's Mill Creek watershed from April 1, 2017 to March 31, 2018.

Monitoring Station Locations and Notes:

1P – Latitude *32, 35, 33.627 N*; Longitude *85, 29, 45.826 W*. Station 1P is the furthest upstream monitoring location on Parkerson's Mill Creek (located at the Lem Morrison Road crossing).

2P – Latitude *32, 34, 21.948 N*; Longitude *85, 30, 24.979 W*. Station 2P is located on Parkerson's Mill Creek main stem at the eastern most W. Longleaf Drive crossing.

3P – Latitude *32, 33, 44.574 N*; Longitude *85, 30, 25.114 W.* Station 3P is located on Parkerson's Mill Creek main stem at the W. Veterans Boulevard crossing.

4P – Latitude *32, 32, 13.799 N*; Longitude *85, 30, 21.591 W.* Station 4P is the furthest downstream monitoring location on Parkerson's Mill Creek main stem and is located at the CR 10/Sandhill Road crossing.

5P – Latitude *32, 35, 8.48 N*; Longitude *85, 30, 10.446 W.* Station 5P is located on Parkerson's Mill Creek main stem just downstream of Station 1P, at the Shug Jordan Parkway Crossing.

6P – Latitude *32, 35, 3.567 N*; Longitude *85, 31, 0.914 W.* Station 6P is located on an unnamed tributary near the intersection of Wire and Webster Roads.

7P – Latitude *32, 34, 22.578 N*; Longitude *85, 30, 38.989 W.* Station 7P is located downstream of Station P6 at the western most crossing on W. Longleaf Drive.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Parkerson's Mill Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1P	4/14/2017	1345	70.0	7.89	10.77	342.5	-	0.00
1P	5/1/2017	1630	70.9	7.38	8.75	188.3	18.10	1.35
1P	5/10/2017	1415	71.4	7.68	10.04	356.4	1.43	0.00
1P	6/14/2017	1645	75.9	7.63	8.00	351	2.35	0.37
1P	8/31/2017	1410	75.8	7.60	7.92	128	-	-
1P	10/23/2017	1345	70.6	6.90	8.35	157	23.50	2.00
1P	12/11/2017	955	45.5	7.29	12.19	300	2.50	0.92
1P	1/2/2018	950	36.1	6.86	14.03	330	4.02	0.00
1P	1/12/2018	940	57.0	5.98	9.86	125	22.10	0.20
1P	2/20/2018	1230	64.9	7.81	12.65	307	-	0.00
2P	4/4/2017	1515	74.3	7.83	8.05	160.2	5.25	0.00
2P	4/17/2017	1200	69.4	7.81	8.69	241.4	1.38	0.00
2P	5/1/2017	1540	72.0	7.26	7.68	100.2	13.30	1.35
2P	5/10/2017	1445	74.2	8.25	8.04	229.2	1.43	0.00
2P	6/14/2017	1530	78.0	7.98	7.84	192.8	2.20	0.37
3P	4/4/2017	1525	72.2	7.61	8.74	140.5	8.18	0.80
3P	4/17/2017	1215	70.2	7.64	9.10	210.5	5.68	0.00
3P	5/1/2017	1550	71.2	7.28	8.48	97.4	36.00	1.46
3P	5/10/2017	1455	72.4	7.72	9.54	199.5	3.78	0.00
3P	6/14/2017	1545	76.4	7.54	8.40	173.7	4.84	-
4P	4/14/2017	1600	73.4	8.17	7.97	191.7	4.89	0.00
4P	5/1/2017	1445	71.5	7.42	8.85	87	53.50	1.65
4P	5/10/2017	1230	72.4	8.23	9.35	182.2	4.92	0.00
4P	6/15/2017	1635	81.0	8.11	7.97	176.3	3.49	-
4P	9/18/2017	1135	76.7	7.36	8.32	200	2.79	0.00

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
4P	10/23/2017	1420	70.8	7.01	8.58	84	60.20	2.00
4P	12/11/2017	1320	47.1	7.72	12.74	145	3.95	0.92
4P	1/2/2018	1450	38.7	7.30	14.22	185	3.34	0.00
4P	1/12/2018	1350	57.6	7.07	10.38	142	42.10	0.20
4P	2/22/2018	1230	70.2	8.02	10.18	150	3.07	0.21
5P	4/4/2017	1615	70.1	7.90	9.64	242.9	4.63	0.00
5P	4/17/2017	1250	69.2	7.98	10.12	369	1.63	0.00
5P	5/1/2017	1615	70.4	7.39	8.38	145.8	18.90	1.35
5P	5/10/2017	1605	70.1	7.97	9.91	326.5	1.56	0.00
5P	6/15/2017	1215	75.3	7.70	8.54	303.1	1.98	0.37
6P	4/4/2017	1455	74.6	7.25	6.69	126.3	11.40	0.00
6P	4/17/2017	1135	70.8	7.39	7.90	174.5	7.49	0.00
6P	5/1/2017	1605	74.6	7.27	7.26	102.3	15.60	1.35
6P	5/10/2017	1425	74.9	7.47	7.46	168.5	5.24	0.00
6P	6/14/2017	1510	77.4	7.29	8.10	185.9	5.06	0.37
7P	4/4/2017	1510	72.1	7.44	6.68	124.7	6.97	0.00
7P	4/14/2017	1150	68.0	7.37	8.77	165.5	2.89	0.00
7P	5/1/2017	1535	70.8	7.08	8.18	106.3	19.70	1.35
7P	5/10/2017	1435	68.9	7.34	8.64	159.3	2.74	0.00
7P	6/14/2017	1525	73.9	7.34	7.81	156.3	3.07	0.37
7P	9/18/2017	1120	72.6	6.68	8.22	177	1.20	0.00
7P	10/23/2017	1405	70.2	6.95	8.17	88	30.10	2.00
7P	12/12/2017	915	46.5	7.34	12.50	150	4.74	0.00
7P	1/2/2018	1430	40.0	6.94	13.50	163	2.91	0.00
7P	1/12/2018	1335	57.7	6.81	9.61	119	44.40	0.20
7P	2/22/2018	1215	66.1	6.86	11.50	152	2.36	0.21

Saugahatchee Creek Watershed

Approximately 494 independent water quality measurements were collected in the Saugahatchee Creek watershed from April 1, 2017 to March 31, 2018.

Monitoring Station Locations and Notes:

1S – Latitude *32, 39, 28.708 N*; Longitude *85, 27, 33.229 W*. Station 1S is the furthest upstream monitoring location on Saugahatchee Creek main stem and is located at the US Highway 280 crossing. All construction activities contributing to this station are located outside of the City's MS4 jurisdiction.

2S – Latitude *32, 38, 54.075 N*; Longitude *85, 28, 56.552 W*. Station 2S is located on Saugahatchee Creek main stem at the N. College Street/AL 147 crossing.

3S – Latitude *32, 38, 32.179 N*; Longitude *85, 30, 14.658 W*. Station 3S is located on Saugahatchee Creek main stem at the N. Donahue Drive/CR 182 crossing.

4S - Latitude *32, 37, 40.252 N*; Longitude *85, 32, 51.6 W* Station 4S is the furthest downstream monitoring location on Saugahatchee Creek main stem and is located immediately upstream of the Northside Water Pollution Control Facility (WPCF).

5S – Latitude *32, 37, 30.273 N*; Longitude *85, 32, 45.009 W.* Station 5S is located on an unnamed tributary to Saugahatchee Creek immediately west of the Northside Water Pollution Control Facility.

6S – Latitude *32, 37, 48.368 N*; Longitude *85, 27, 7.52 W.* Station 6S is located on an unnamed tributary at the Gatewood Drive crossing near Uncle Bob's Storage.

7S – Latitude *32, 38, 10.933 N*; Longitude *85, 27, 56.368 W.* Station 7S is located downstream of 15S on an unnamed tributary to Saugahatchee Creek at the Shelton Mill Road crossing near The City Church (formerly Victory Prayer Center).

8S – Latitude *32, 37, 30.543 N*; Longitude *85, 28, 27.074 W.* Station 8S is located on an unnamed tributary to Saugahatchee Creek at the Shelton Mill Road crossing near the Covenant Presbyterian Church.

12S – Latitude *32, 38, 10.167 N*; Longitude *85, 28, 54.883 W.* Station 12S is located on an unnamed tributary to Saugahatchee Creek downstream of 8S near the intersection of N. College Street/AL 147 and Shug Jordan Parkway.

14S – Latitude *32, 39, 28.523 N*; Longitude *85, 32, 13.711 W.* Station 14S is located on W. Farmville Road on an unnamed tributary to Loblockee Creek at the discharge of the primary spillway of The Preserve pond.

15S – Latitude *32, 38, 6.51 N*; Longitude *85, 27, 34.675 W.* Station 15S is located on an unnamed tributary to Saugahatchee Creek at N. Dean Road, just downstream of 6S.

16S – Latitude *32, 38, 10.238 N*; Longitude *85, 29, 20.643 W.* Station 16S is located on the same unnamed tributary as 8S and 12S and is downstream of 12S along Shug Jordan Parkway.

17S – Latitude *32, 39, 15.106 N*; Longitude *85, 32, 1.977 W.* Station 17S is located on an unnamed tributary at the discharge of the primary spillway of the Shadow Woods pond (in Shadow Woods Subdivision off Mrs. James Road/CR 081).

18S – Latitude *32, 39, 53.844 N*; Longitude *85, 28, 51.164 W.* 18S is located on an unnamed tributary along Farmville Road, immediately downstream of Tuscany Hills.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Saugahatchee Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1S	4/12/2017	12.55	64.6	7.56	9.92	116.6	5.89	0.00
1S	4/26/2017	13.15	67.8	7.04	9.00	100	2.63	0.00
1S	5/9/2017	1345	70.7	7.52	9.01	170.6	4.36	0.00
1S	6/9/2017	1330	75.9	7.20	7.83	109.7	8.57	0.00
1S	9/20/2017	1450	76.9	7.24	7.99	129	5.93	2.00

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1S	10/24/2017	1545	67.1	6.87	8.85	94	10.9	2.00
1S	12/12/2017	835	46.9	7.43	12.56	103	5.88	0.00
1S	1/3/2018	1445	45.0	6.90	14.00	116	4.89	0.00
1S	1/12/2018	1520	54.9	7.14	10.22	118	8.41	0.20
1S	2/22/2018	1540	66.1	6.97	9.50	102	6.77	0.21
2S	4/12/2017	1415	65.6	7.17	8.95	71.2	7.31	0.00
2S	4/25/2017	1640	70.4	7.14	7.63	96.4	5.46	0.00
2S	5/9/2017	1125	65.8	7.13	8.26	126.9	15.0	0.00
2S	6/9/2017	1355	75.5	7.18	7.23	100.2	8.57	0.00
2S	9/20/2017	1510	75.9	7.17	6.82	124	9.32	2.00
2S	10/24/2017	1555	66.2	6.93	7.72	90	22.4	2.00
2S	12/12/2017	850	46.2	7.31	11.90	107	7.64	0.00
2S	1/3/2018	1500	43.8	6.97	12.17	117	6.75	0.00
2S	1/12/2018	1530	55.6	7.12	9.66	111	11.8	0.20
2S	2/22/2018	1550	67.6	6.94	8.02	103	14.8	0.21
3S	4/12/2017	1320	65.3	7.24	9.08	108.8	7.86	0.00
3S	4/25/2017	1550	70.0	7.17	7.45	126	6.08	0.00
3S	5/9/2017	1030	63.8	7.17	8.49	152.7	5.78	0.00
3S	6/9/2017	1415	75.4	7.16	6.96	91.7	11.3	0.00
4S	4/14/2017	1245	68.9	7.21	7.97	107.3	7.22	0.00
4S	5/1/2017	1015	70.7	6.87	7.64	84	116	1.75
4S	5/10/2017	940	66.9	7.32	8.32	137.6	7.04	0.00
4S	6/13/2017	1120	75.0	7.24	7.53	125.1	-	0.04
4S	9/20/2017	1540	77.3	7.26	7.13	126	12.3	2.00
4S	10/25/2017	1105	60.1	6.75	9.04	104	12.9	0.00
4S	12/11/2017	1430	47.7	7.34	11.93	112	6.72	0.92
4S	1/3/2018	1525	41.9	7.03	12.57	121	5.67	0.00
4S	1/12/2018	1555	55.7	7.12	9.58	109	16.2	0.20
4S	2/22/2018	1435	66.9	7.06	8.89	104	9.64	0.21
5S	4/14/2017	1235	66.0	6.95	7.18	85.2	9.01	0.00
5S	5/1/2017	1005	71.6	6.72	7.32	55.3	86.1	1.75
5S	5/10/2017	930	63.9	7.02	8.52	87.3	17.4	0.00
5S	6/13/2017	1110	74.4	6.86	7.51	81.9	7.78	0.04
5S	9/20/2017	1550	77.4	7.31	6.76	71	14.5	2.00
5S	10/25/2017	1055	61.6	6.81	9.36	76	15.5	0.00
5S	12/11/2017	1425	47.5	7.43	11.80	78	5.79	0.92
5S	1/3/2018	1535	42.6	6.94	12.55	83	6.32	0.00
5S	1/12/2018	1605	53.0	7.10	10.03	77	13.2	0.20
5S	2/22/2018	1445	69.5	6.85	8.04	78	10.0	0.21
6S	4/12/2017	1210	68.4	6.65	5.59	122	9.40	0.00
6S	4/26/2017	12.45	72.4	6.06	6.57	150	5.97	0.00
6S	5/9/2017	140	70.1	6.68	7.08	111.6	8.66	0.00

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
6S	6/9/2017	1245	79.1	7.04	6.38	89.5	8.09	0.00
6S	9/20/2017	1430	79.8	7.10	6.85	84	8.18	2.00
6S	10/24/2017	1530	69.2	6.77	8.45	82	8.10	2.00
6S	12/11/2017	1515	51.2	7.15	10.32	71	5.39	0.92
6S	1/3/2018	1315	45.3	6.83	11.21	115	2.91	0.00
6S	1/12/2018	1500	52.0	6.96	10.70	112	4.59	0.20
6S	2/22/2018	1525	68.0	6.78	7.99	117	3.58	0.21
7S	4/12/2017	1240	65.6	7.09	8.79	118.2	3.93	0.00
7S	4/26/2017	13.05	67.7	6.85	7.93	132.1	3.75	0.00
7S	5/9/2017	1325	67.9	7.04	8.47	109.4	5.81	0.00
7S	6/9/2017	1315	74.3	6.91	7.26	92	5.81	0.00
8S	4/14/2017	1320	67.2	7.00	8.50	145.6	2.12	0.00
8S	5/1/2017	1055	69.4	6.99	7.92	80.5	28.6	1.35
8S	5/10/2017	1020	65.4	6.96	8.43	149.4	1.55	0.00
8S	6/9/2017	1145	70.0	7.10	8.04	157.7	2.69	0.00
8S	9/20/2017	1420	75.2	6.79	7.37	129	11.5	2.00
8S	10/24/2017	1455	64.2	6.45	8.68	138	45.5	2.00
8S	12/11/2017	1455	50.9	7.18	10.90	137	4.41	0.92
8S	1/3/2018	1305	42.6	6.70	13.01	135	9.13	0.00
8S	1/12/2018	1445	57.8	7.03	10.34	104	12.8	0.20
8S	2/22/2018	1510	68.7	6.85	9.33	148	3.91	0.21
12S	4/14/2017	1310	66.8	7.13	7.45	105.6	5.12	0.00
12S	5/1/2017	1045	71.1	7.05	7.78	74.2	40.9	1.35
12S	5/10/2017	1010	65.4	7.18	7.70	124.3	10.4	0.00
12S	6/9/2017	1135	70.8	7.22	7.34	118.1	5.64	0.00
14S	4/12/2017	1340	73.8	6.93	6.10	109.8	7.59	0.00
14S	4/25/2017	1605	77.3	7.25	7.50	94.3	5.69	0.00
14S	5/9/2017	1045	74.7	7.00	7.06	91.6	6.02	0.00
14S	6/9/2017	1430	76.7	7.24	8.64	81.6	12.4	1.02
15S	4/12/2017	1230	67.2	7.23	8.78	103.4	3.51	0.00
15S	4/26/2017	12.55	69.3	6.73	8.28	120.2	2.38	0.00
15S	5/9/2017	1315	70.1	7.17	8.57	92.5	4.48	0.00
15S	6/9/2017	1300	78.1	7.03	7.55	77.9	5.77	0.00
16S	4/14/2017	1300	68.9	7.15	7.38	125.7	5.29	0.00
16S	5/1/2017	1035	70.8	6.99	8.00	67	46.7	1.35
16S	5/10/2017	950	65.5	7.18	8.71	120.2	6.30	0.00
16S	6/9/2017	1125	71.9	7.25	7.37	106.5	5.53	0.00
16S	9/20/2017	1520	76.7	7.14	7.10	99	8.80	2.00
16S	10/24/2017	1605	64.2	6.85	8.50	97	65.4	2.00
16S	12/12/2017	855	45.5	7.26	12.18	122	5.28	0.00
16S	1/3/2018	1505	40.4	6.88	12.74	123	4.16	0.00
16S	1/12/2018	1535	56.3	7.03	9.54	99	16.1	0.20

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
16S	2/22/2018	1555	68.1	6.98	8.80	122	4.85	0.21
17S	4/12/2017	1350	74.5	6.85	10.30	39.4	6.44	0.00
17S	4/25/2017	1620	82.5	6.71	6.30	54	11.7	0.00
17S	5/9/2017	1105	76.8	6.44	4.85	49.2	17.7	0.00
17S	6/9/2017	1450	86.3	6.84	6.90	44	17.6	0.00
18S	4/12/2017	1305	6.4	6.95	9.53	77	5.82	0.00
18S	4/14/2017	1405	69.3	7.88	7.75	134.2	2.09	0.00
18S	4/26/2017	1330	64.5	7.07	8.71	78.9	2.31	0.00
18S	5/9/2017	1355	64.7	7.08	8.60	84.4	6.21	0.00
18S	6/9/2017	1345	68.2	7.23	7.44	85.4	9.04	0.00

Town Creek Watershed

Approximately 138 independent water quality measurements were collected in the Town Creek watershed from April 1, 2017 to March 31, 2018.

Monitoring Station Locations and Notes:

1T – Latitude *32, 35, 55.414 N*; Longitude *85, 28, 18.325 W*. Station 1T is located on Town Creek just upstream of the Samford Avenue crossing.
2T – Latitude *32, 35, 3.724 N*; Longitude *85, 28, 27.539 W*. Station 2T is located on Town Creek at the crossing of Gay Street.
3T – Latitude *32, 34, 46.858 N*; Longitude *85, 28, 42.094 W*. Station 3T is located on Town Creek at the crossing of East University Drive.
4T - Latitude *32, 39, 53.844 N*; Longitude *85, 28, 51.164 W.* Station 4T is located on Town Creek at the crossing of Shell-Toomer Parkway.

**See Insert for Maps of All Water Quality Monitoring Locations*

Water Quality Data for the Town Creek Watershed

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
1T	4/10/2017	1045	61.0	7.65	9.34	144.6	1.54	0.00
1T	4/24/2017	1030	62.5	7.43	7.92	136.2	2.84	0.22
1T	5/8/2017	1610	67.5	7.27	8.50	244.8	17.3	0.00
1T	6/14/2017	950	71.2	7.19	8.05	155.8	2.14	0.04
1T	9/20/2017	915	72.3	6.30	7.42	162	8.31	2.00
1T	10/23/2017	1525	69.7	6.83	7.75	127	11.6	2.00
1T	12/11/2017	1015	51.1	7.08	9.91	169	2.09	0.92
1T	1/2/2018	1010	43.3	7.20	11.2	161	3.28	0.00
1T	1/12/2018	1000	58.1	6.29	9.09	117	36.7	0.20
1T	2/20/2018	1250	64.8	7.04	10.4	179	-	0.00
2T	4/14/2017	1405	69.3	7.88	7.75	134.2	2.09	0.00

Site Number	Sample Date	Sample Time	Water Temperature (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Recent Precipitation (in)
2T	5/1/2017	1115	69.1	7.07	8.72	70.9	36.3	1.46
2T	5/10/2017	1040	66.3	7.56	9.44	198.1	2.50	0.00
2T	6/15/2017	1235	76.3	7.38	7.77	114.3	29.8	0.04
3T	4/14/2017	1415	69.8	7.33	8.50	130.6	1.92	0.00
3T	5/1/2017	1120	69.5	7.07	7.98	71.5	38.4	1.46
3T	5/10/2017	1050	67.8	7.29	8.48	167.8	2.79	0.00
3T	6/15/2017	1225	75.7	7.29	7.59	1285	20.6	0.04
4T	4/17/2017	1230	68.8	7.74	8.45	136.9	1.17	0.00
4T	5/1/2017	1140	69.5	7.17	8.49	63	-	1.46
4T	5/10/2017	1510	70.7	7.84	9.77	143.7	2.29	0.00
4T	6/14/2017	-	74.5	7.56	5.30	119.9	4.08	0.04

4.0 Lake Ogletree Source Water Monitoring Program

4.1 Purpose

Lake Ogletree, located southeast of Auburn, Alabama, is the City of Auburn's primary drinking water source. At full pool its surface area is approximately 300 acres with a capacity of approximately 1.6 billion gallons of water. Chewacla Creek is the primary stream that feeds Lake Ogletree, which has a 33 square mile watershed (as delineated from the Lake Ogletree dam and spillway). Although mostly forested and agricultural lands, the Lake Ogletree watershed includes industrial, commercial/retail, and residential land-uses, which should increase as the population of Lee County increases. Although a recently updated Source Water Assessment Program (SWAP) determined Lake Ogletree to be at low to moderate risk from stormwater-driven pollutants, it is imperative that water quality monitoring be performed to identify potential threats to water quality and to protect the health and vitality of Chewacla Creek and the encompassing watershed. Therefore, the Water Works Board of the City of Auburn (AWWB) is committed to performing monitoring and analysis of a wide range of physical, chemical, and mineral water quality parameters both in Lake Ogletree and its contributing watershed.

4.2 Methods

AWWB conducts water quality sampling and analysis at 14 locations throughout the Lake Ogletree Watershed. Water quality assessment includes sampling at locations along the main stem of Chewacla Creek ("C-Sites"), its smaller tributaries ("T-Sites"), and Lake Ogletree ("L-Sites"). Parameters monitored once every two months at these locations include E. coli, orthophosphate, total phosphorus, nitrate-nitrite, Kjeldahl-N, pH, temperature, turbidity, specific conductance, and dissolved oxygen. A QA/QC field blank for orthophosphate, total phosphorus, nitrate-nitrite, and kjeldahl-N is collected at a single randomly selected site during each sampling round. Bi-weekly monitoring is also conducted at select sites for temperature, pH, specific conductance, dissolved oxygen, and turbidity. The following are the parameters which are included in this program and the method of analysis.

- Temperature – YSI 5560
- Specific Conductance – YSI 5560
- Dissolved Oxygen – YSI 2003 polarographic
- pH – YSI 1001
- Turbidity – LaMotte 2020WE turbidimeter
- Nitrate + Nitrite – EPA 353.2
- Total Kjeldahl Nitrogen – EPA 351.2
- Orthophosphate – SM 4500 PE-1999
- Total Phosphorus – EPA 365.4
- E. coli - SM 9223B-2004

4.3 Monitoring Stations and Data

T11 – Station T11 is located on lower Robinson Creek at Moore's Mill Road (CR 146). Latitude *32, 33, 48.221 N*; Longitude *85, 23, 23.423 W*

T12N – Station T12N is located upper Robinson Creek, just upstream of Highway 51 and downstream from an Opelika sanitary sewer lift station. Latitude *32, 37, 1.72 N*; Longitude *85, 22, 9.316 W*

T19 – Station T19 is located on an unnamed tributary upstream of Emerald Lake. Latitude *32, 35, 36.364 N*; Longitude *85, 20, 37.00 W*

T22 – Station T22 is located on upper Robinson Creek, just downstream of Highway 51 and downstream from three Opelika sanitary sewer lift stations. Latitude *32, 36, 2.361 N*; Longitude *85, 22, 45.426 W*

T32 – Station T32 is located near the mouth of Nash Creek just before the confluence with Chewacla Creek. Latitude *32, 33, 18.484 N*; Longitude *85, 25, 30.655 W*

T34 – Station T34 is located on Chewacla Creek, upstream of Station C8. Latitude *32, 34, 32.672 N*; Longitude *85, 21, 49.692 W*

C1 – Station C1 is located at the forebay of Lake Ogletree, immediately downstream of the Society Hill Road bridge crossing. Latitude *32, 33, 20.161 N*; Longitude *85, 25, 36.026 W*

C2 – Station C2 is located at the bridge crossing of CR 027 with Chewacla Creek. Latitude *32, 33, 21.387 N*; Longitude *85, 24, 46.384 W*

C5 – Station C5 is located at the bridge crossing of Lee Road. 112 with Chewacla Creek. Latitude *32, 33, 6.291 N*; Longitude *85, 23, 41.151 W*

C7 – Station C7 is located at the bridge crossing of Highway 51 (Marvyn Parkway) with Chewacla Creek. Latitude *32, 33, 41.868 N*; Longitude *85, 22, 20.559 W*

C8 – Station C8 is located upstream of the bridge crossing of CR 146 (Moore's Mill Road) with Chewacla Creek. Latitude *32, 34, 5.715 N*; Longitude *85, 21, 42.033 W*

L1 – Station L1 is located in Lake Ogletree, immediately northeast of the Lake Ogletree spillway. Latitude *32, 32, 50.846 N*; Longitude *85, 26, 52.83 W*

L2 – Station L2 is located in Lake Ogletree near the water intake pump house. Latitude *32, 33, 5.626 N*; Longitude *85, 26, 45.038 W*

L5 – Station L5 is located along the northwest finger of Lake Ogletree, near the confluence with the East Lake/Green Chapel tributary. Latitude *32, 33, 37.961 N*; Longitude *85, 25, 38.369 W*

**See Insert for Maps of All Water Quality Monitoring Locations*

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (cfu/100 mL)
C1	4/26/2017	75.2	7.8	9.15	85	3.52	0	0.357	0.03	0.093	4
C1	6/12/2017	86	8.94	8.91	88	3.43	0	0	0.017	0	1
C1	8/15/2017	83.2	7.8	7.35	73	8.32	0	0.788	0.037	0	14
C1	10/27/2017	56.4	7.32	10.68	80	6	0	0	0.041	0.112	146
C1	12/28/2017	47.7	6.94	11.93	73	7.78	0.079	0	0.025	0	172
C1	2/21/2018	64.7	6.88	9.26	72	8.38	0.103	0	0	0	88
C2	8/15/2017	77.4	7.1	6.81	81	7.32	0.097	0	0.036	0	93
C2	10/27/2017	56.2	7.13	9.37	87	6.34	0.055	0	0.03	0.142	91
C2	12/28/2017	47.9	6.93	11.03	77	7.76	0.091	0	0.021	0	345
C2	2/21/2018	65.9	6.89	8.68	72	7.62	0.124	0	0	0	249
C5	4/26/2017	63.1	7.35	7.96	93	6.22	0.071	0	0.034	0.083	111
C5	6/12/2017	72.8	7.19	7.11	88	13.8	0.112	0	0.045	0	196
C5	10/27/2017	55.5	7.3	8.76	95	5.47	0.052	0	0.021	0.148	260
C5	12/28/2017	47.9	6.95	11	83	7.56	0.085	0	0.032	0	199

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (cfu/100 mL)
C5	2/21/2018	66.4	7.05	8.53	78	8.1	0.091	0	0	0	276
C7	4/26/2017	65.9	7.07	7.45	85	10.6	0.091	0	0.021	0.061	687
C7	6/12/2017	73.6	6.97	6.72	86	13.2	0.15	0	0.03	0	209
C7	8/15/2017	78.1	7.11	6.75	83	8.42	0.104	0.501	0.036	0.115	548
C7	10/27/2017	56.5	6.97	8.42	82	7.59	0.098	0	0.036	0.147	299
C7	12/28/2017	48	6.84	10.04	80	9.49	0.136	0	0.043	0	166
C7	2/21/2018	66.1	6.72	8.13	81	11	0.162	0	0	0.135	140
C8	4/26/2017	70.5	7.47	9.18	87	7.15	0	0	0.02	0.082	517
C8	6/12/2017	76.9	7.18	8.14	86	8.78	0.137	0	0.036	0	308
C8	8/15/2017	81	7.13	7.42	88	8.4	0.16	0.701	0.028	0	411
C8	10/27/2017	56.5	6.97	8.42	82	7.59	0.069	0	0.017	0	461
C8	12/28/2017	50.4	6.92	11.29	87	7.87	0.121	0	0.028	0	285
C8	2/21/2018	68.3	6.78	9.07	82	12.3	0.157	0	0	0.101	1553
L1	4/26/2017	74.9	8.15	9.43	84	1.85	0	0	0.034	0.074	4
L1	6/12/2017	86.6	9.11	8.34	92	2.46	0	0	0.028	0	0
L1	8/15/2017	87.4	8.75	8.4	73	6.23	0	1.06	0.034	0.133	4
L1	10/27/2017	67.4	7.66	8.78	76	18.5	0	0	0.124	0.149	4
L1	12/28/2017	49.1	6.53	11.91	89	28.2	0	0	0.032	0	32
L1	2/21/2018	65.9	7.12	11.08	70	16.8	0.048	0	0	0.12	6
L2	4/10/2017	68.6	7.49	9.02	78	3.13	-	-	-	-	-
L2	4/17/2017	74.9	8.04	8.87	79	2.03	-	-	-	-	-
L2	4/24/2017	74.1	7.69	8.99	82	3.03	-	-	-	-	-
L2	4/26/2017	74.9	8.1	9.73	84	2.78	0	0	0.032	0	2
L2	5/2/2017	75.7	7.52	8.47	84	3.37	-	-	-	-	0
L2	5/15/2017	79.3	8.26	8.9	92	2.98	-	-	-	-	-
L2	5/30/2017	81.2	8.69	9.34	93	3.65	-	-	-	-	-
L2	6/12/2017	85.7	9.11	9.64	92	3.63	0	0	0.034	0	6
L2	6/26/2017	82.3	8.83	8.34	83	6.75	-	-	-	-	-
L2	7/11/2017	90.7	8.45	7.54	83	3.62	-	-	-	-	-
L2	7/24/2017	88.3	8.53	8.54	79	3.51	-	-	-	-	-
L2	8/7/2017	86.3	8.88	9.03	75	1.41	-	-	-	-	-
L2	8/15/2017	87.2	8.37	8.32	73	6.06	0	0.755	0	0	19
L2	8/21/2017	89	8.77	8.27	75	3.45	-	-	-	-	-
L2	9/5/2017	83.9	8.54	9.18	75	4.89	-	-	-	-	-
L2	9/21/2017	84	8.67	9.95	76	5.34	-	-	-	-	-
L2	10/3/2017	75.4	7.43	7.72	76	6.75	-	-	-	-	-
L2	10/18/2017	73.4	7.9	8.18	78	4.8	-	-	-	-	-
L2	10/27/2017	67.4	7.52	8.85	78	13.5	0	0	0.019	0.114	2
L2	10/31/2017	65.5	7.3	9.9	77	16.9	-	-	-	-	-
L2	11/20/2017	60.1	7.62	11	76	8.8	-	-	-	-	-
L2	12/20/2017	51.3	8.48	13.69	91	9.87	-	-	-	-	-
L2	12/28/2017	51	7	10.95	87	19	0	0	0	0	20
L2	1/17/2018	44.3	8.03	14.51	84	-	-	-	-	-	-
L2	2/19/2018	62.6	9.07	12.39	67	-	-	-	-	-	-
L2	2/21/2018	64.2	8.1	12.11	69	11.1	0	0	0	0.165	1
L2	3/5/2018	61.7	6.89	9.42	70	4.74	-	-	-	-	-
L2	3/19/2018	66.5	7.26	10.31	70	3.21	-	-	-	-	-
L5	4/26/2017	66.1	7.4	8.72	91	1.62	0.113	0	0.021	0.058	96
L5	6/12/2017	87.7	8.85	9.4	85	4.04	0	0	0.025	0	0
L5	8/15/2017	79.9	7.43	6.82	68	3.5	0.122	0.503	0.023	0	40
L5	10/27/2017	60.7	7.23	9.18	82	4.83	0.05	0	0.017	0.147	91
L5	12/28/2017	49	6.89	11.37	80	6.29	0.131	0	0.056	0	62
L5	2/21/2018	66	7.5	9.52	71	7.65	0.062	0	0	0.107	16
T11	4/26/2017	64.2	7.34	9.62	105	-	0	0	0.039	0	91
T11	6/12/2017	71.5	7.28	7.89	101	11.28	0.087	0	0.021	0	142
T11	8/15/2017	77	7.03	7.73	103	7.73	0.056	0.502	0.058	0	161

Site Number	Sample Date	Water Temp. (F)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (uS/cm)	Turbidity (NTU)	Nitrate + Nitrite (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Orthophos-phate (mg/L)	Total Phosphorus (mg/L	E. coli (cfu/100 mL)
T11	10/27/2017	56.7	7.28	10.19	108	5.92	0	0	0.032	0.136	204
T11	12/28/2017	48.5	6.86	11.36	98	8.48	0.041	0	0.067	0	166
T11	2/21/2018	65.4	6.9	9.3	89	7.22	0.056	0	0	0	125
T12N	4/26/2017	68.8	7.44	8.62	176	0.73	0.176	0	0.082	0.232	0
T12N	6/12/2017	73.2	7.37	8	181	1.92	0.14	0	0.174	0.161	1
T12N	8/15/2017	79.4	7.2	7.13	192	0.77	0.12	0.484	0.169	0.23	122
T12N	10/27/2017	68.5	7.36	8.5	171	0.97	0.149	0	0.178	0.152	0
T12N	12/28/2017	55.5	6.96	9.9	170	1.59	0.209	0	0.098	0.177	0
T12N	2/21/2018	62.1	6.9	9.58	165	1.46	0.25	0	0	0.171	0
T19	4/26/2017	68.2	6.99	7.25	113	16.4	0	0	0.036	0.068	140
T19	6/12/2017	75.4	7.1	6.74	126	18.4	0.085	0	0.032	0.084	1046
T19	8/15/2017	78.8	7.27	6.85	130	10.7	0.092	0.935	0.026	0	162
T19	10/27/2017	59.8	7.03	8.71	125	8.92	0.079	0	0.021	0.136	72
T19	12/28/2017	48	6.78	11.11	113	11.19	0.093	0	0.036	0	501
T19	2/21/2018	67.1	7.05	8.77	118	-	0.08	0	0	0	88
T22	4/26/2017	63.6	7.3	8.19	161	5.08	0.096	0	0.025	0.146	64
T22	6/12/2017	73.5	7.19	7.13	135	41	0.152	0	0.085	0.167	866
T22	8/15/2017	76.4	7.18	7.77	168	4.94	0.097	0	0.089	0.169	112
T22	10/27/2017	59.2	7.23	8.8	160	4.38	0.078	0	0.091	0	31
T22	12/28/2017	50.4	6.95	10.75	150	5.55	0.122	0	0	0	365
T22	2/21/2018	64.9	6.94	9.71	135	6.58	0.108	0	0	0.114	44
T32	4/26/2017	64.2	7.56	9.72	69	5.62	0.062	0	0.026	0.093	86
T32	6/12/2017	78.8	8.39	8.34	76	3.68	0	0	0.026	0	2
T32	8/15/2017	77.2	7.35	8.12	68	5.02	0.066	0	0.037	0	276
T32	10/27/2017	56.2	7.48	10.5	70	5.47	0	0	0.025	0.159	52
T32	12/28/2017	47.3	6.99	12.07	67	6.98	0.063	0	0.023	0	135
T32	2/21/2018	66	7.12	9.68	62	8.01	0.075	0	0	0	145
T34	4/26/2017	67	7.07	7.85	83	6.97	0	0	0.017	0.056	172
T34	6/12/2017	75.8	6.84	7.13	78	11.8	0.097	0	0.041	0	225
T34	8/15/2017	79.6	7.17	6.35	85	6.46	0.114	0	0.039	0	228
T34	10/27/2017	59.6	7.07	8.03	88	5.7	0	0	0.026	0.132	130
T34	12/28/2017	48.9	6.86	10.73	85	8.39	0.064	0	0.049	0	96
T34	2/21/2018	67	6.62	8.58	79	8.8	0.071	0	0	0	365

5.0 WPCF Dissolved Oxygen Monitoring

5.1 Purpose

Staff have been collecting in-stream dissolved oxygen data upstream and downstream of both WPCF's effluent discharge points since August of 2006. This monitoring provides valuable data assuring that the effluent discharged from Auburn's WPCF is not causing decreases in the dissolved oxygen content of Parkerson's Mill Creek during the critical summer months. Monitoring at the Northside WPCF was discontinued in 2013 due to closure of the plant, however data collection resumed in 2015. Monitoring is performed on a frequent basis (almost daily) using a YSI (Clark Cell) and/or Hach (LDO) dissolved oxygen probe at points both upstream and downstream of each effluent discharge location.

5.2 Definition and Methods

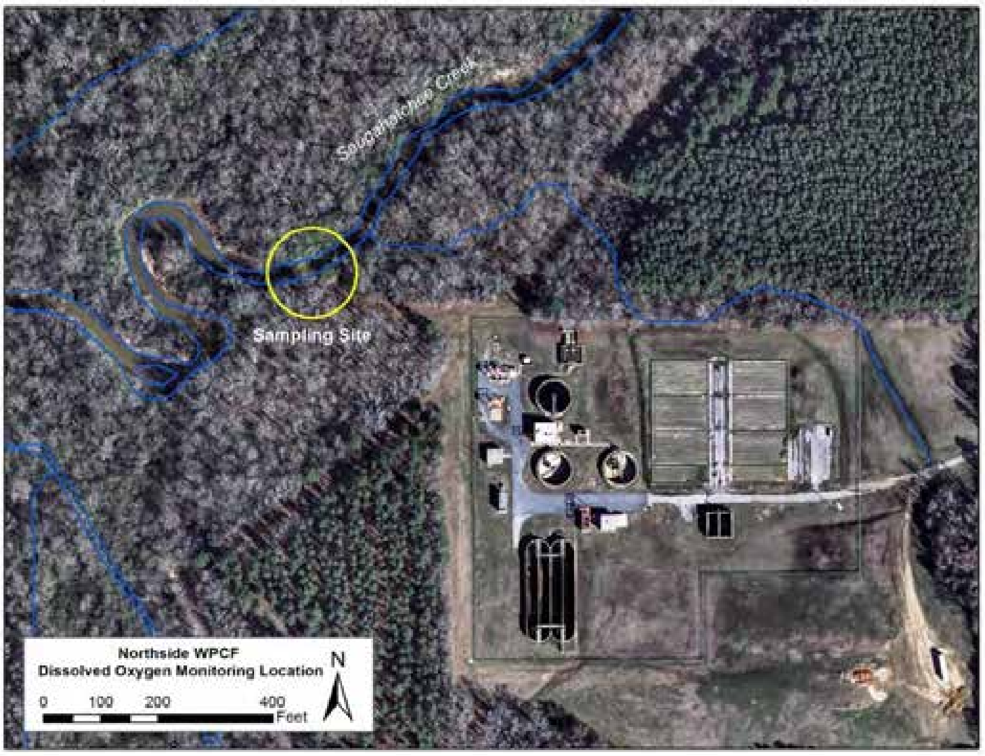
As noted above, dissolved oxygen measurements are taken with a YSI (Clark Cell) and/or HACH (Luminescent Dissolved Oxygen) probe.

- Dissolved Oxygen – This is the amount of oxygen that has been dissolved in the water column, which comes from both the atmosphere and photosynthesis by aquatic plants.

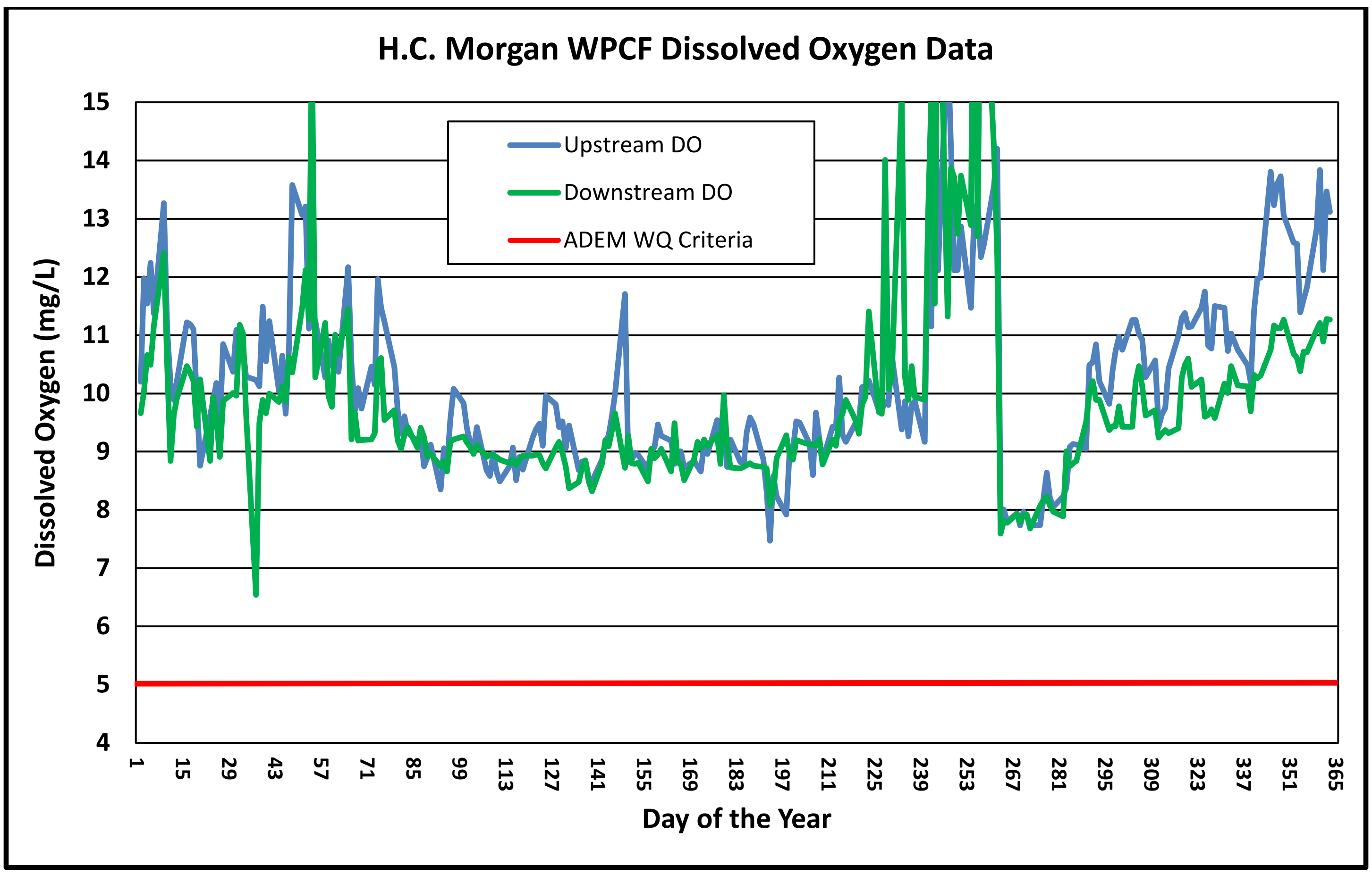
5.3 Monitoring Stations

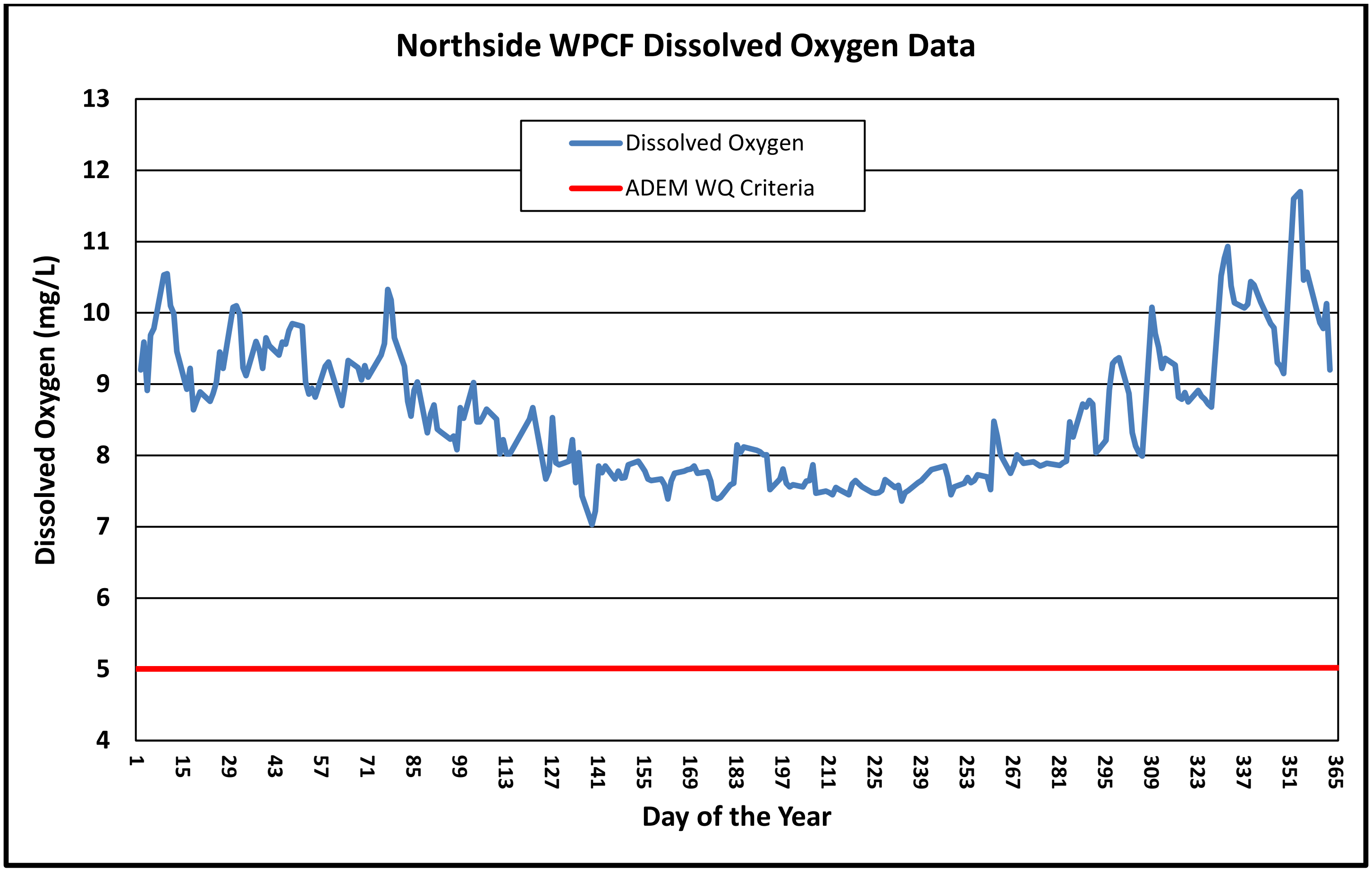
H.C. Morgan WPCF Upstream Latitude *32, 32, 9.890 N;* Longitude *85, 30, 20.443 W*
H.C. Morgan WPCF Downstream Latitude *32, 33, 9.077 N;* Longitude *85, 30, 19.699 W*

Northside WPCF Latitude *32, 37, 41.32 N;* Longitude *85, 32, 44.75 W*



5.4 Data





6.0 Outfall Screening

6.1 Purpose

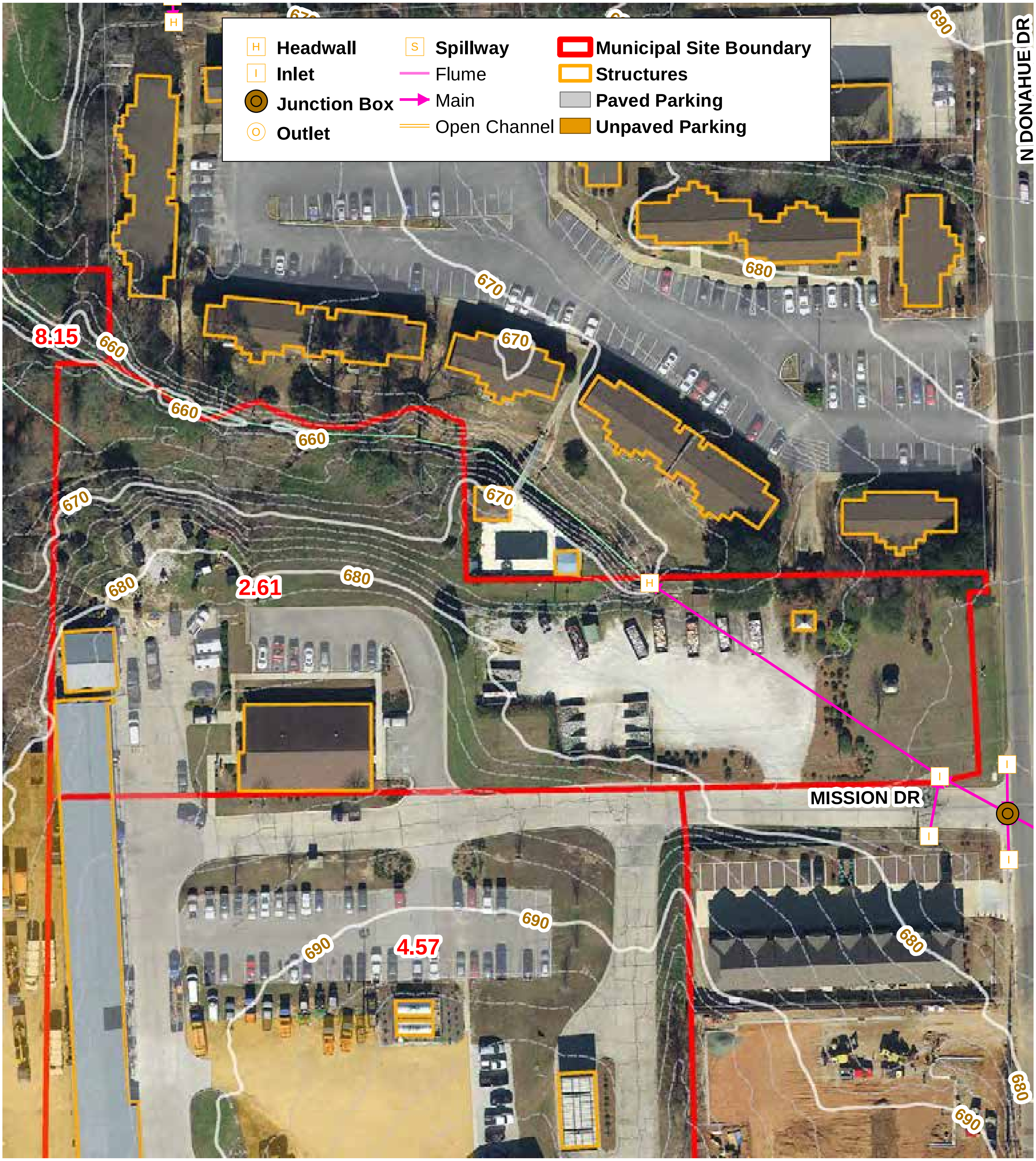
According to ADEM Phase II NPDES General Permit ALR040003, the permitee shall implement an ongoing program to detect and eliminate illicit discharges to the MS4 to the maximum extent practicable. The permit requires a dry weather screening program to detect and address non-stormwater discharges to the MS4. The table that follows includes the water quality monitoring data that were collected at stormwater outfalls from April 1, 2017 to March 31, 2018.

6.2 Data

Site	Sample Date	Surfactants (mg/L)	Ammonia (mg/L)	Potassium (mg/L)	Ammonia & Potassium Ratio	Fluoride (mg/L)	E-Coli (CFU/100mL)	Boron (mg/L)
P30	2/6/2018	10.1	8.87	17.63	0.5	-	-	-
P89	2/6/2018	0.0	-	-	-	0.2	-	-
P71	10/24/2017	0.0	-	-	-	0.2	100	-
P64	10/19/2017	0.0	-	-	-	0.03	3950	-
P59	10/12/2017	3.5			0.09	-	1300	0.14
P83	10/12/2017	-	-	-	-	0.0	50	0.01

APPENDIX F

MUNICIPAL FACILITIES MAPS AND STORMWATER QUESTIONNAIRE



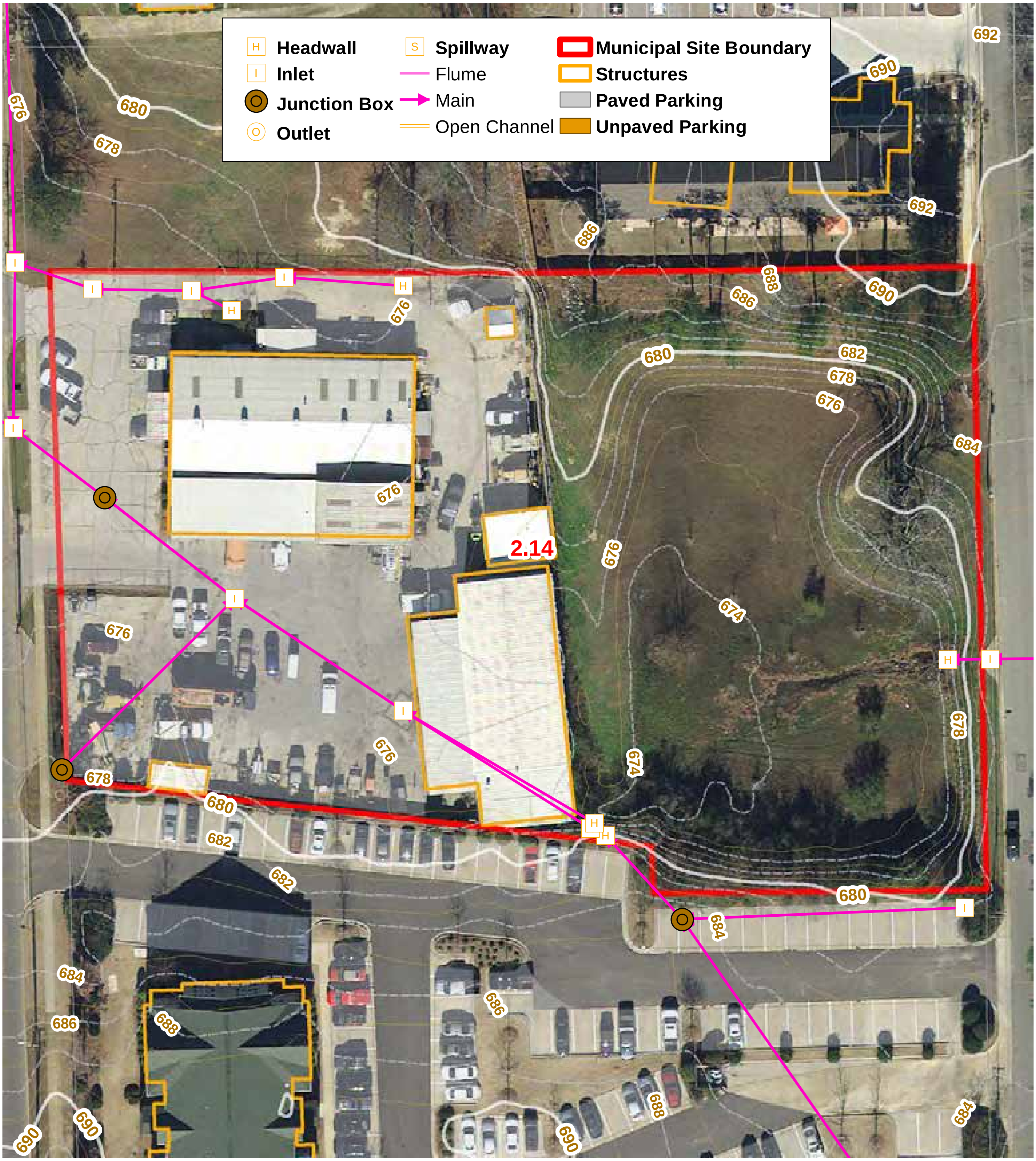
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 62.5 125 250 Feet

N

Environmental Services



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 40 80 160

N

Fleet Services

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 15 30 60 Feet

N

City Hall

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 10 20 40

N

City Meeting Room

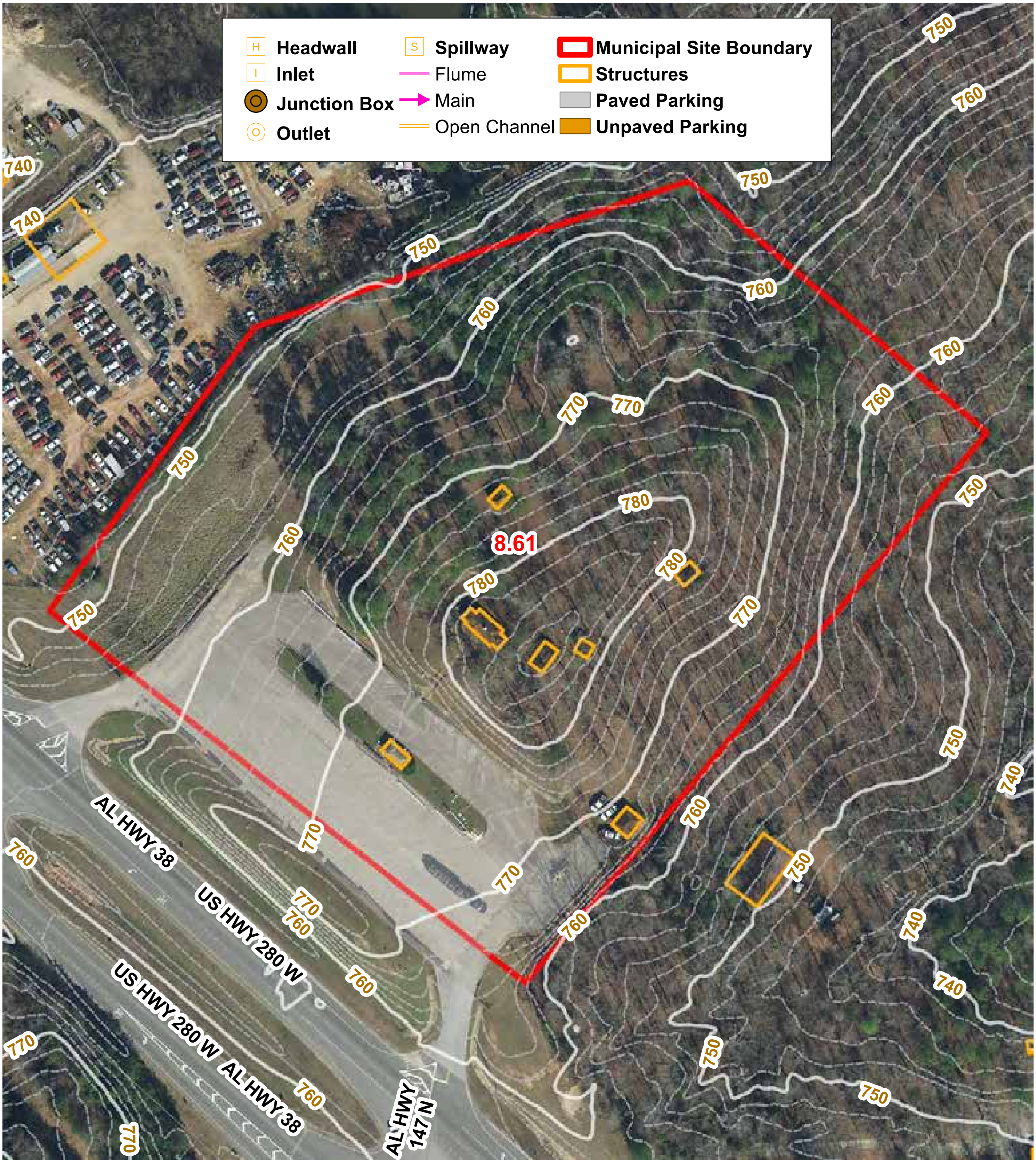
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 15 30 60

N

Human Resources



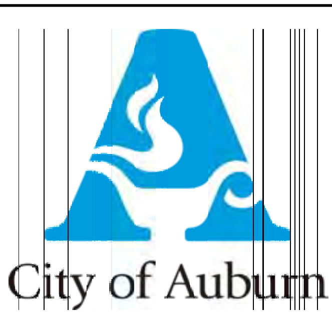
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

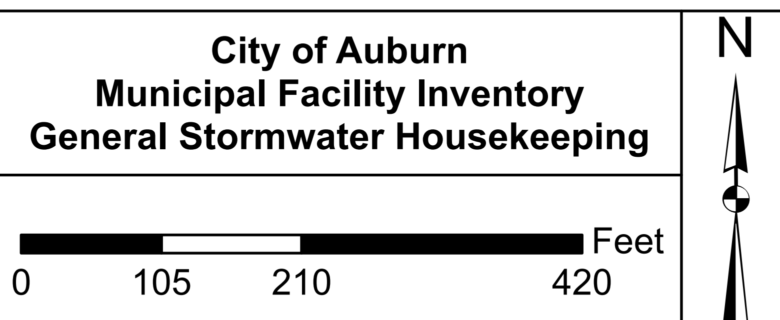
0 95 190 380 Feet

N

280 Rest Stop



City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping



Asheton Lane Property

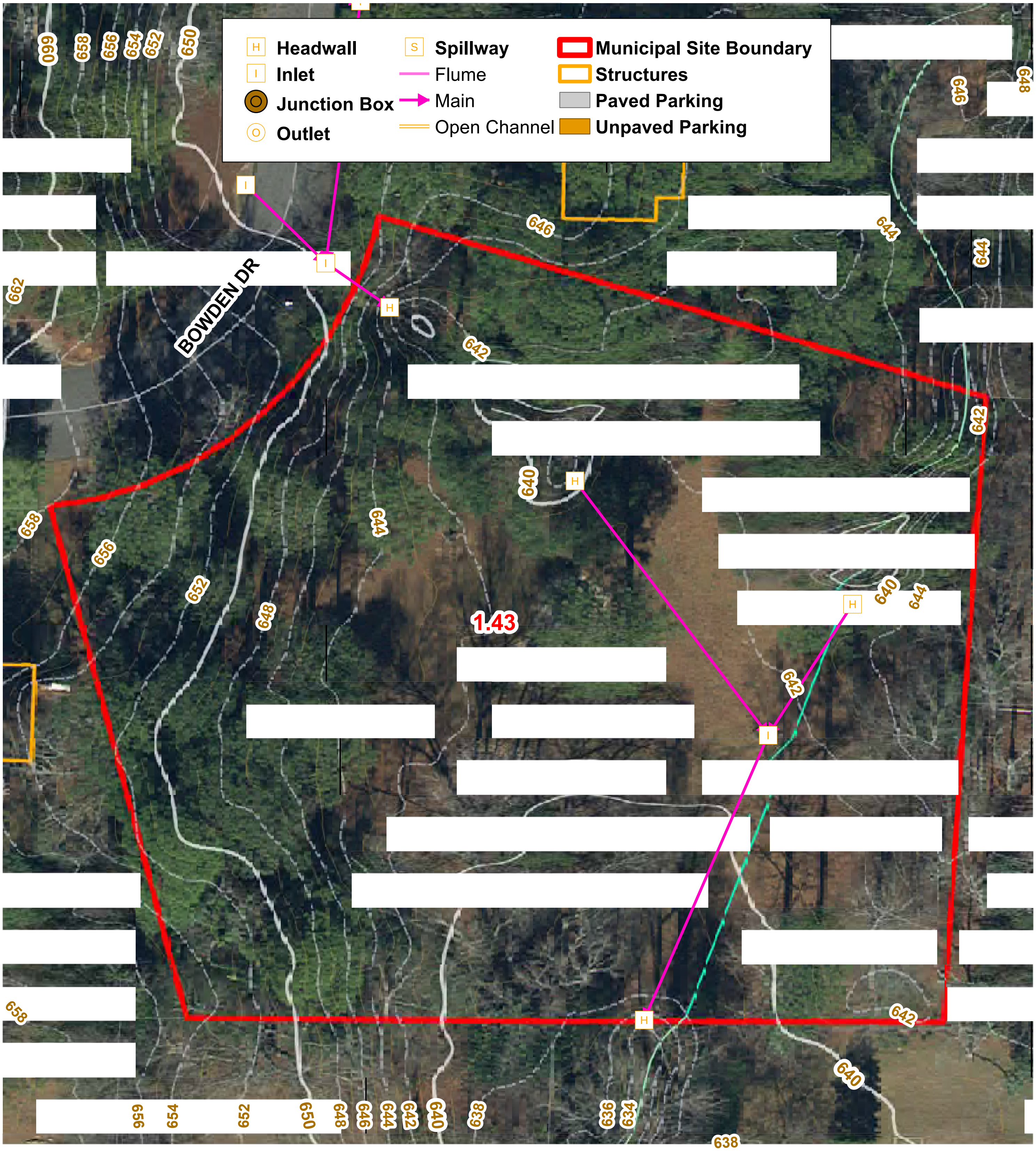
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 75 150 300

N

Baptist Hill Cemetery



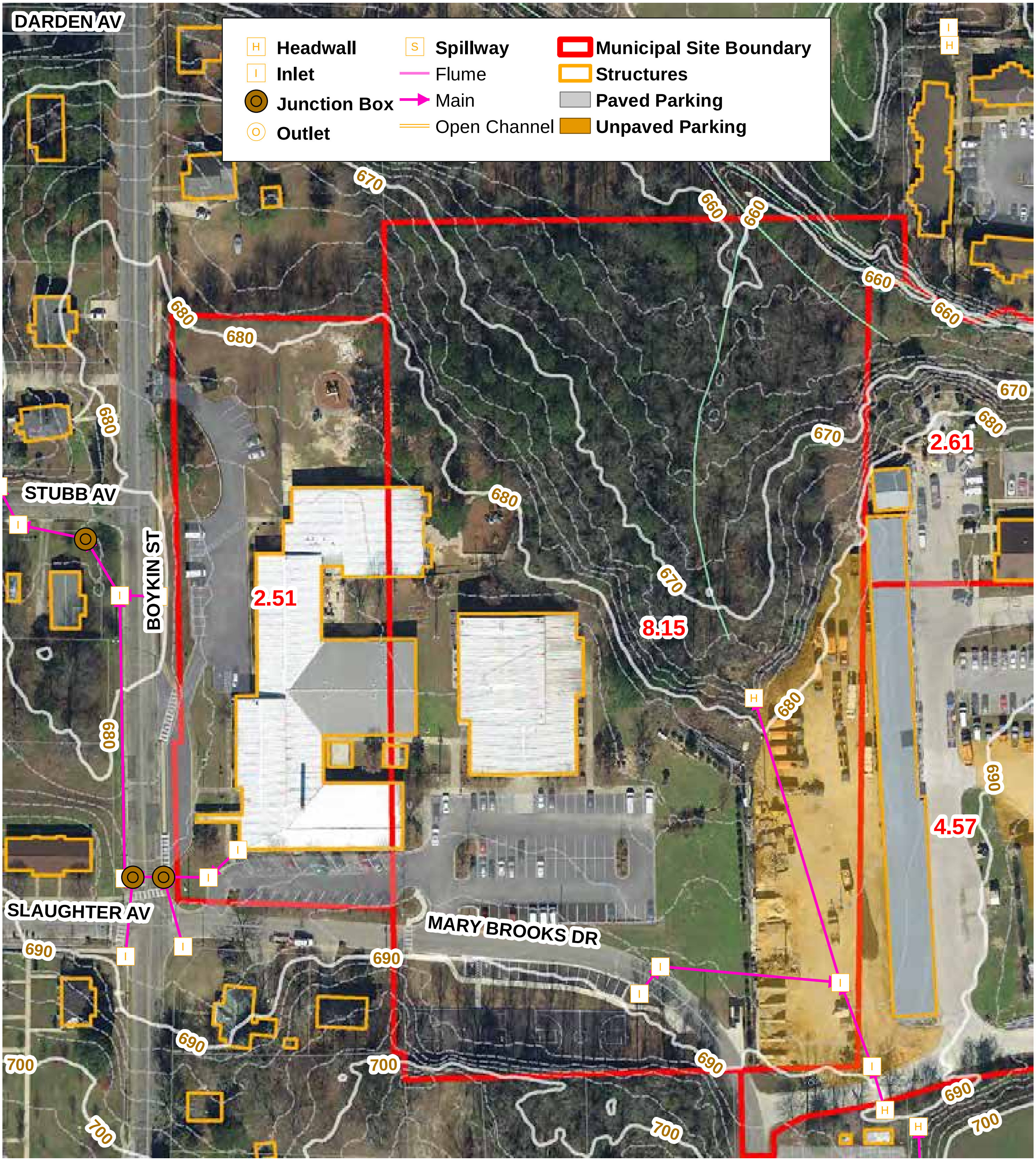
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 30 60 120 Feet

N

Bowden Park



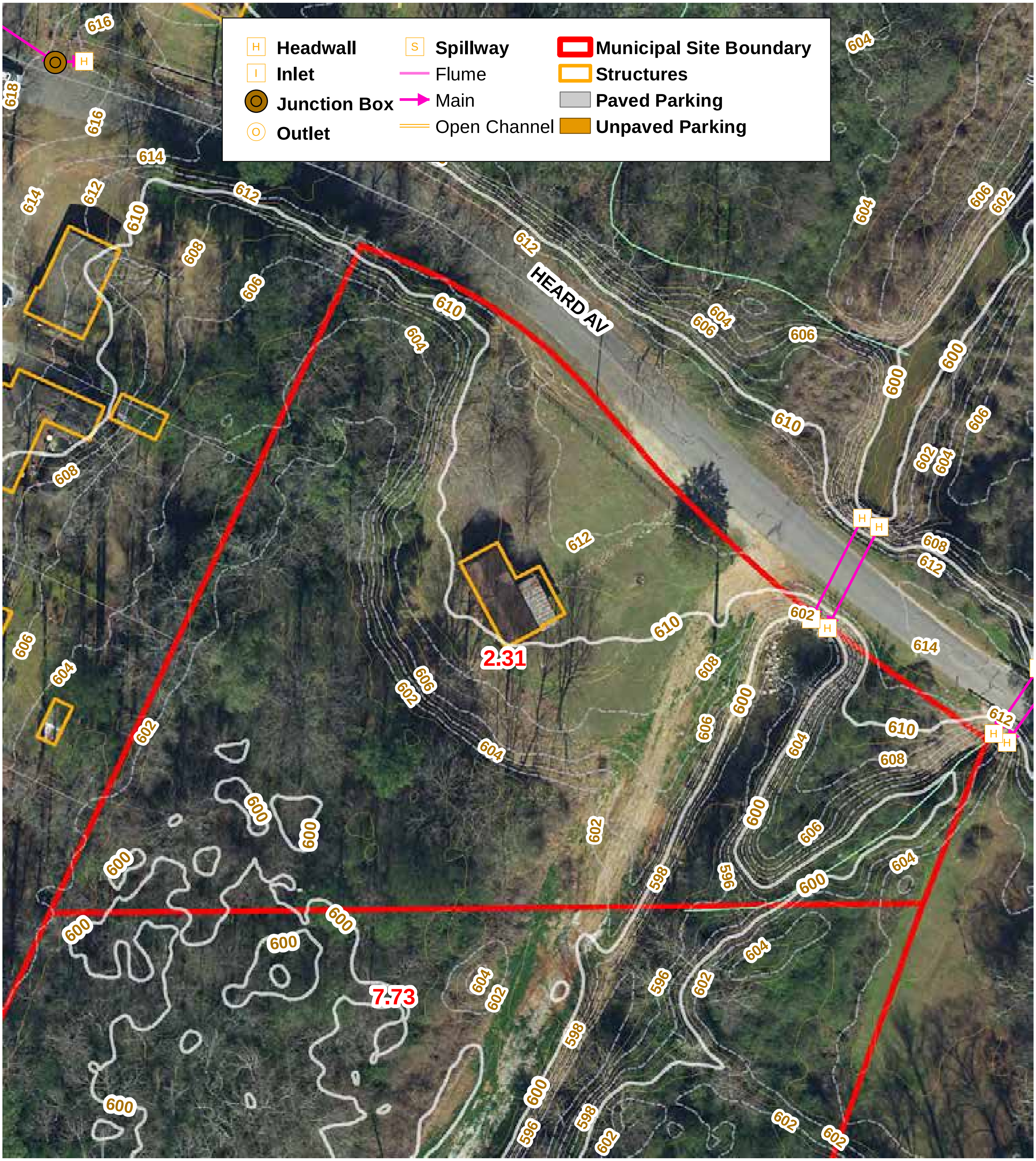
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 90 180 360

N

Boykin Community Center



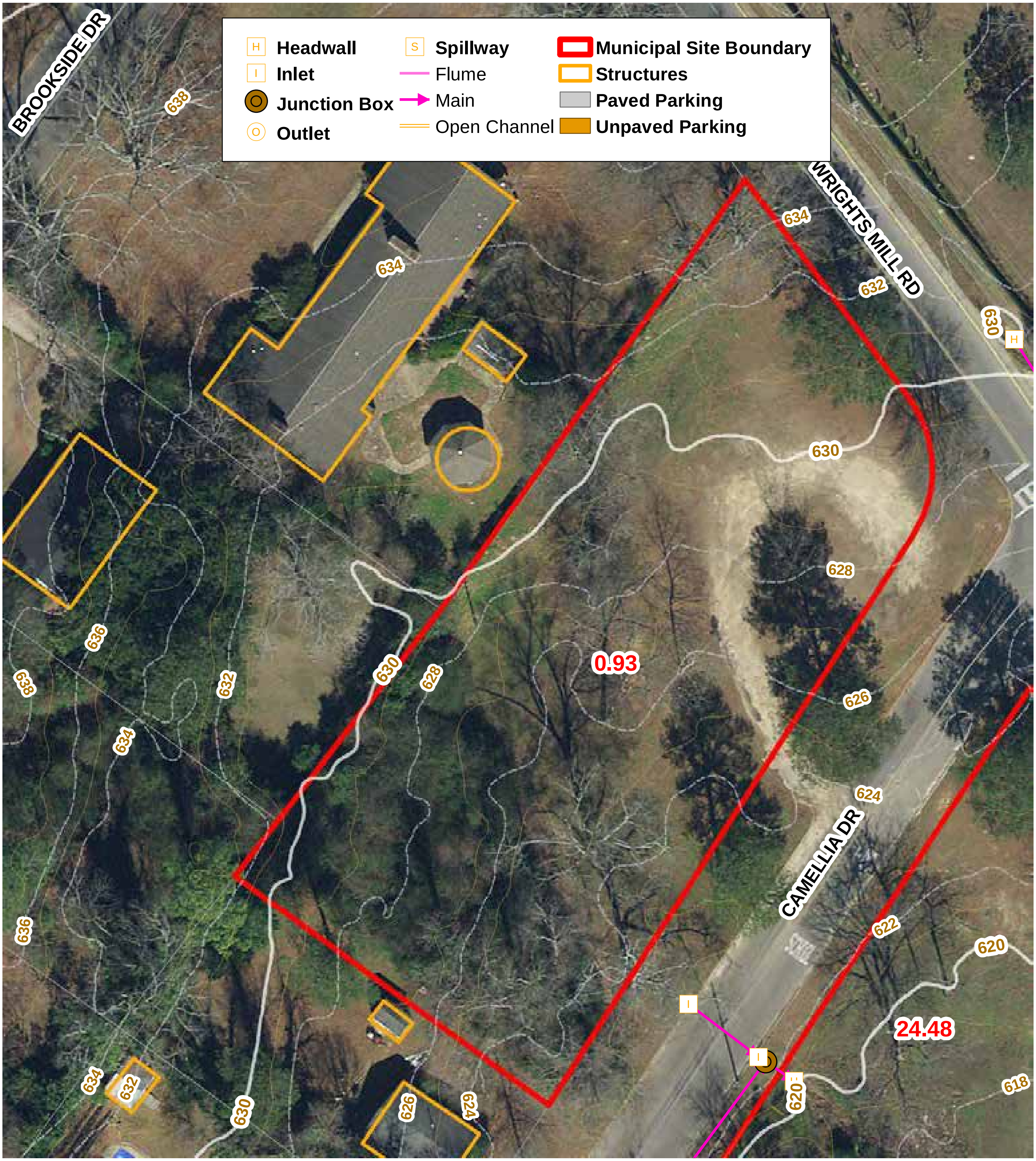
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 50 100 200

N

Boykin Scout Hut Property



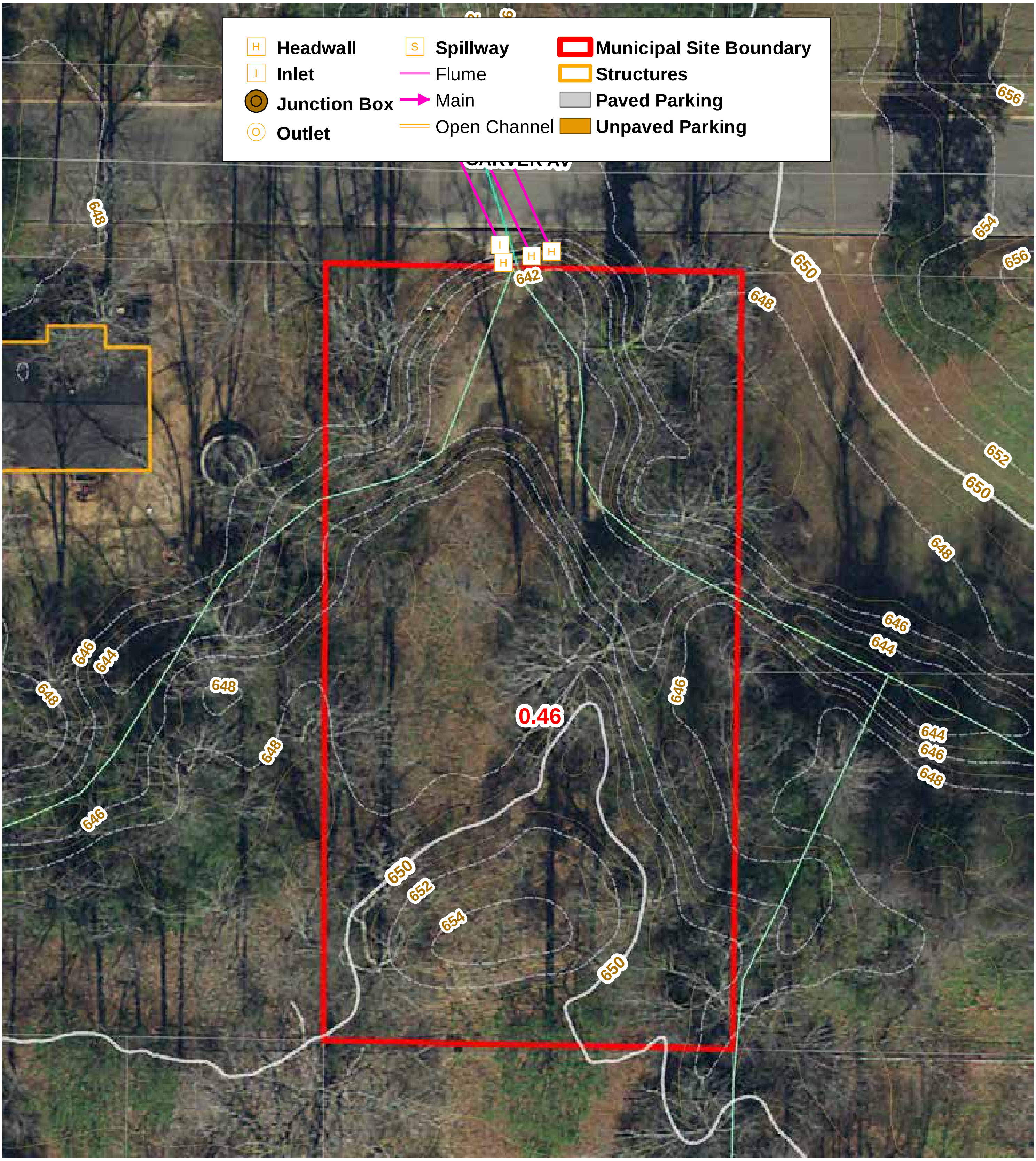
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 35 70 140

N

Camellia Dr @ Wrights Mill Rd Property



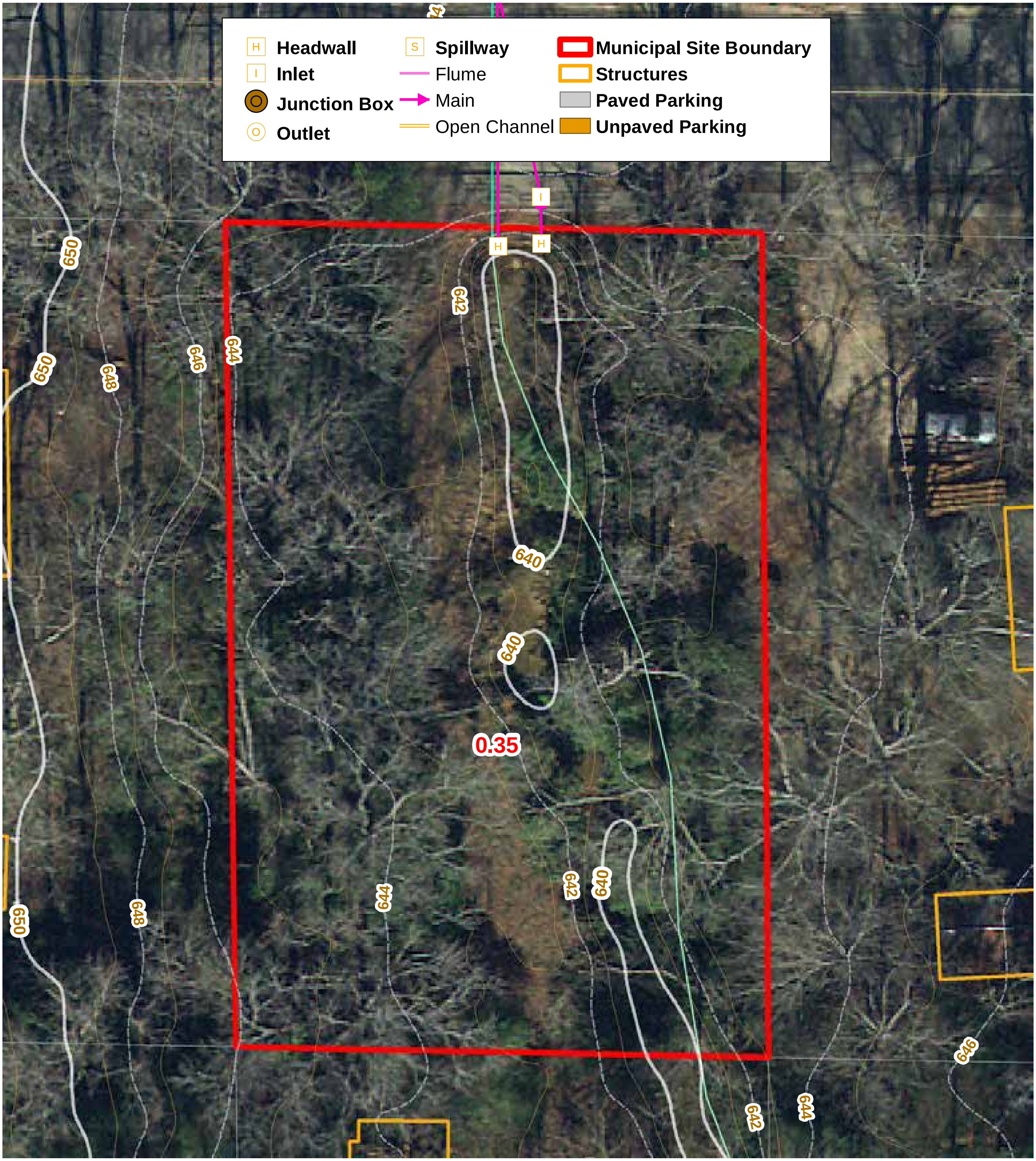
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 20 40 80

N

Carver Ave
Property



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 15 30 60

N

Clark Ave Property

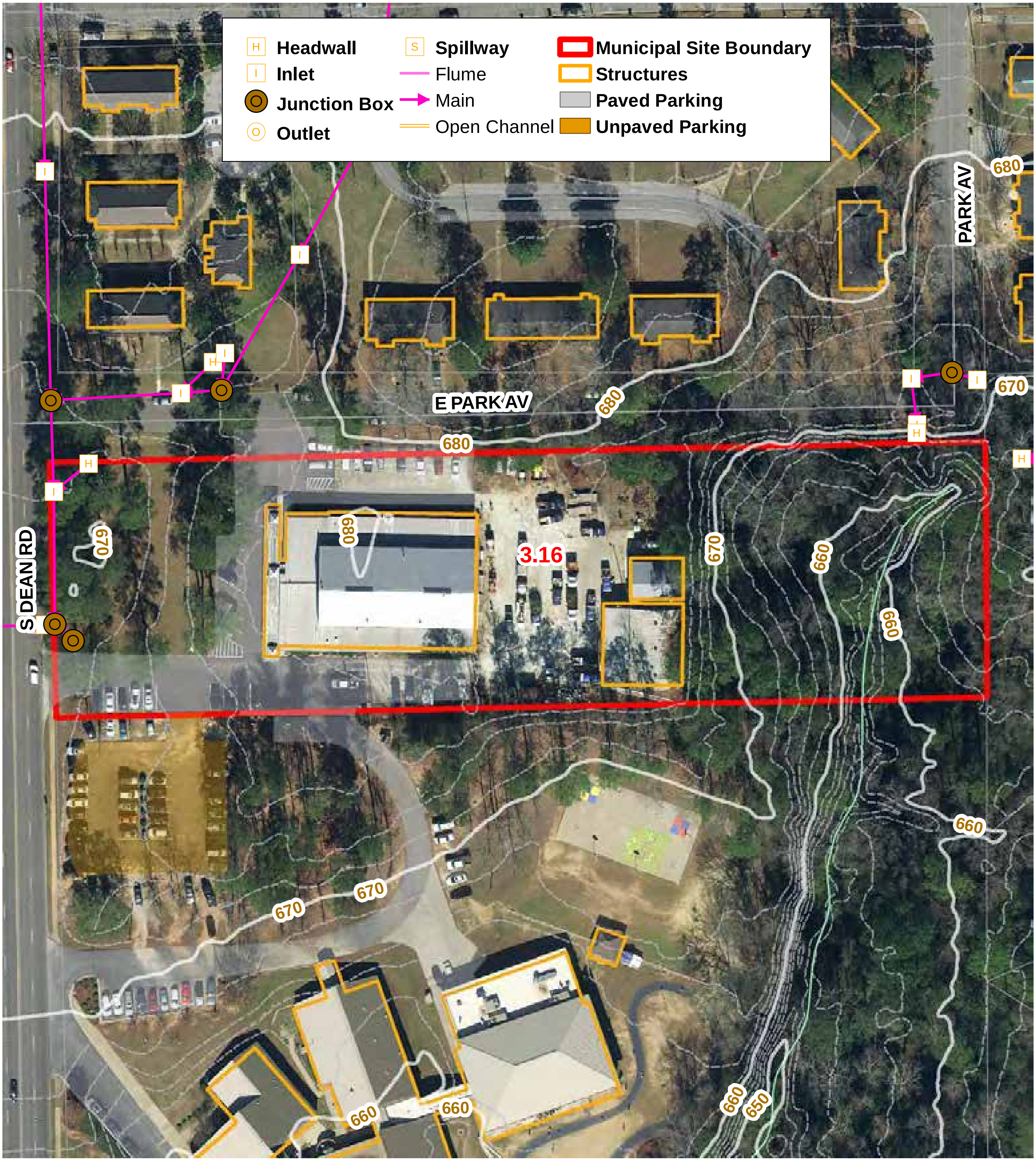
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 10 20 40 Feet

N

Davis Ct Property



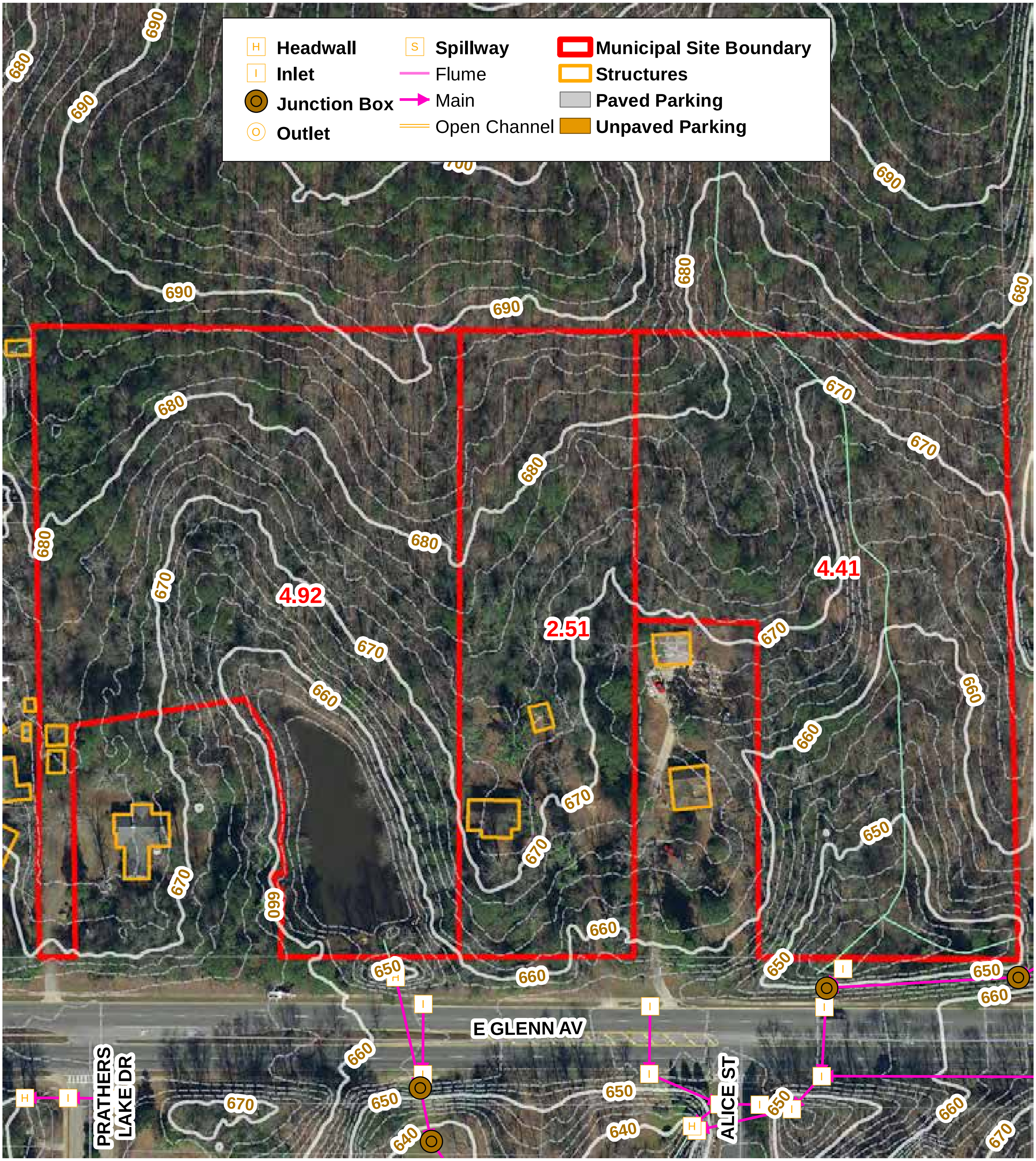
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 75 150 300

N

Dean Road Rec Center



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 95 190 380 Feet

N

Dinius Property

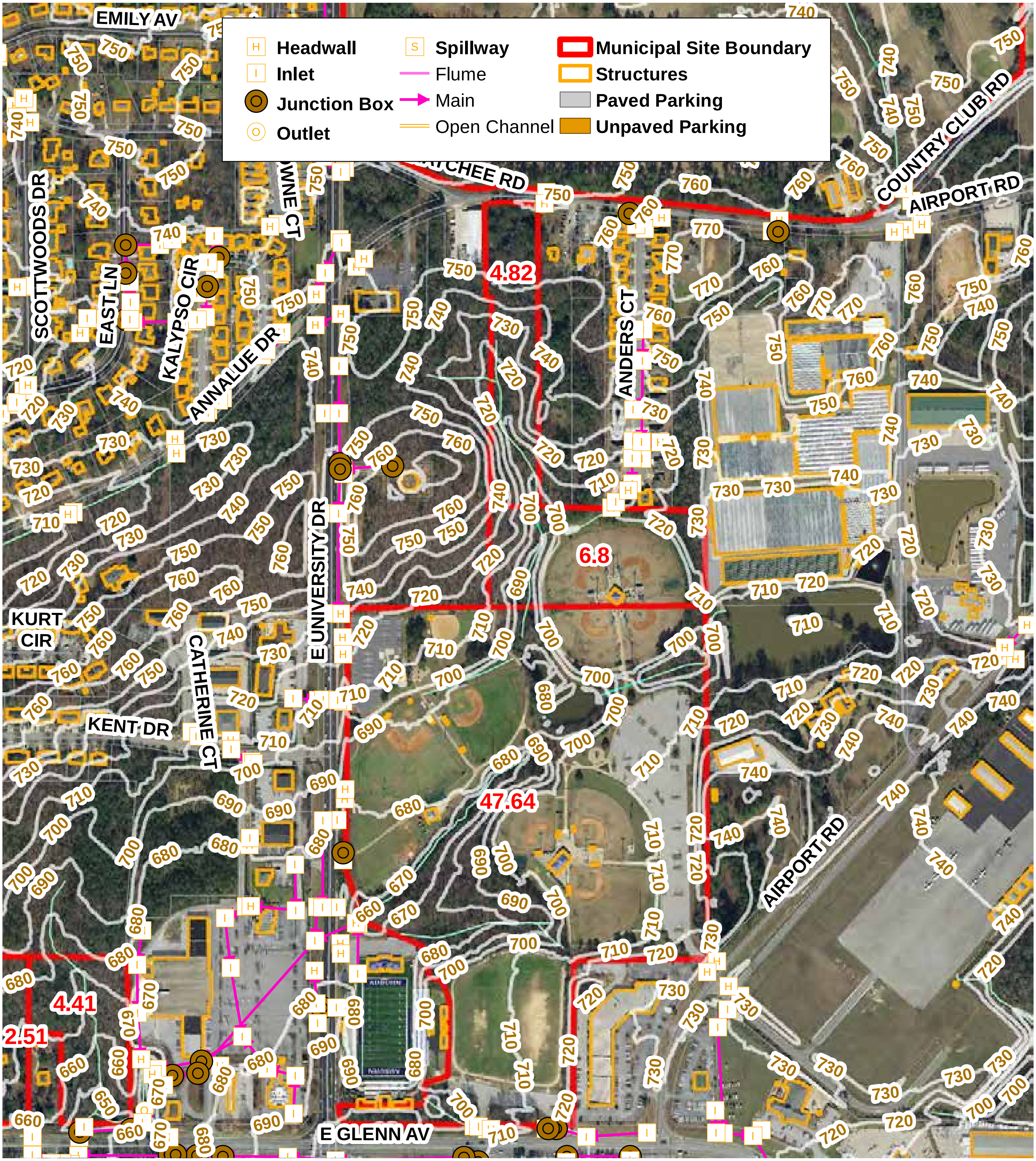
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 115 230 460 Feet

N

Drake Middle School



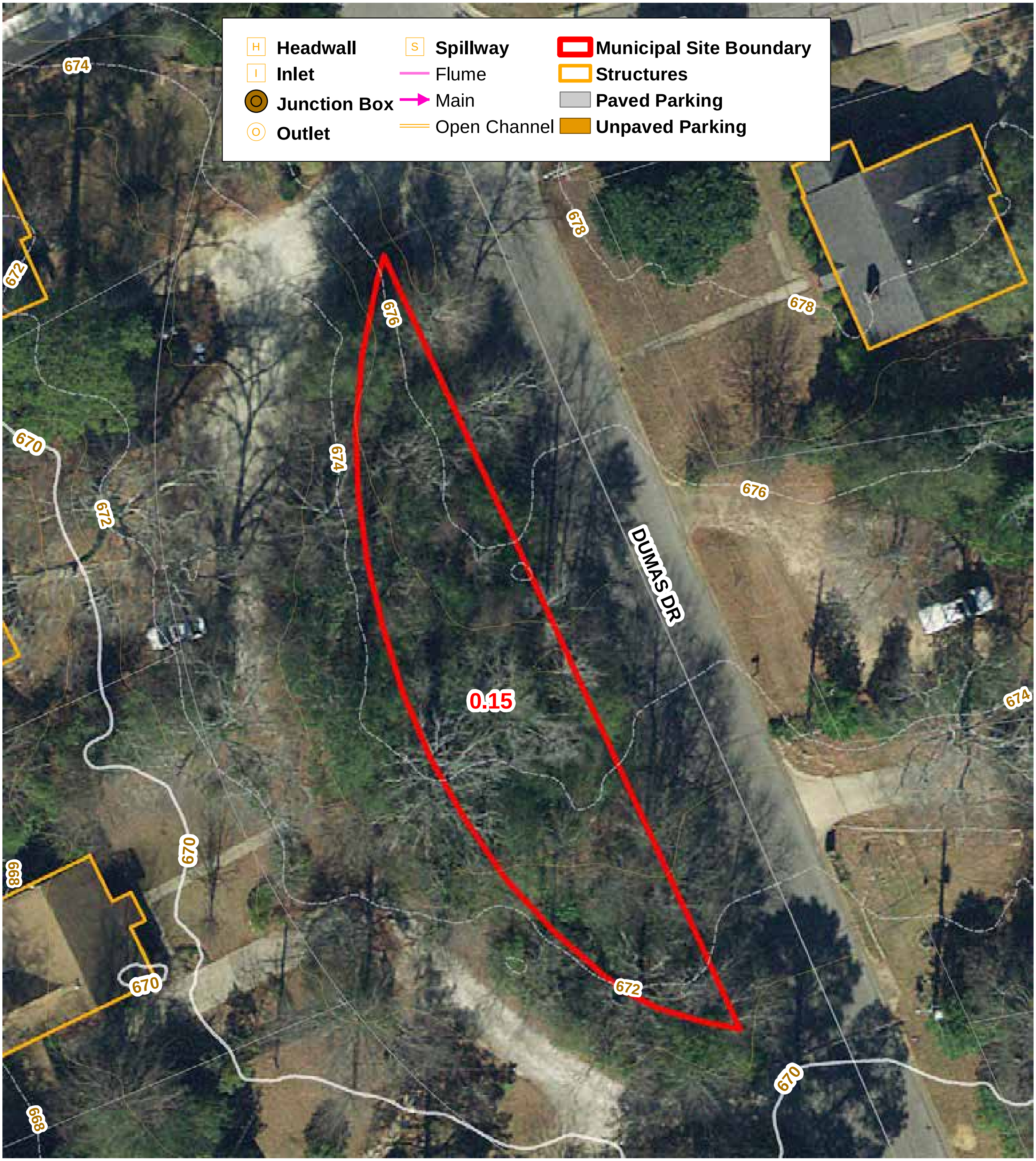
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 370 740 1,480

N

Duck Samford Park



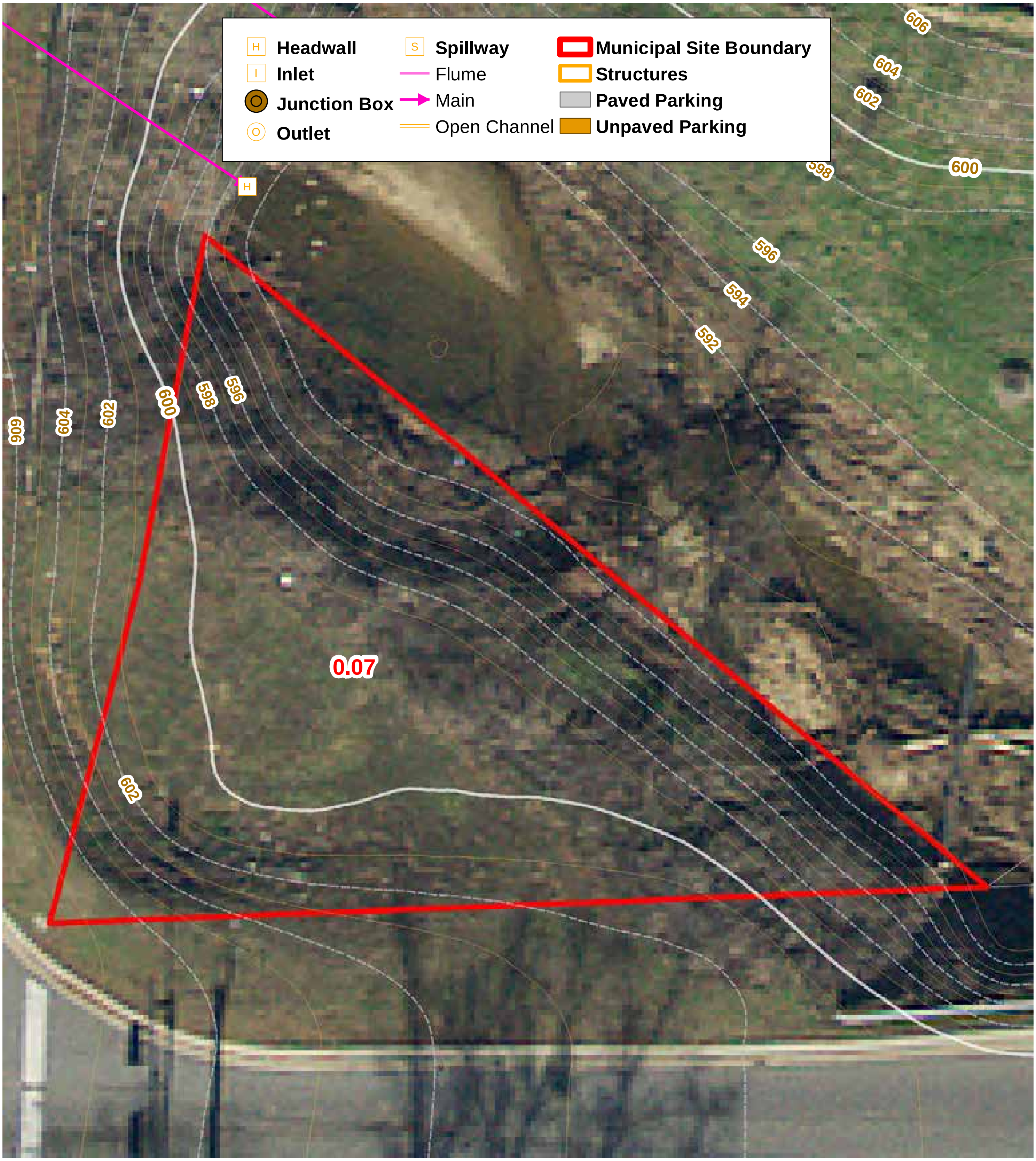
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 20 40 80

N

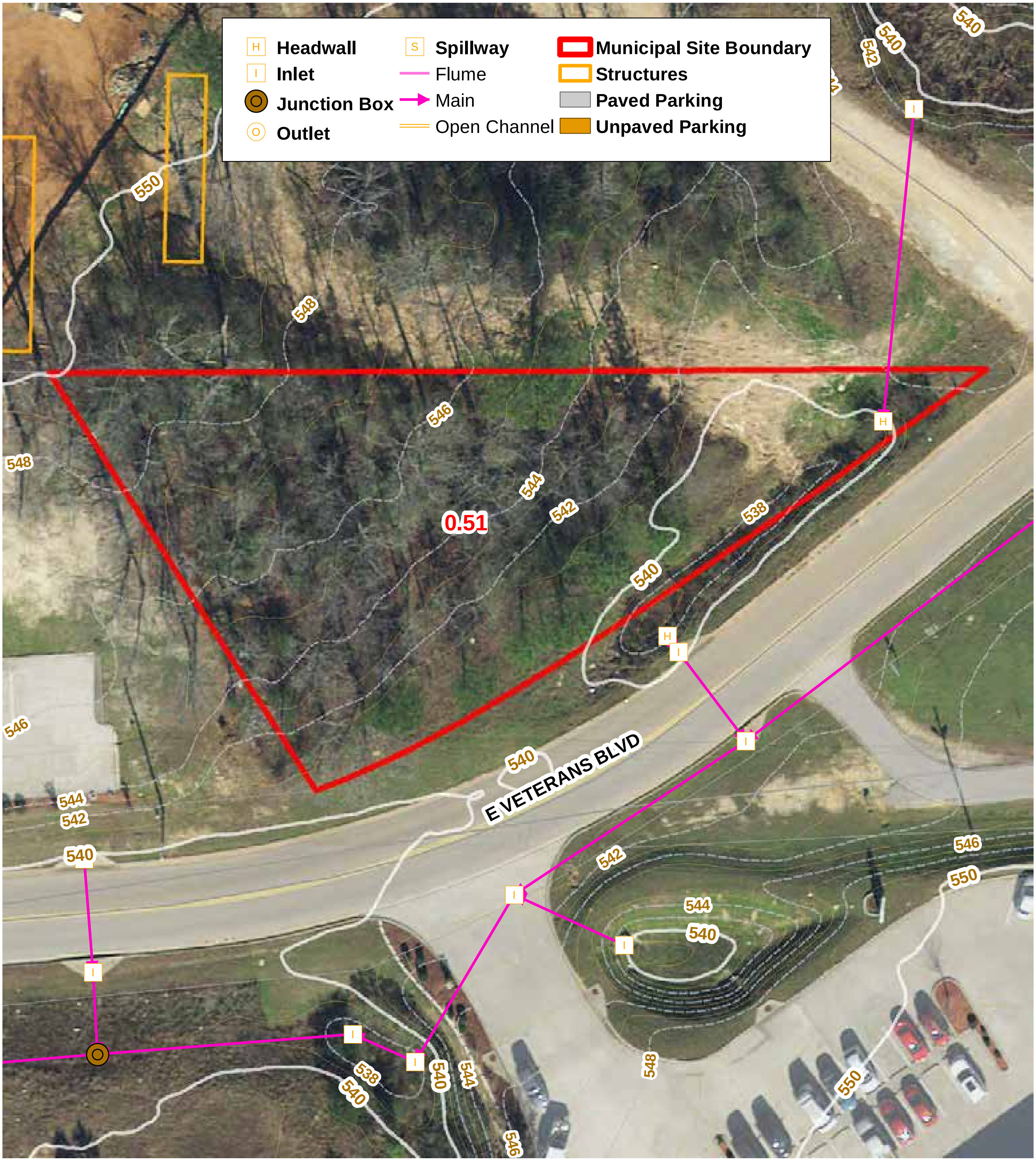
Dumas Drive Property



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

E Samford @ EUD Property



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 30 60 120

N

E Veterans Blvd Property

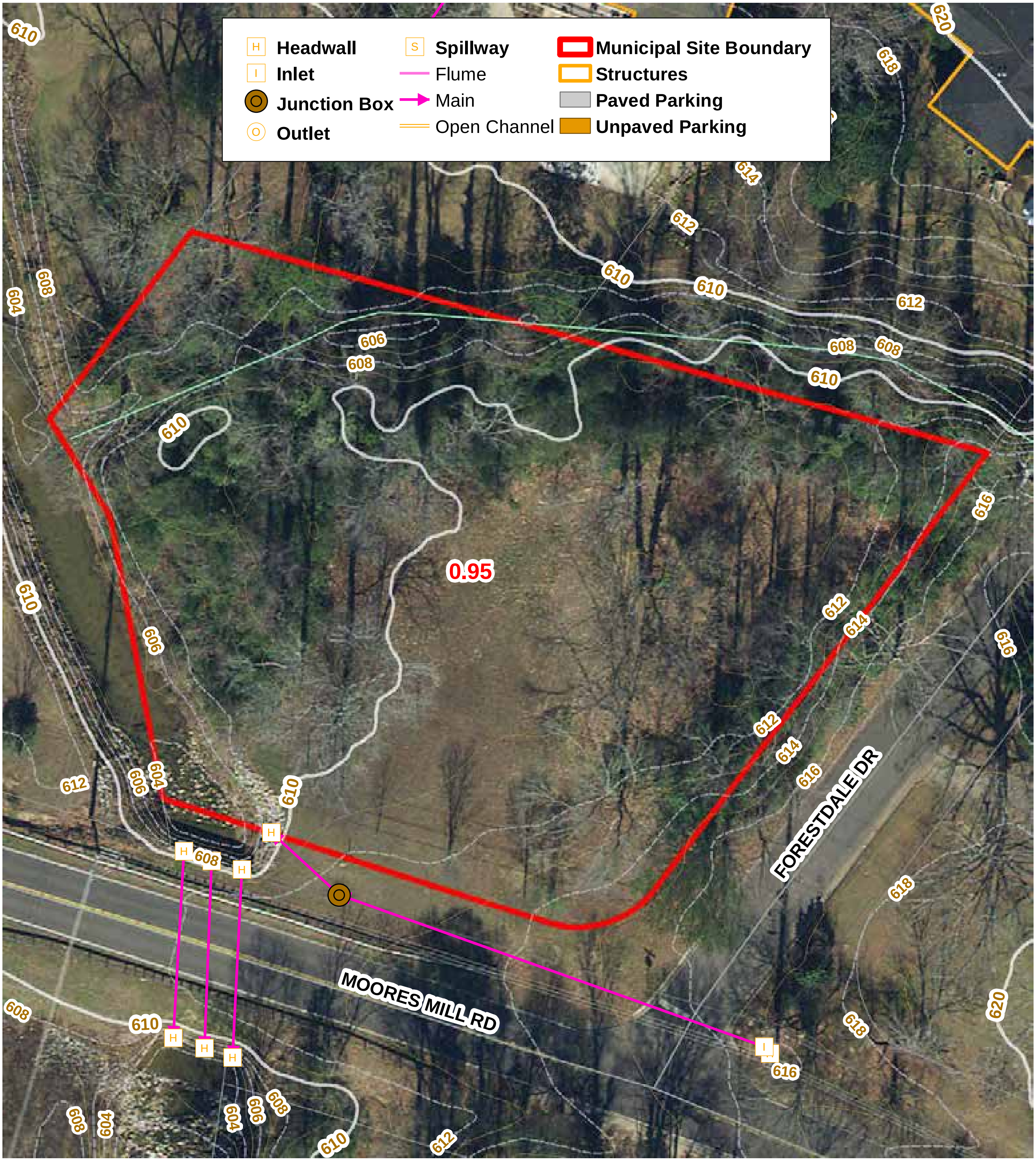
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 95 190 380

N

Felton Little Park



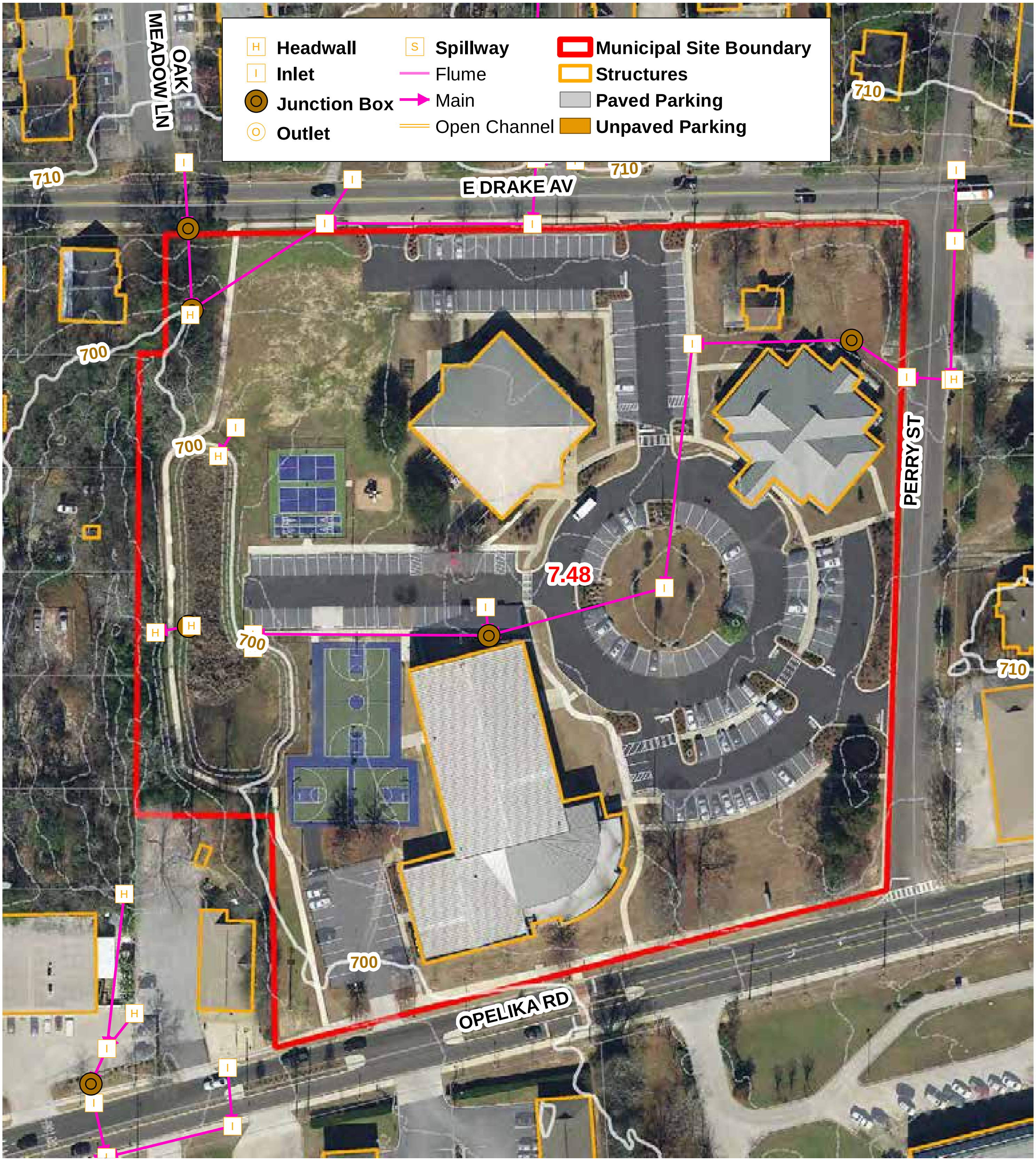
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 30 60 120

N

Forestdale @ Moores Mill Property



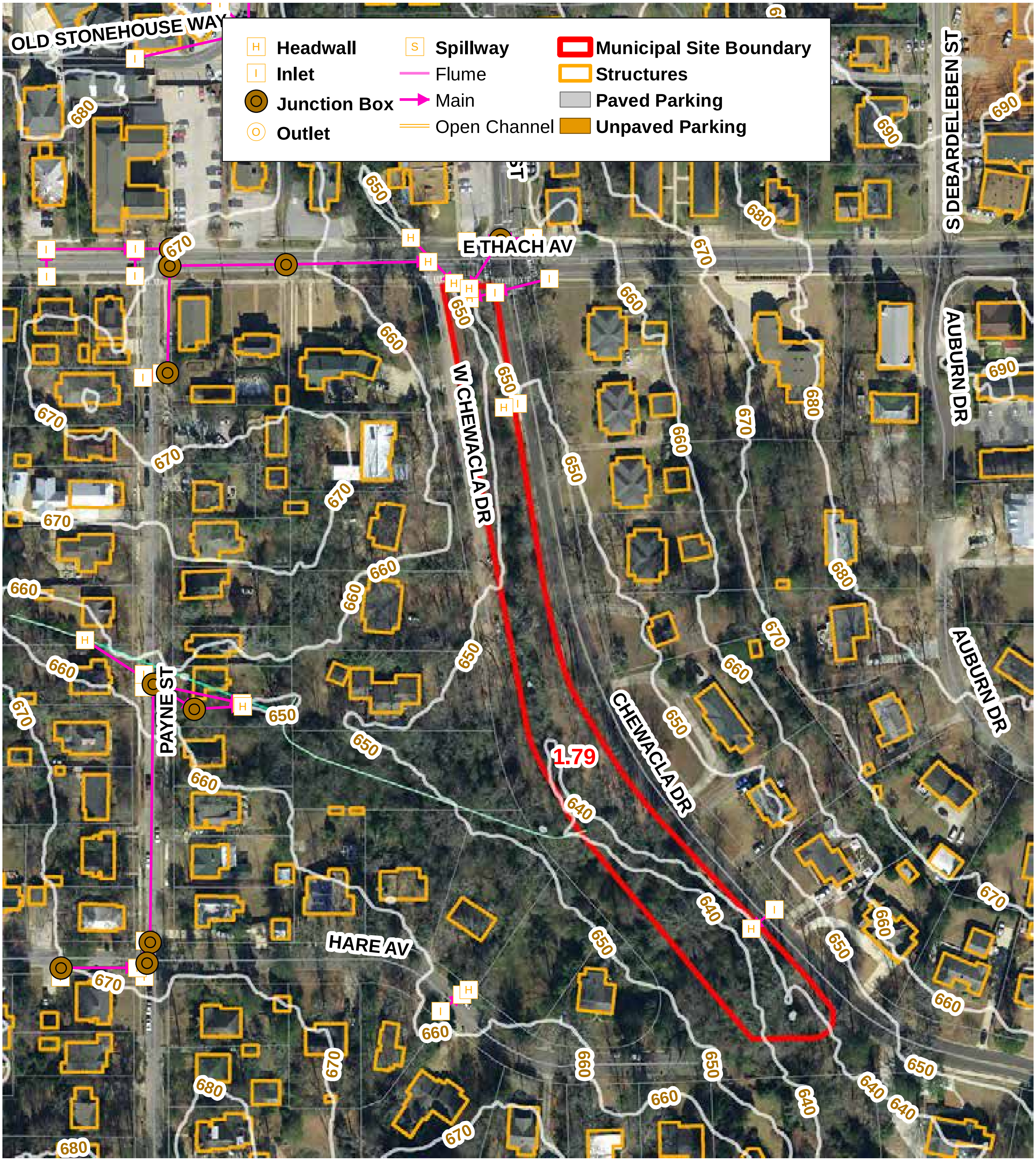
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 75 150 300

N

Frank Brown Rec Center



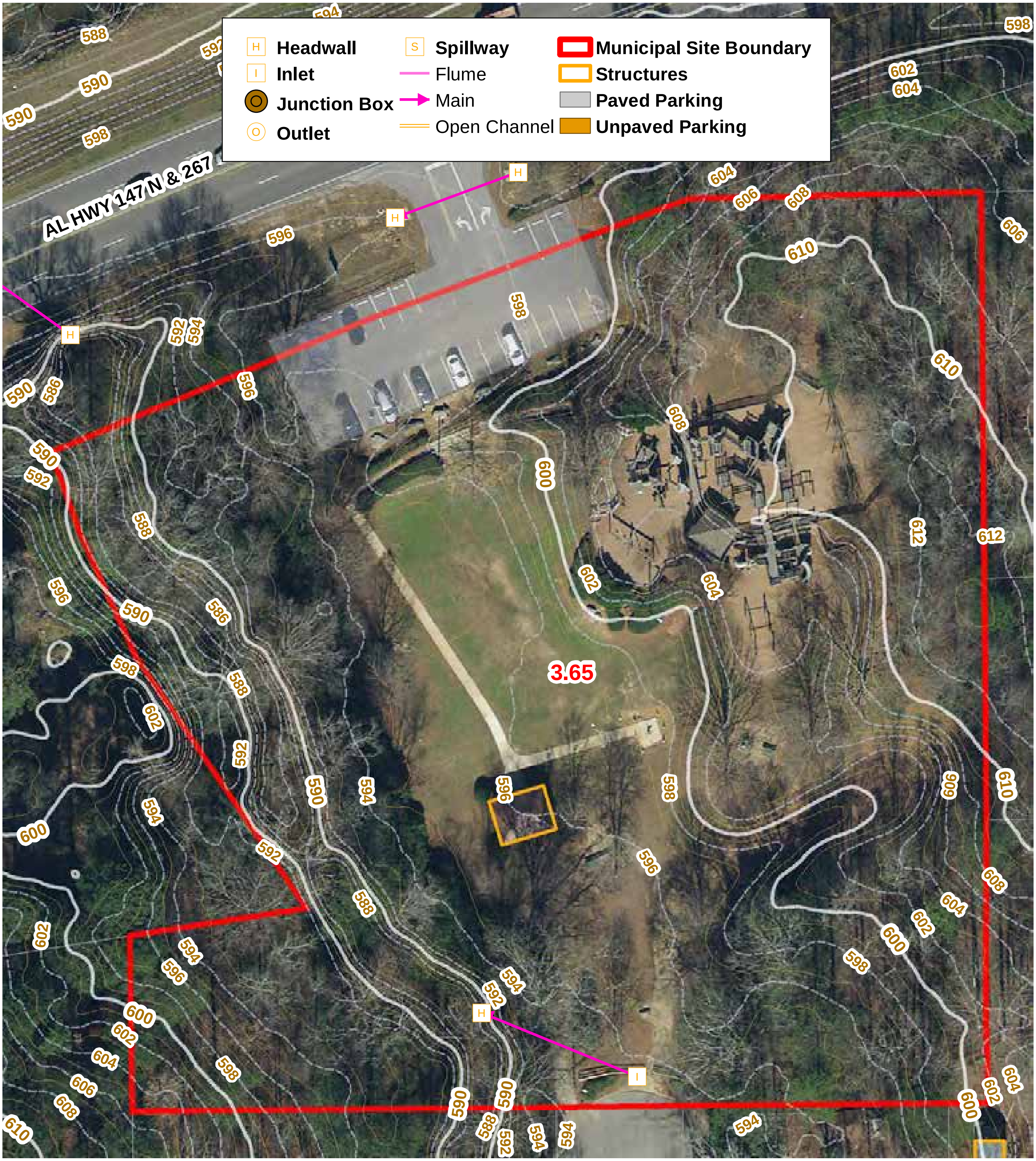
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 120 240 480

N

Graham McTeer Park



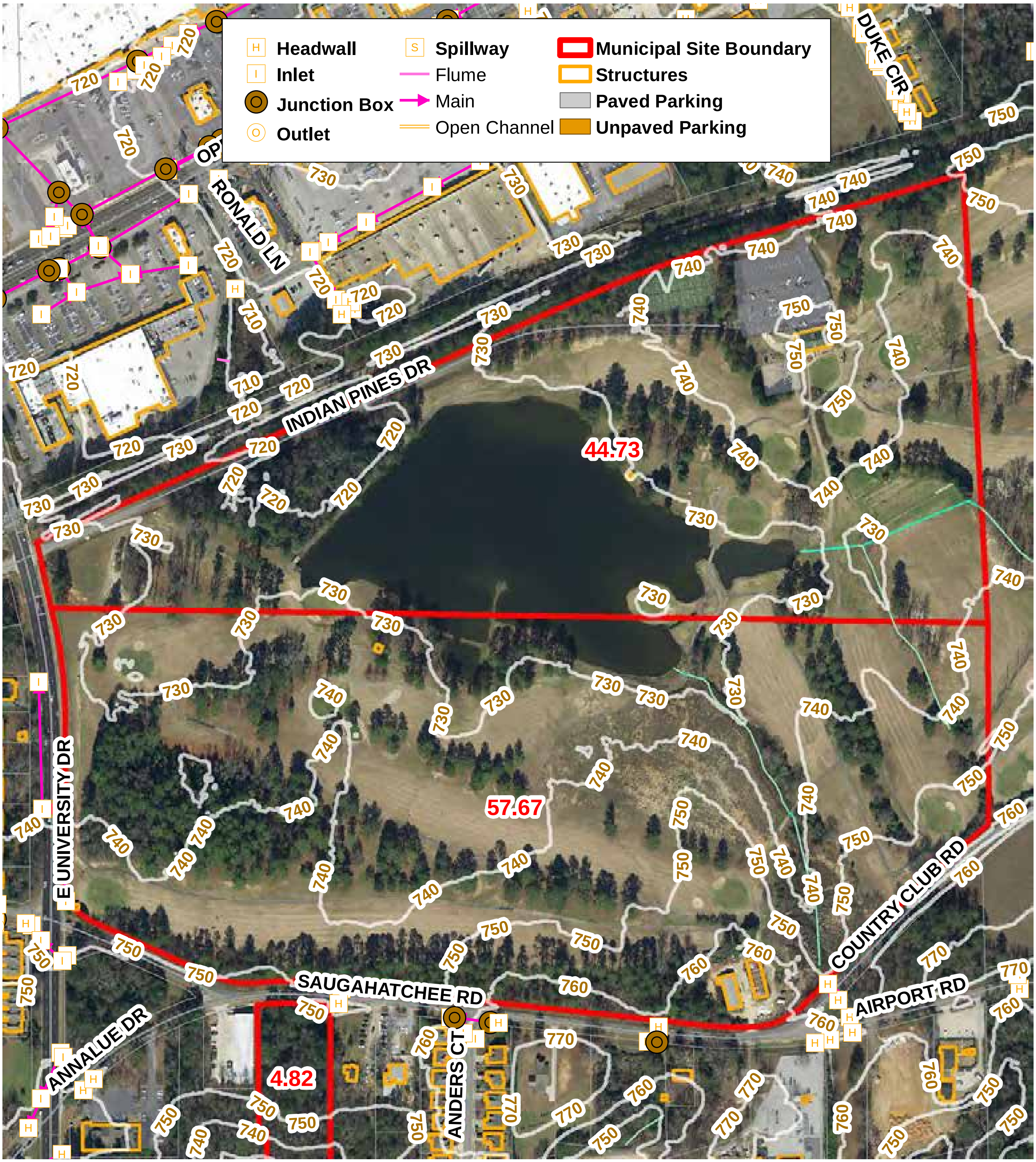
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 45 90 180

N

Hickory Dickory Park



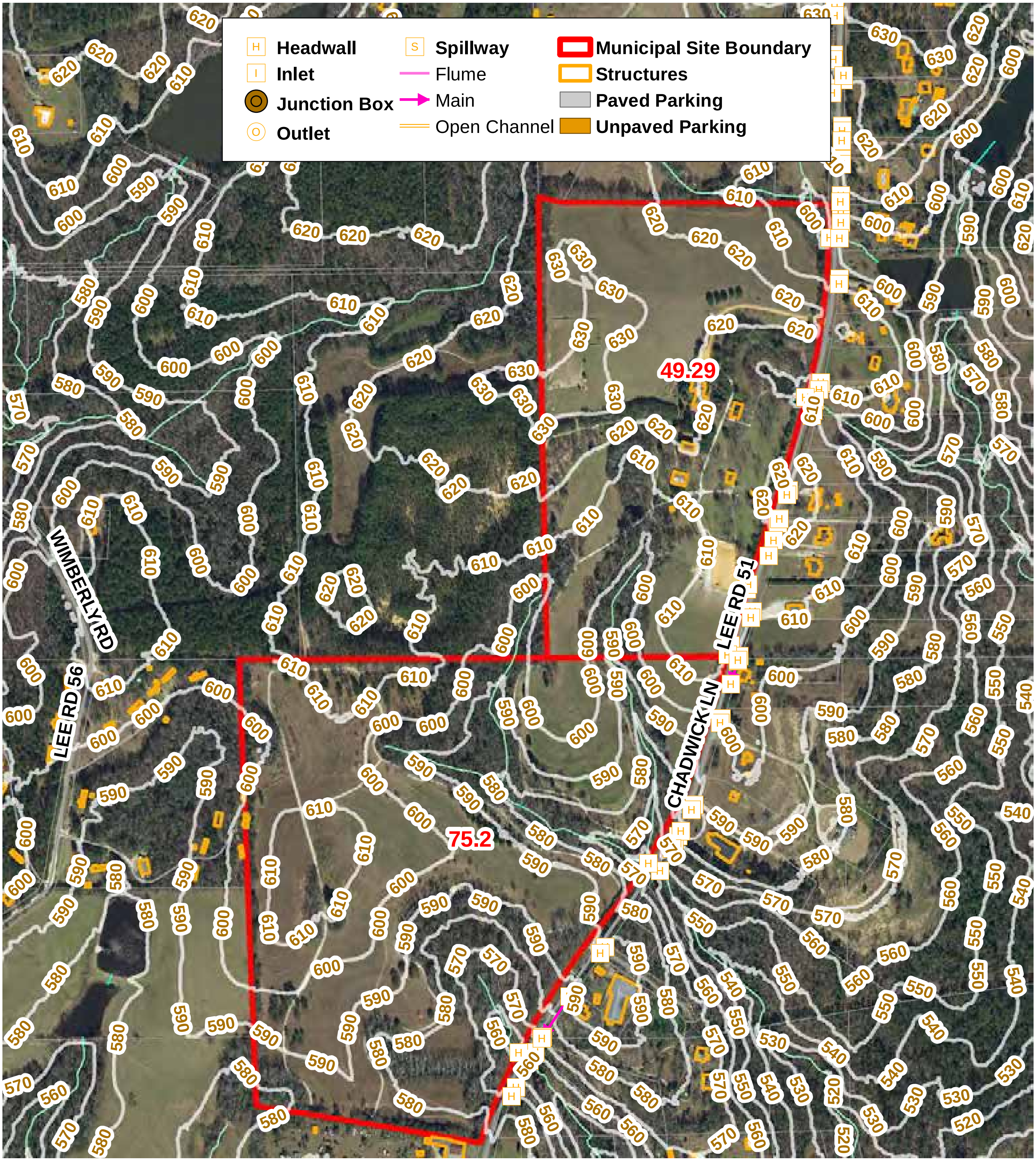
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 270 540 1,080

N

Indian Pines Golf Course



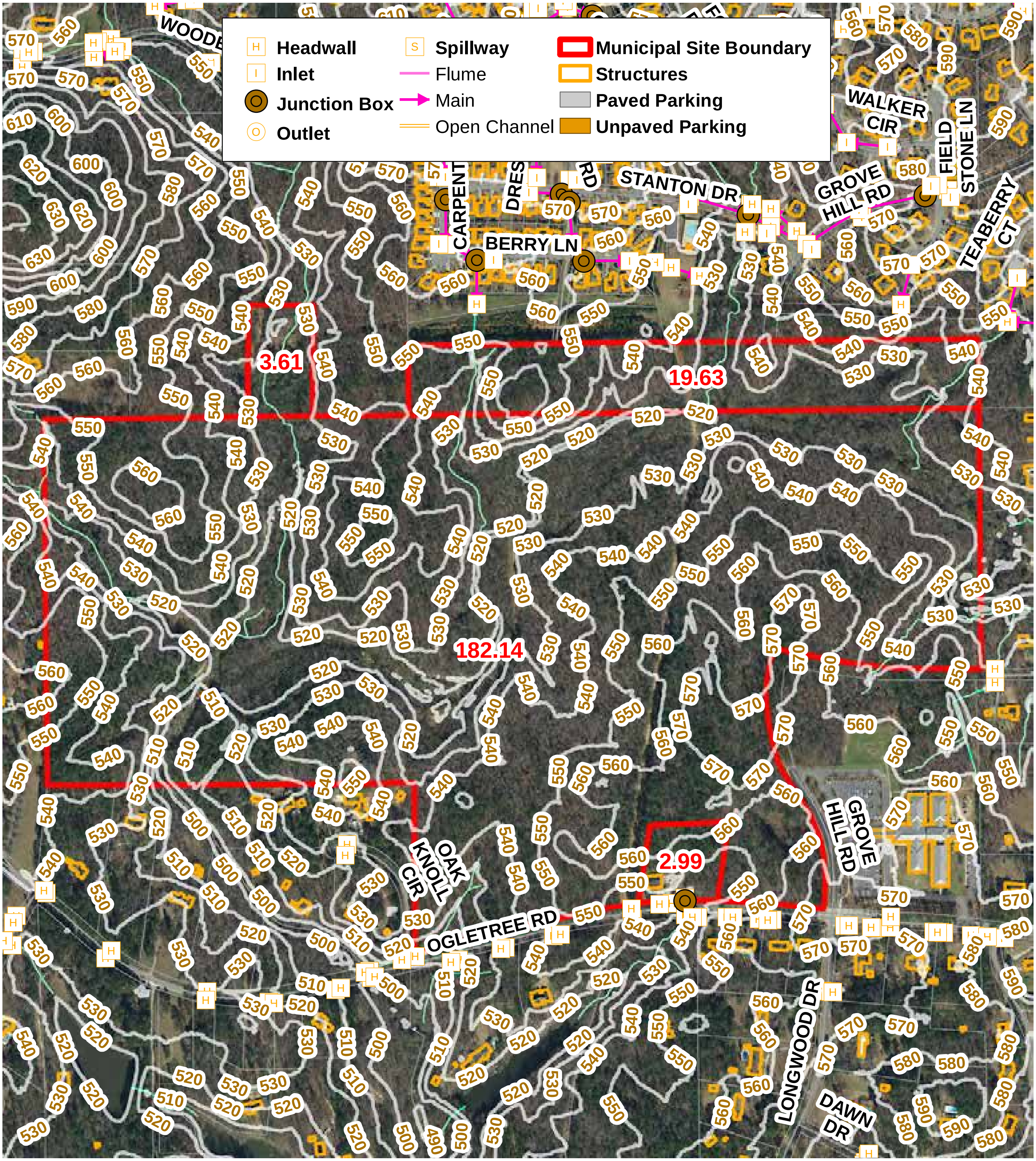
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 435 870 1,740 Feet

N

Keisel Park



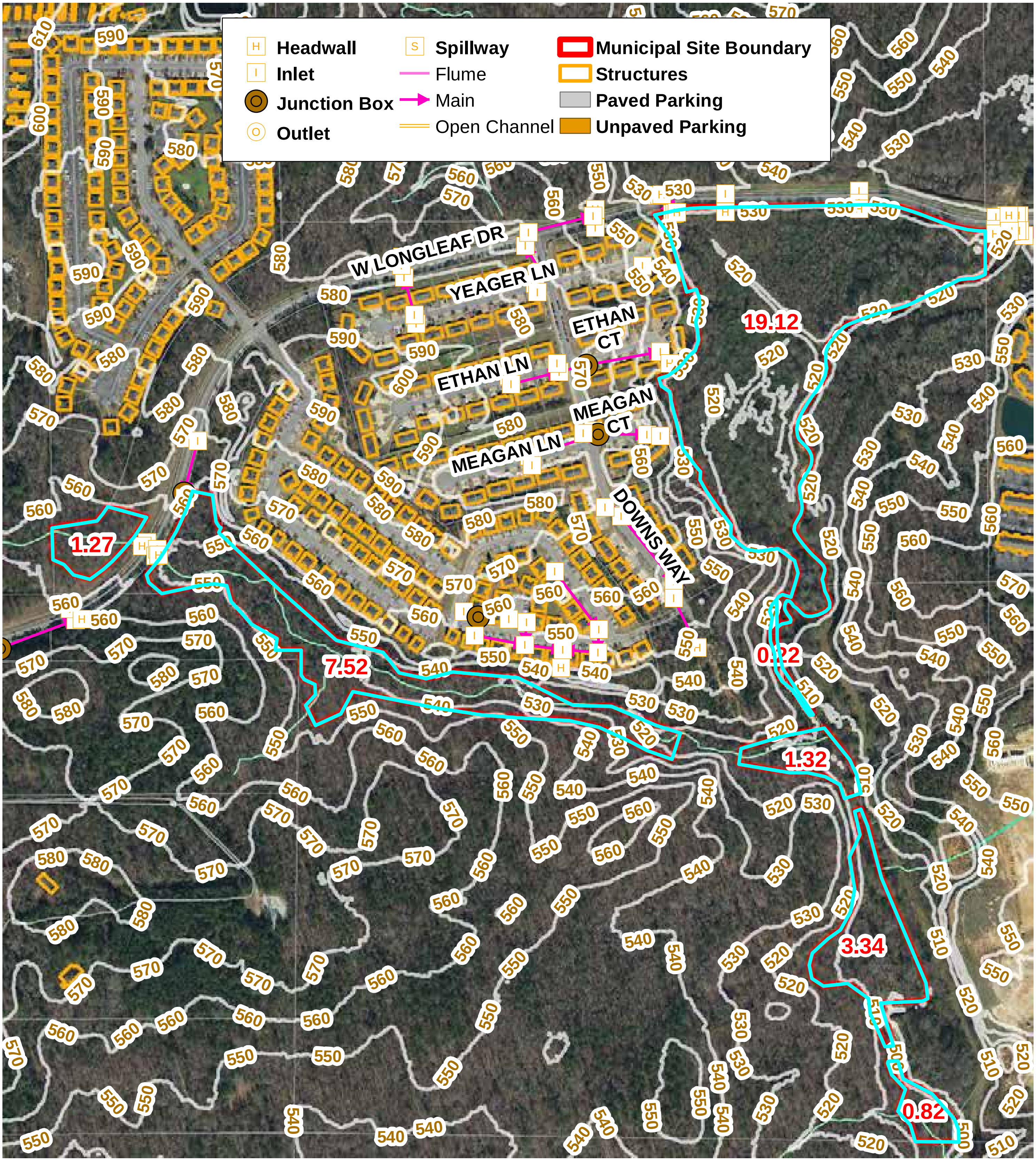
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 460 920 1,840

N

Lake Wilmore Properties



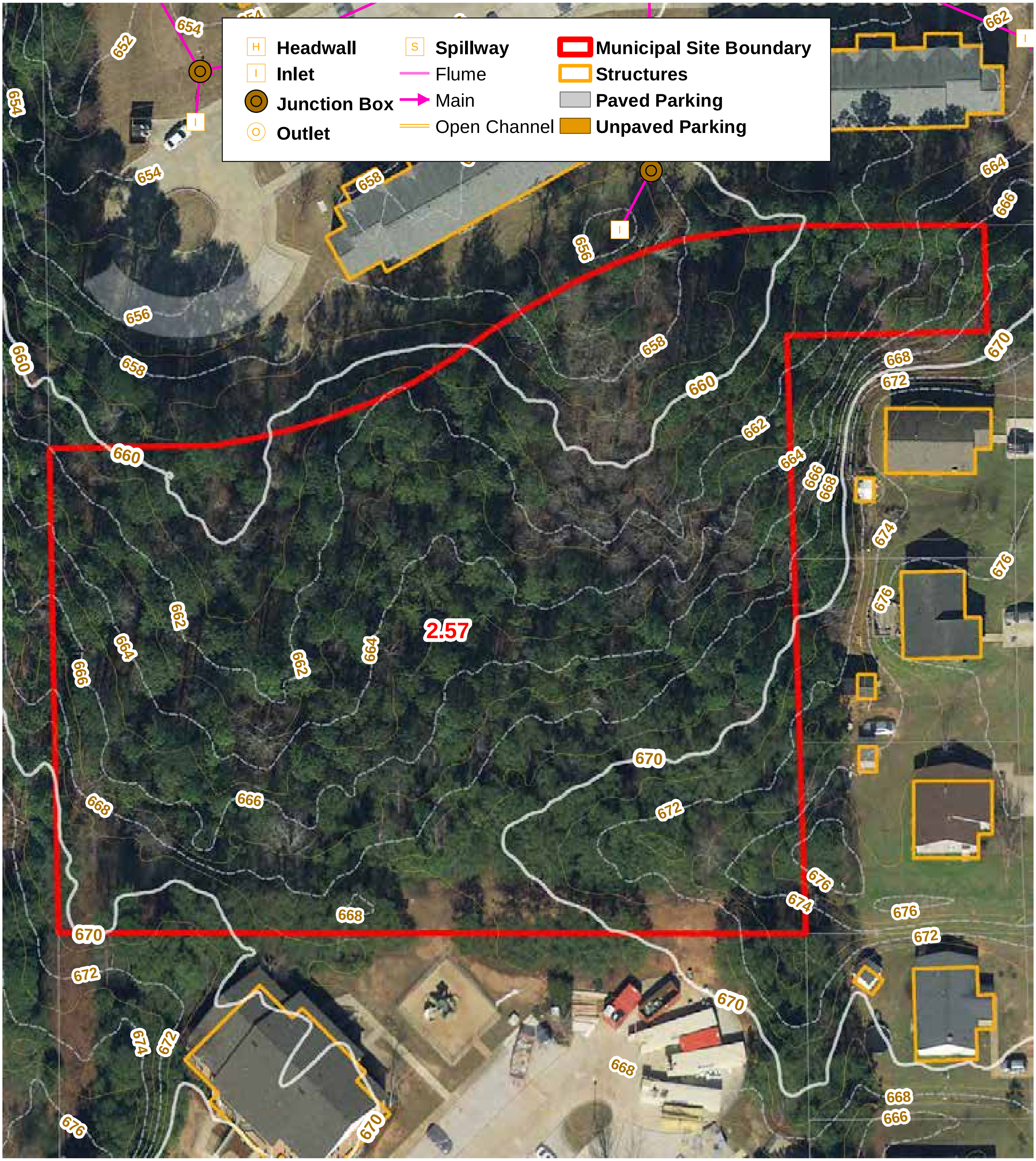
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 370 740 1,480 Feet

N

Longleaf Properties



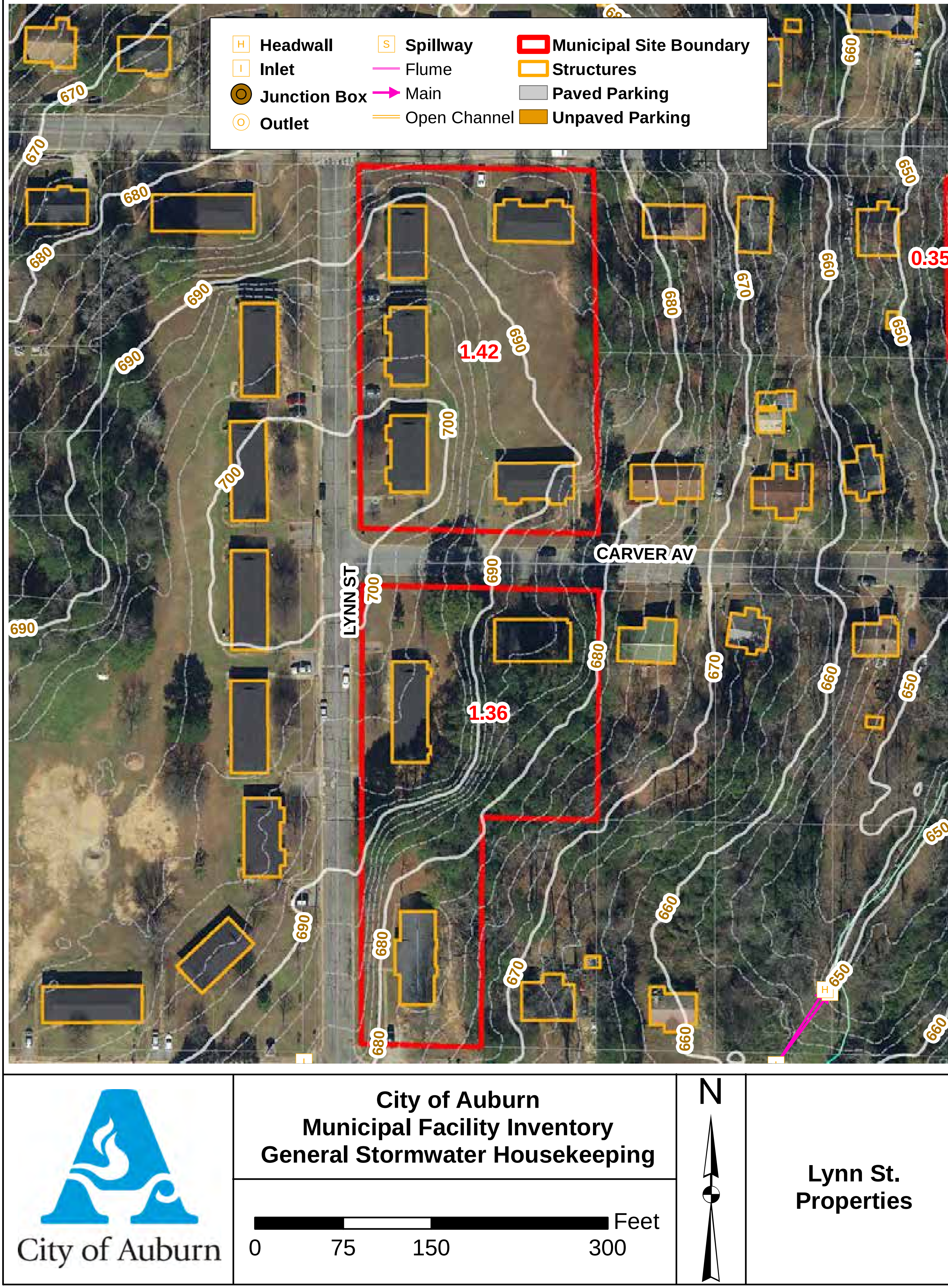
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 45 90 180

N

Lunsford Dr Property



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Lynn St. Properties

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 105 210 420

N

Martin Luther King Park

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 120 240 480

N

Memorial Cemetery

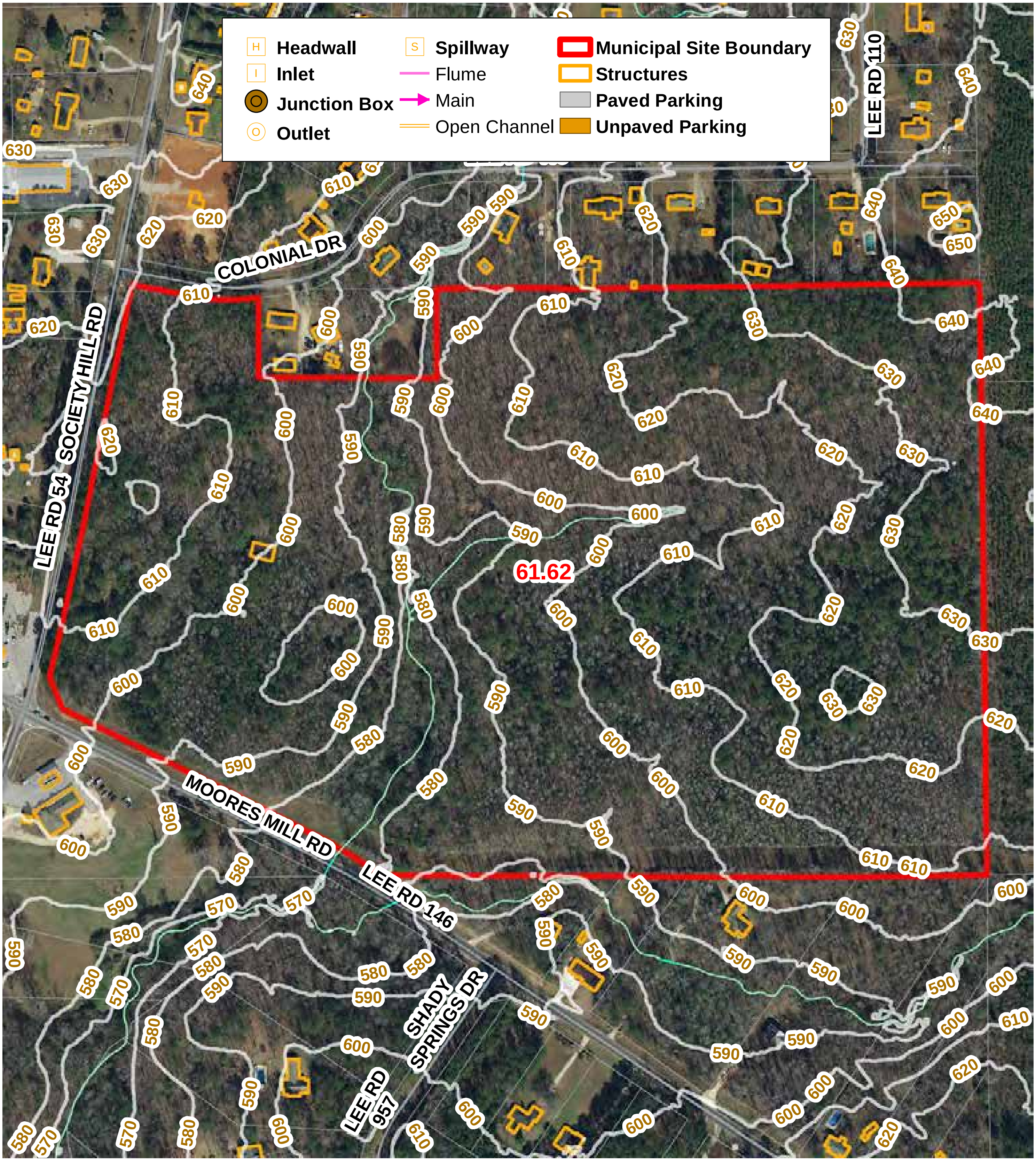
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 62.5 125 250 Feet

N

Miracle Road Property



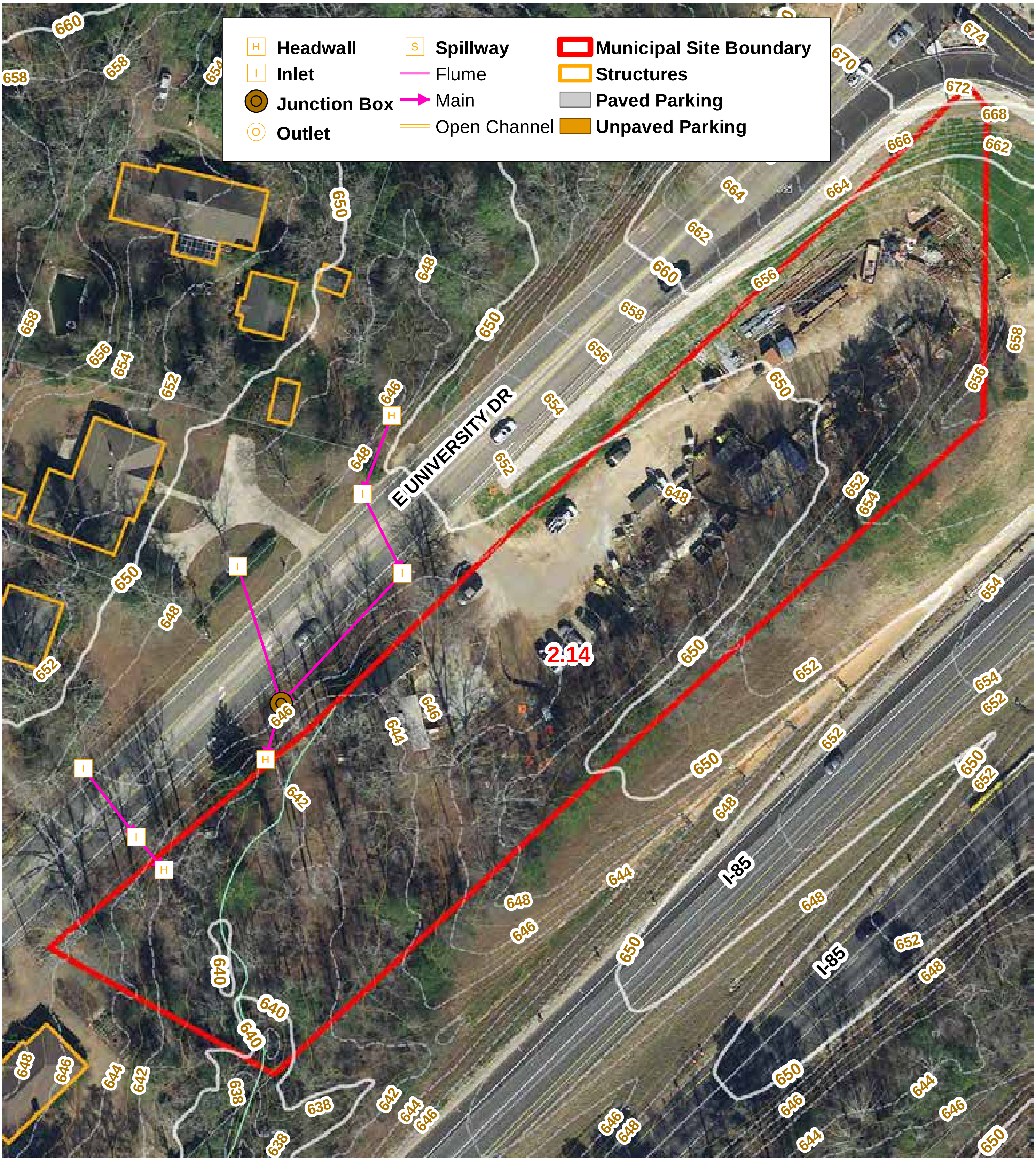
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 230 460 920 Feet

N

Moores Mill @ Society Hill Property



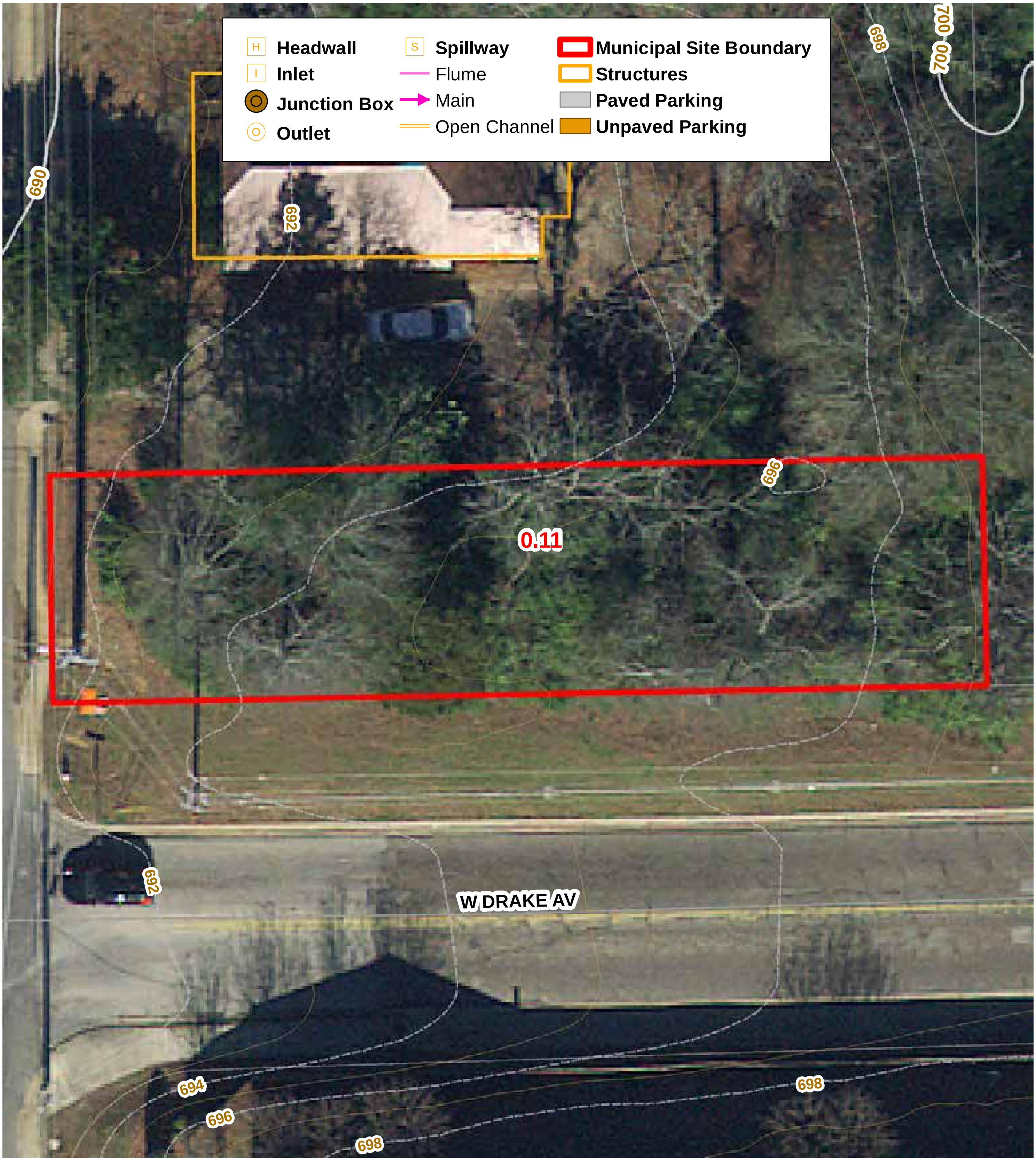
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 55 110 220 Feet

N

Moores Mill Park



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 15 30 60 Feet

N

N Donahue and Drake Property

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 35 70 140 Feet

N

N Ross @ Opelika Rd Property

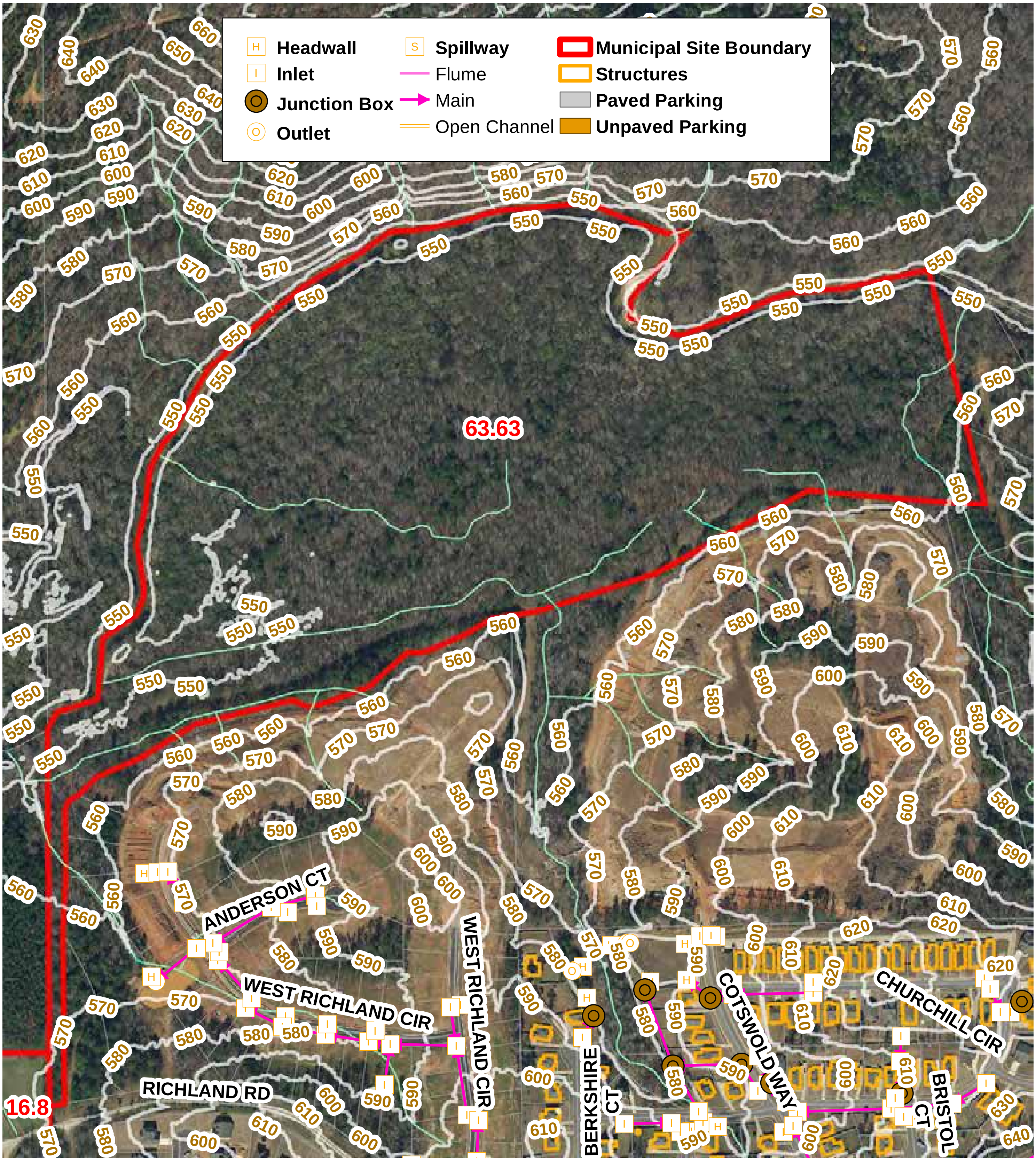
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 60 120 240

N

Pine Hill Cemetery



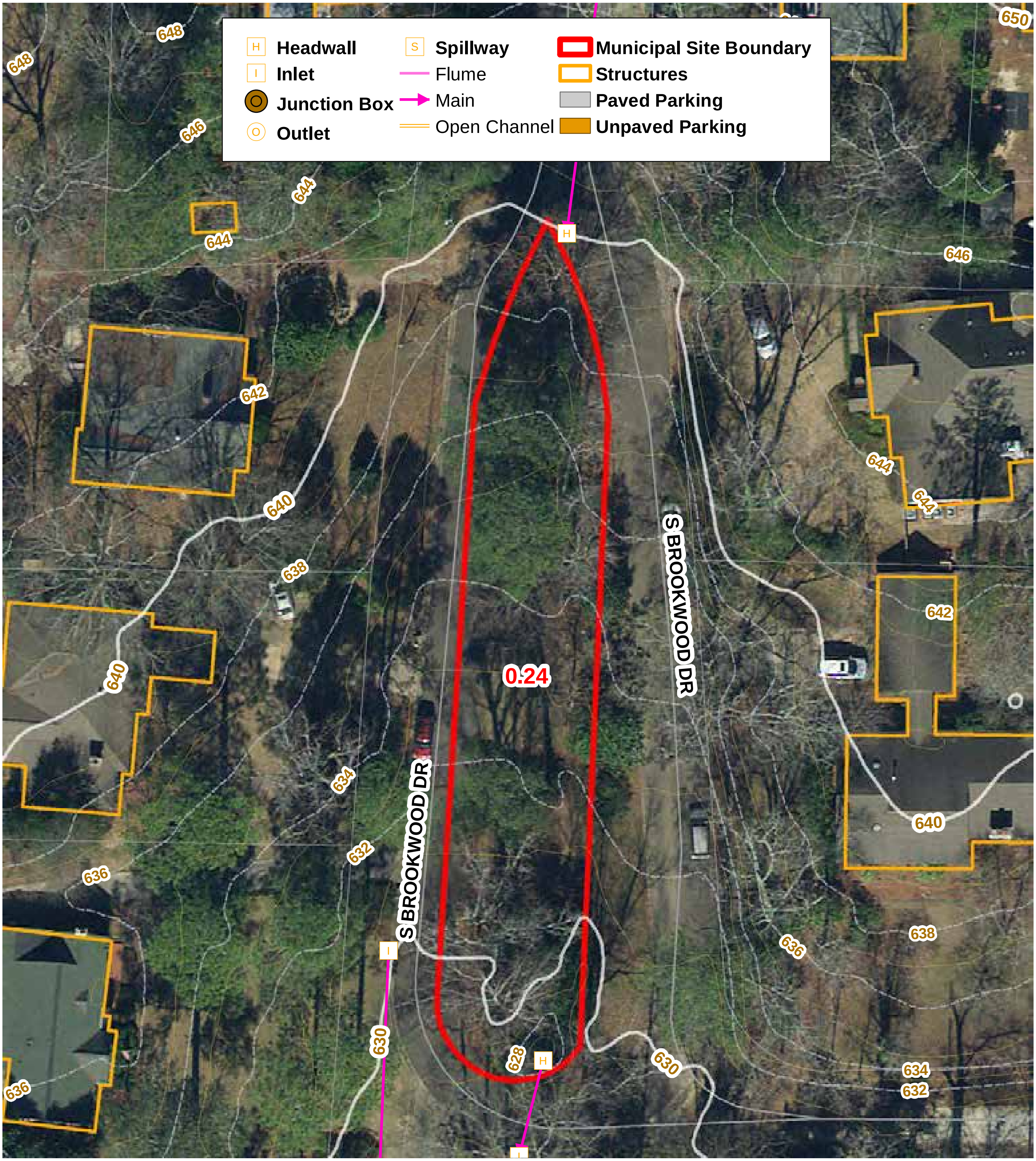
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 310 620 1,240 Feet

N

Richland Road (G+B) Property



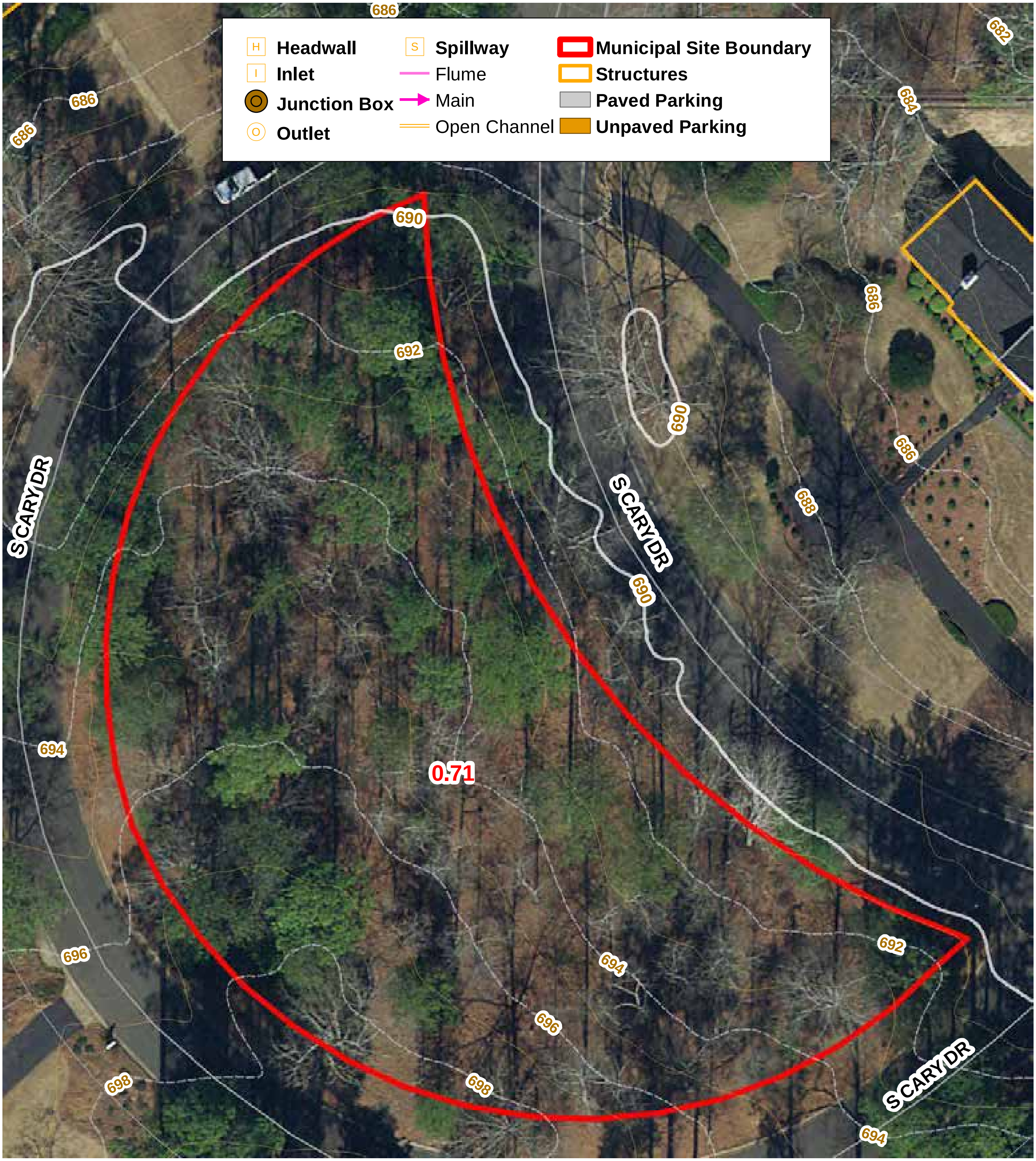
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 30 60 120 Feet

N

S Brookwood Dr Property



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 25 50 100 Feet

N

S Cary Drive Property

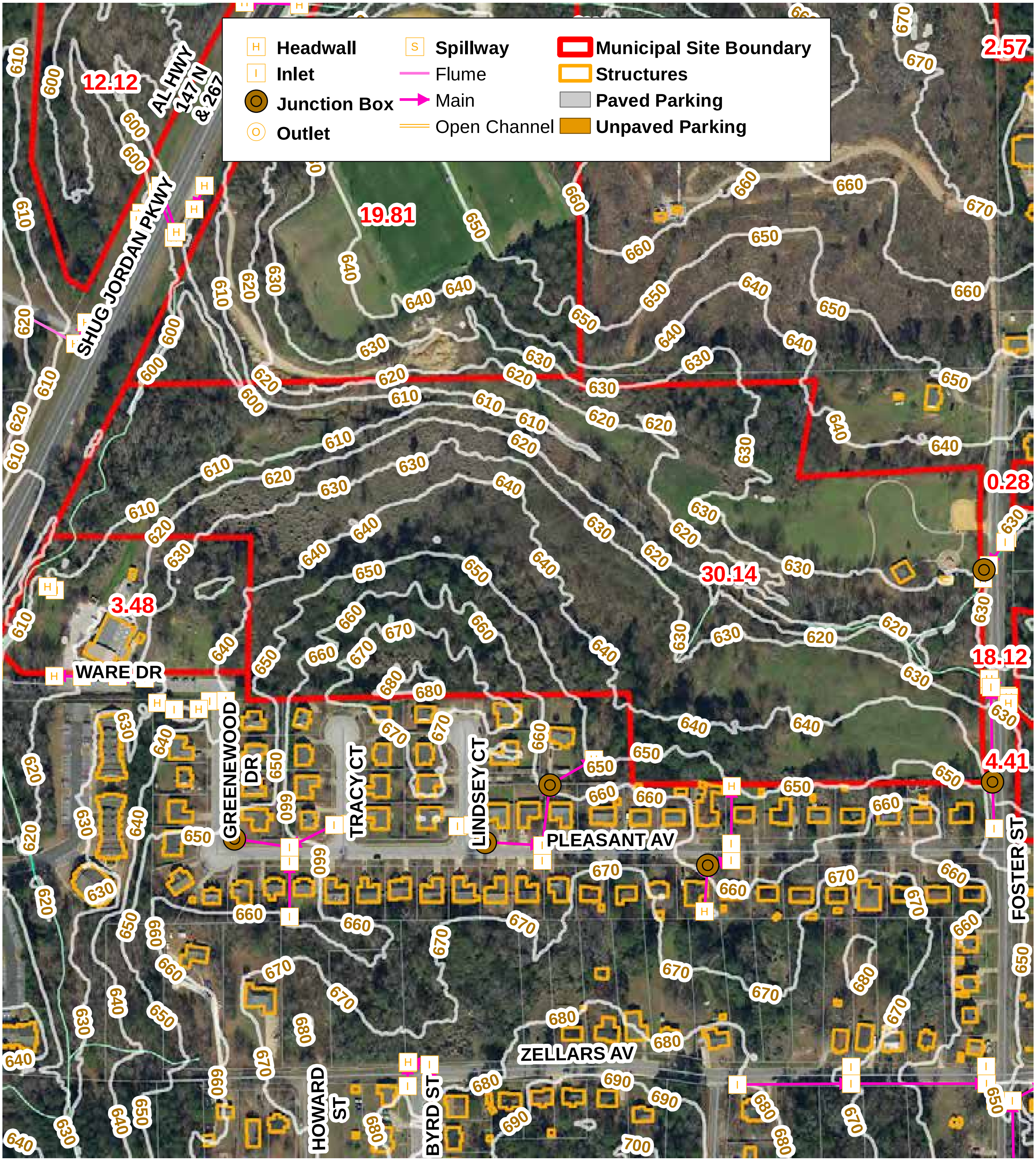
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 155 310 620 Feet

N

S Donahue @ EUD Property



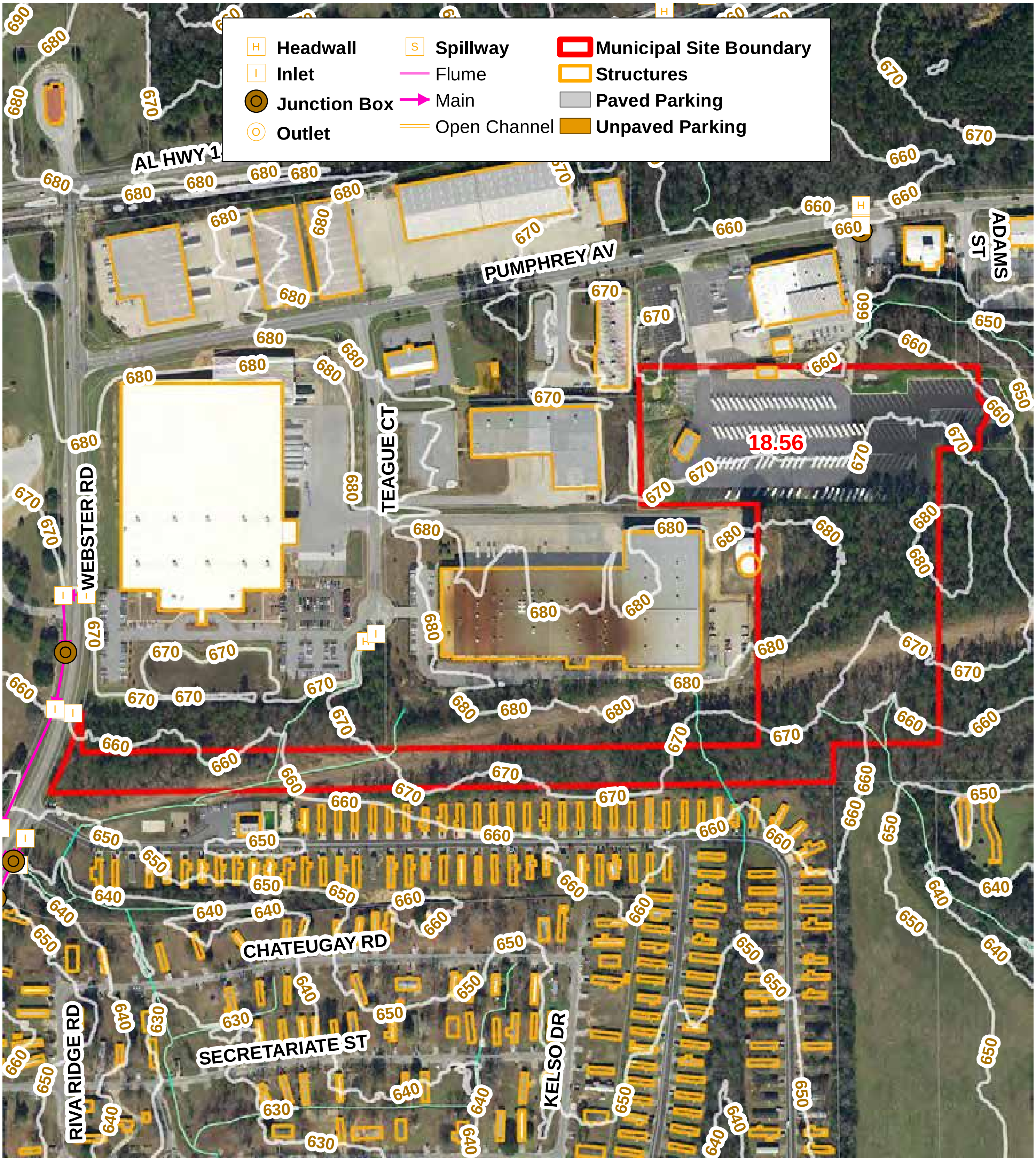
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 220 440 880 Feet

N

Sam Harris Park



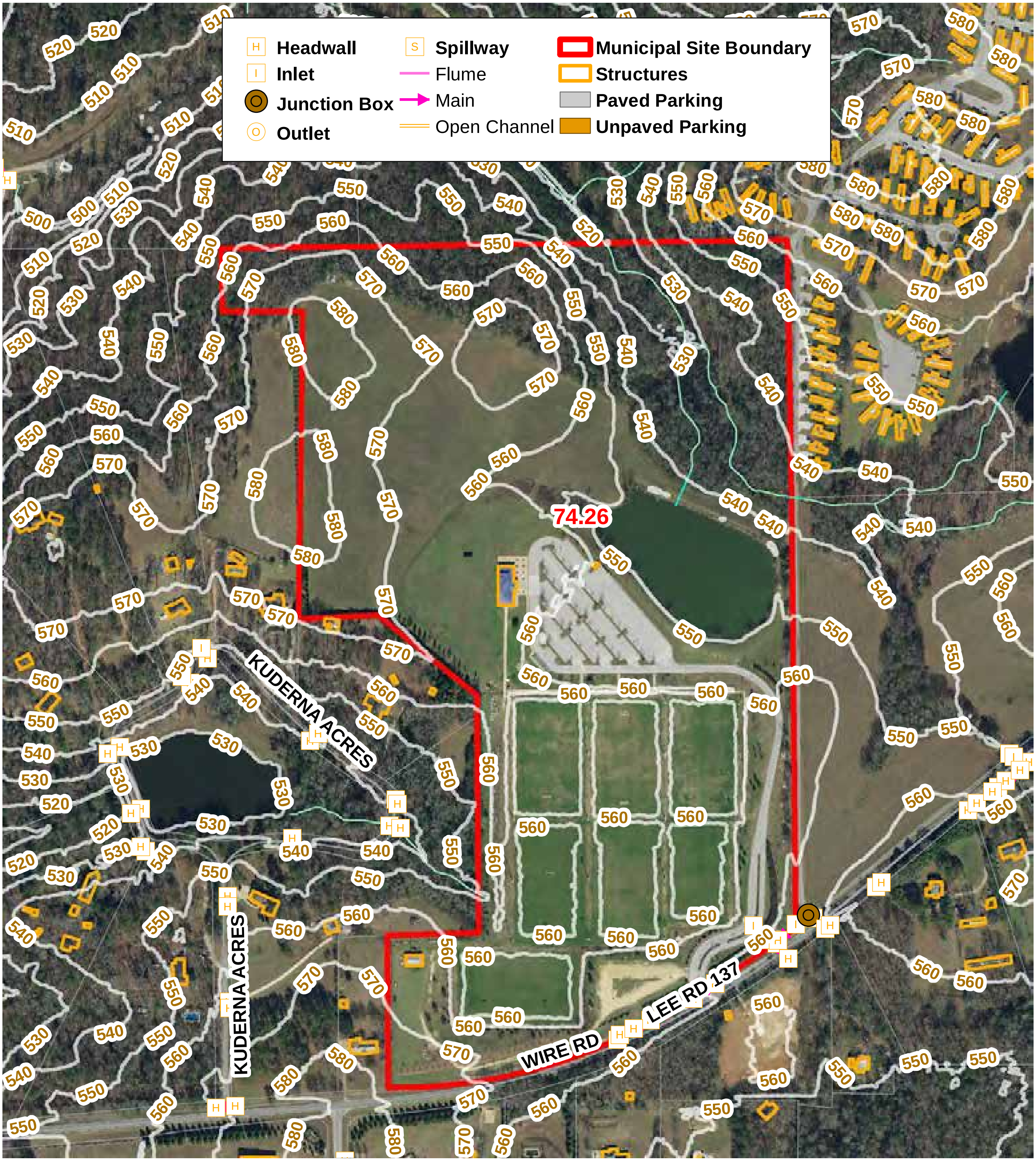
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 260 520 1,040 Feet

N

School Bus Depot



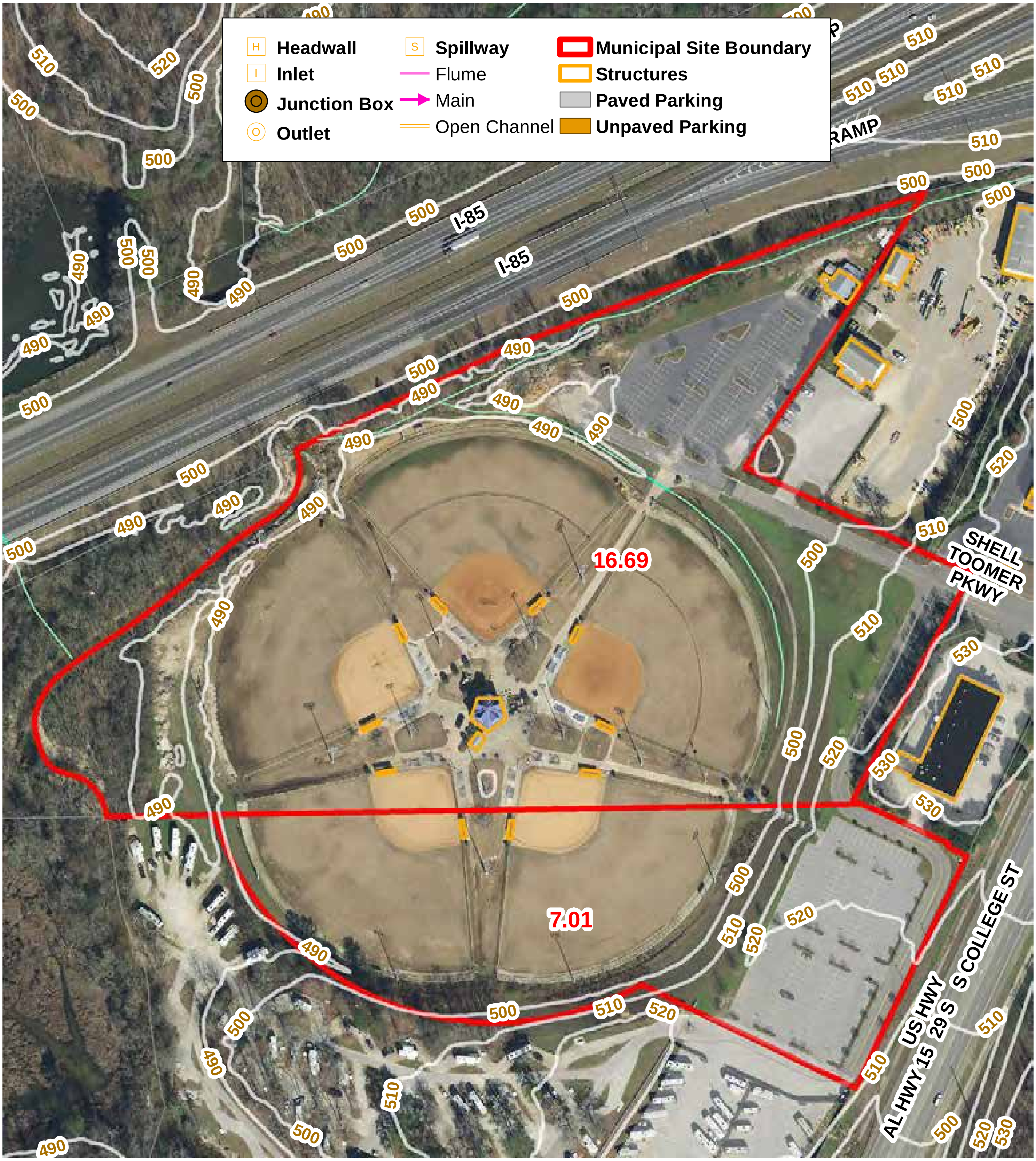
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 310 620 1,240

N

Soccer Complex



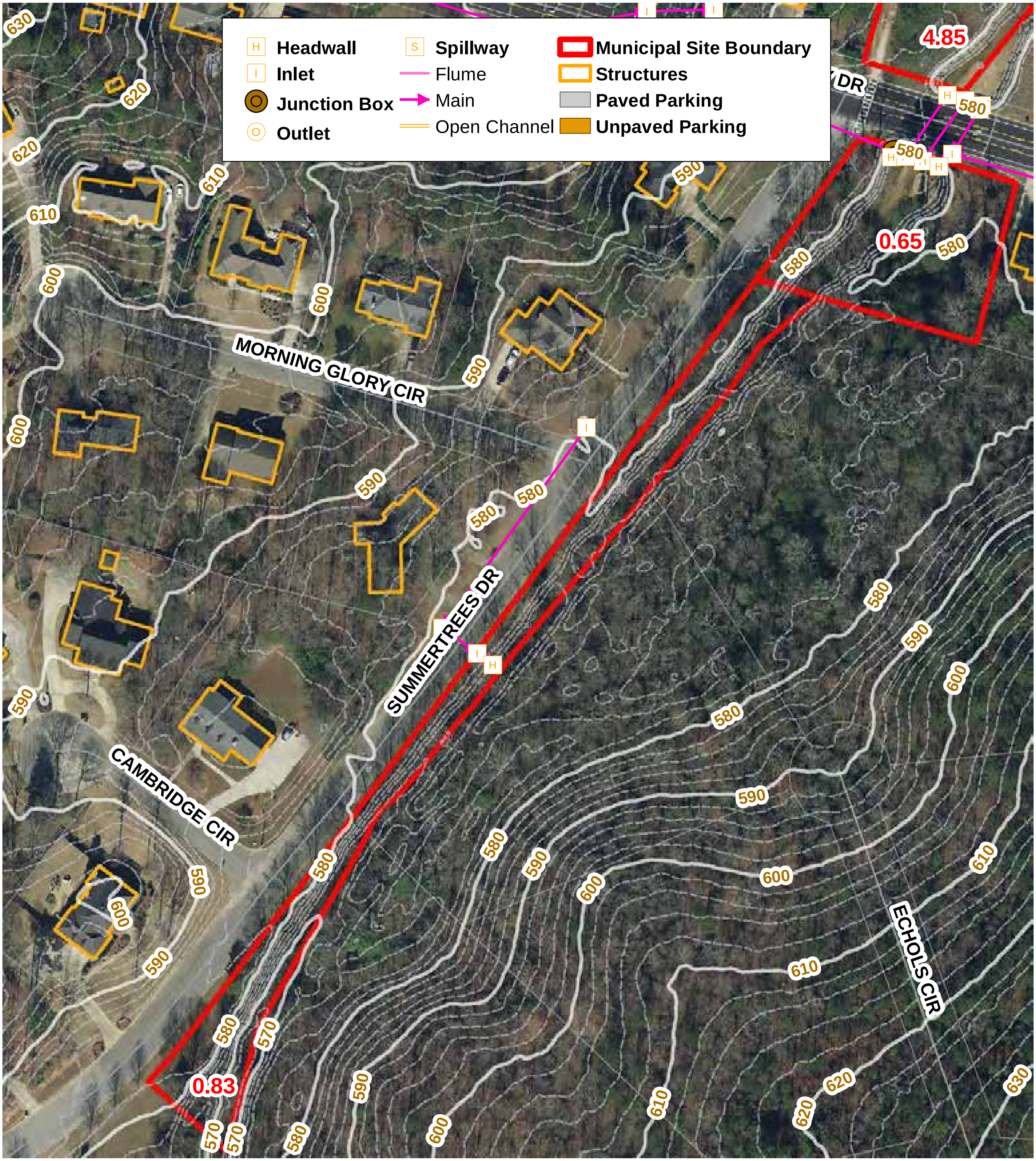
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 145 290 580 Feet

N

Softball Complex



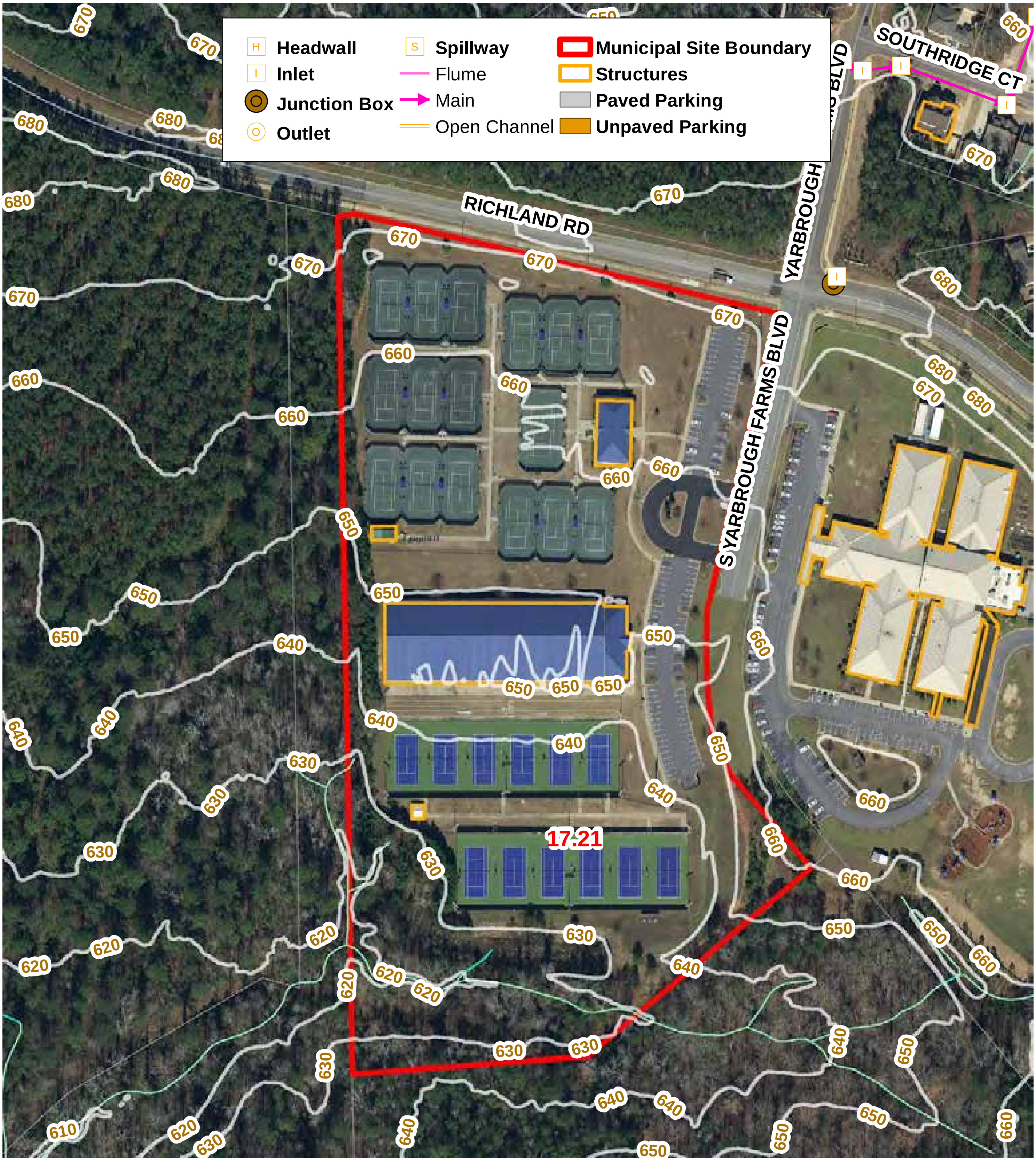
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 90 180 360

N

Summertrees Properties



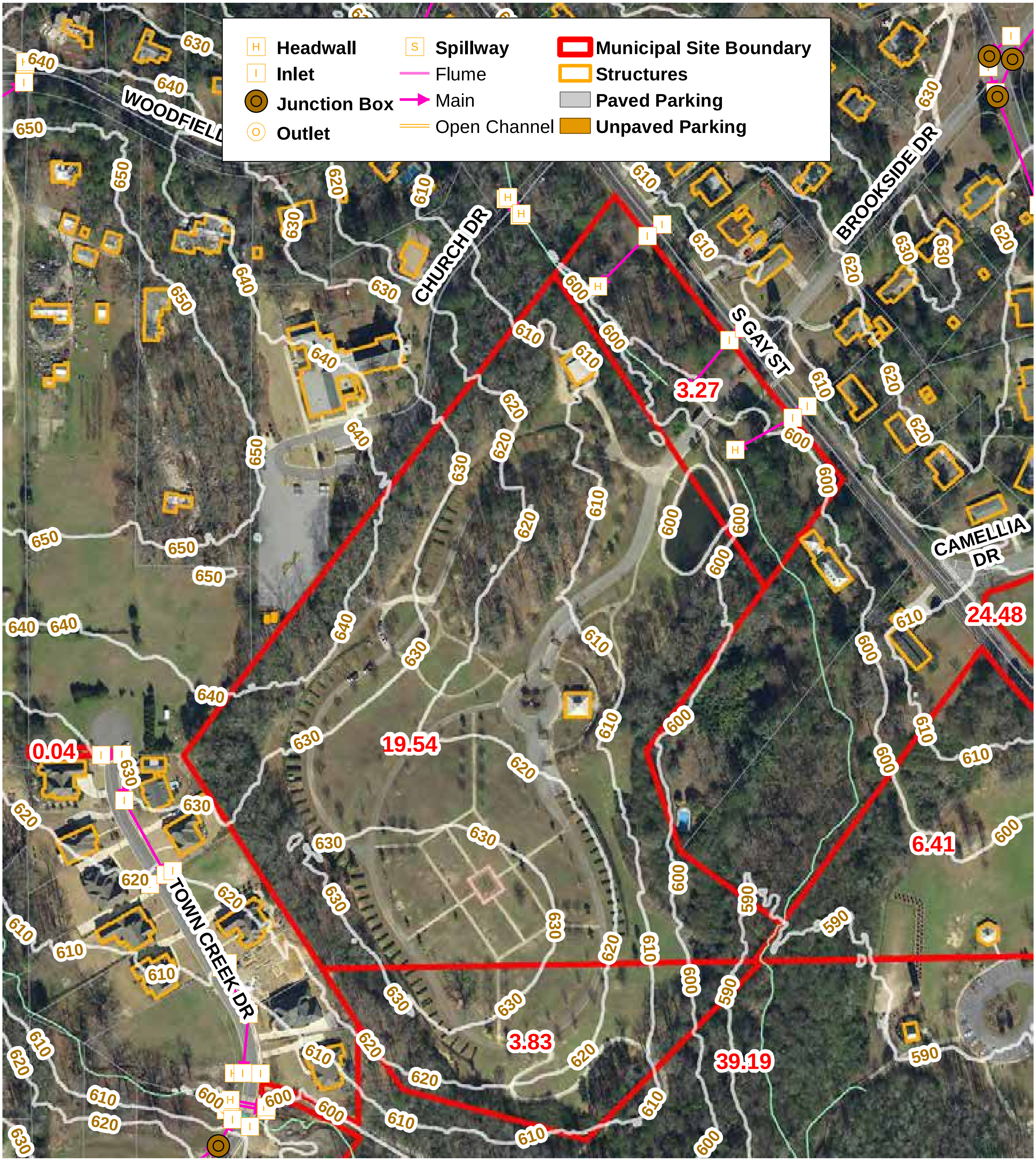
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 155 310 620

N

Tennis Center



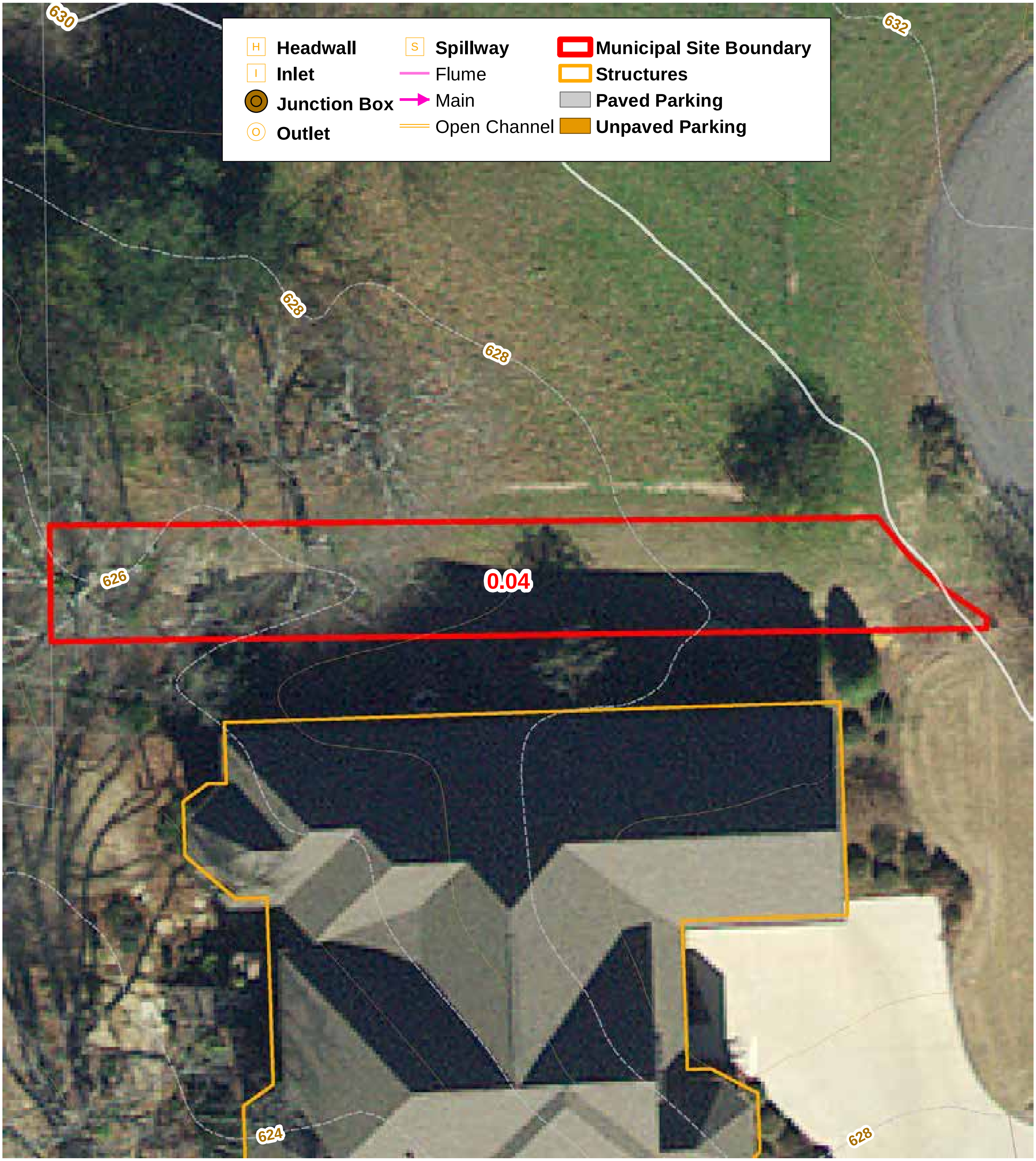
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 185 370 740 Feet

N

Town Creek Cemetery



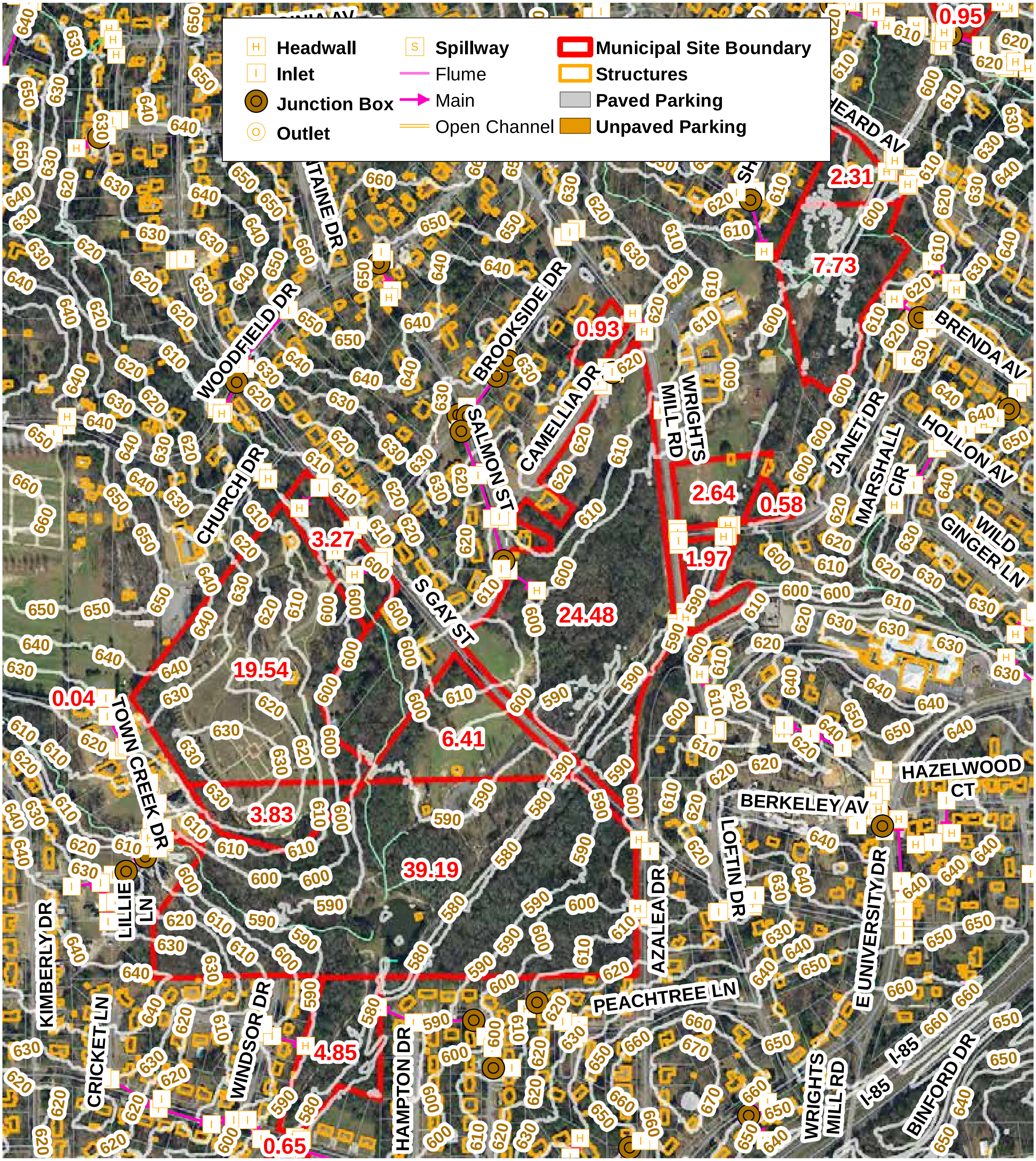
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 12.5 25 50

N

Town Creek Drive Trailhead



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 460 920 1,840

N

Town Creek Park and Greenway

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 12.5 25 50

N

Veterans Memorial Property

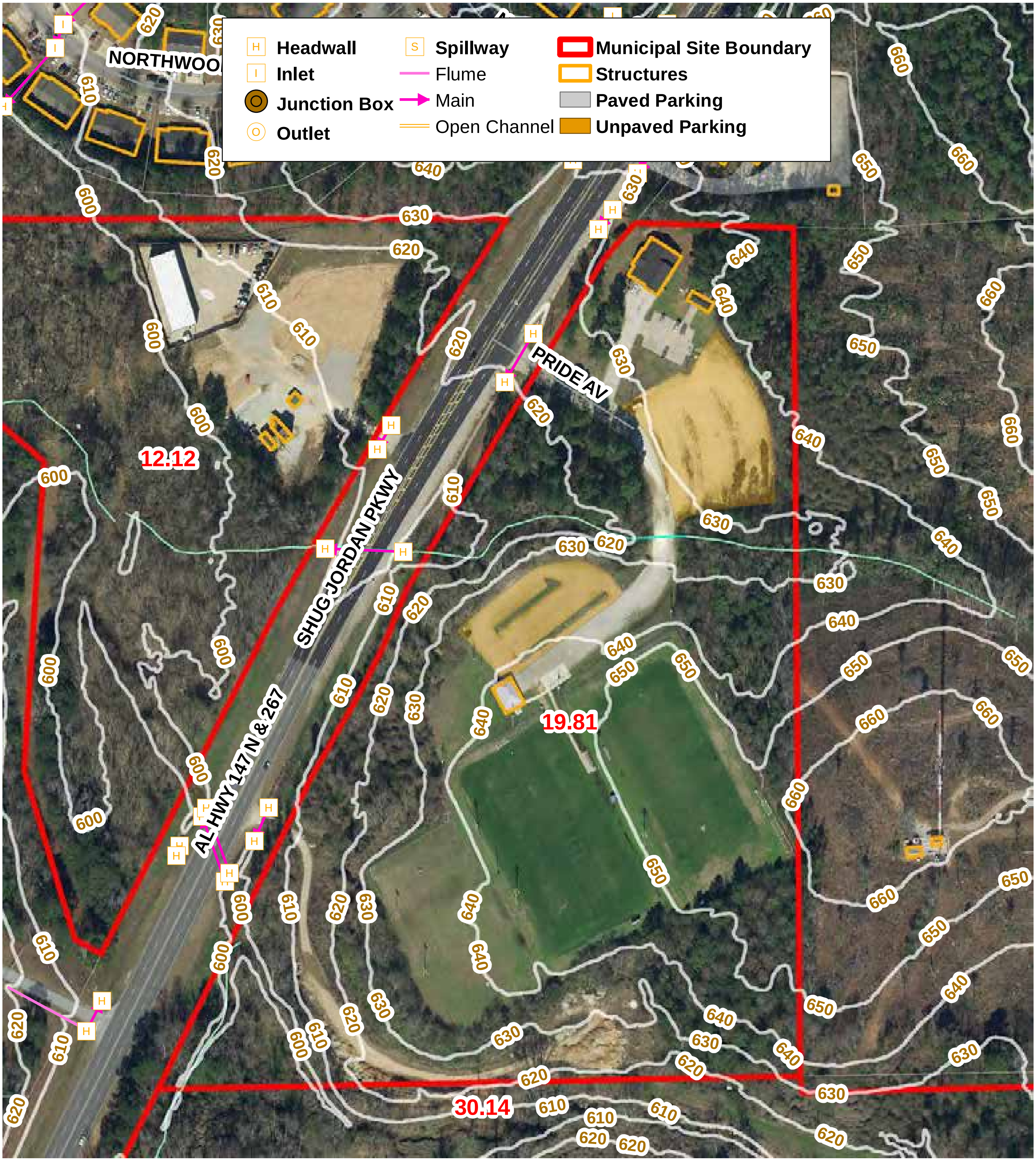
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 185 370 740

N

Westview Properties



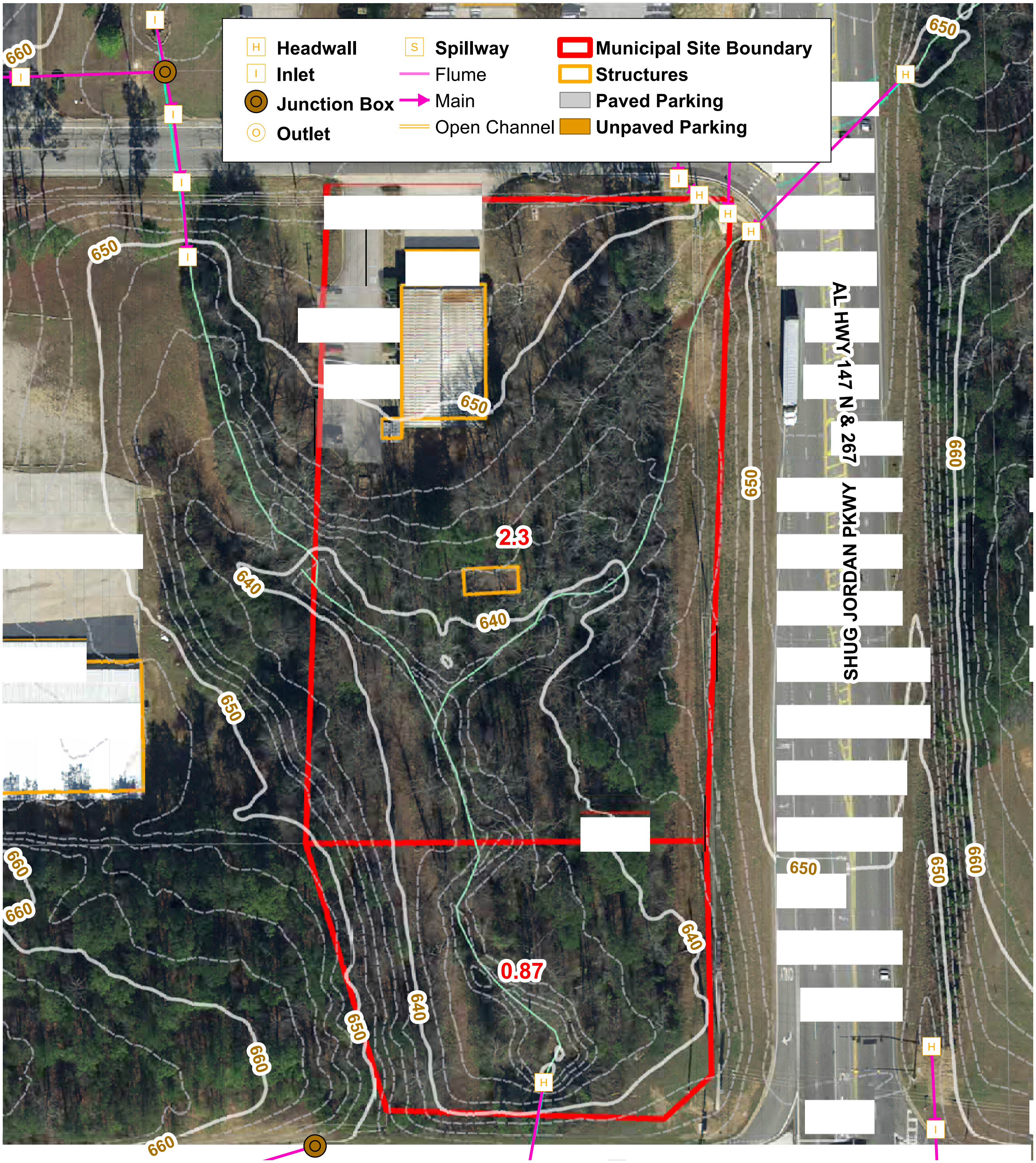
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 155 310 620 Feet

N

Fire Station 2
& Fields



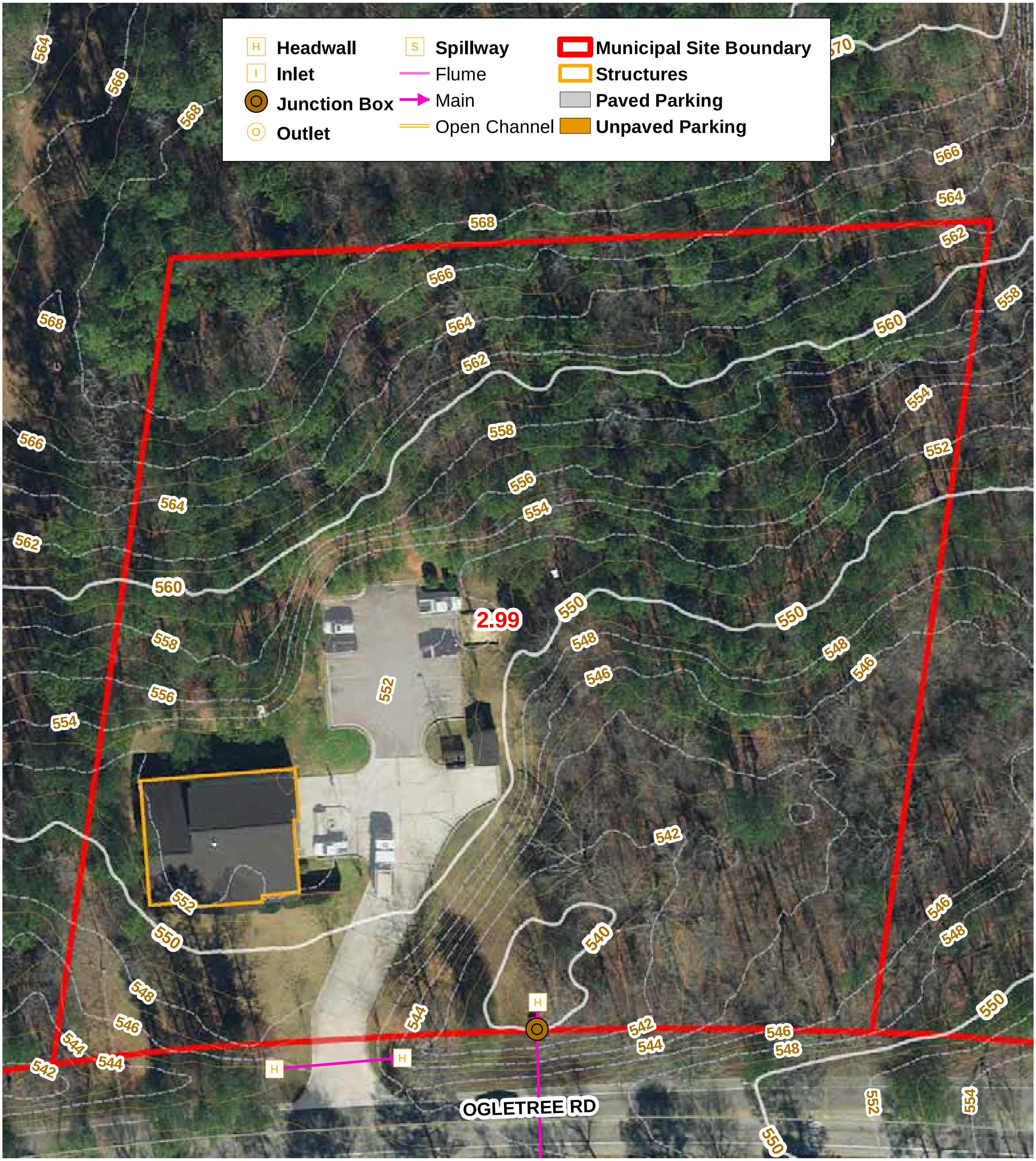
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 60 120 240

N

Ambulance Properties



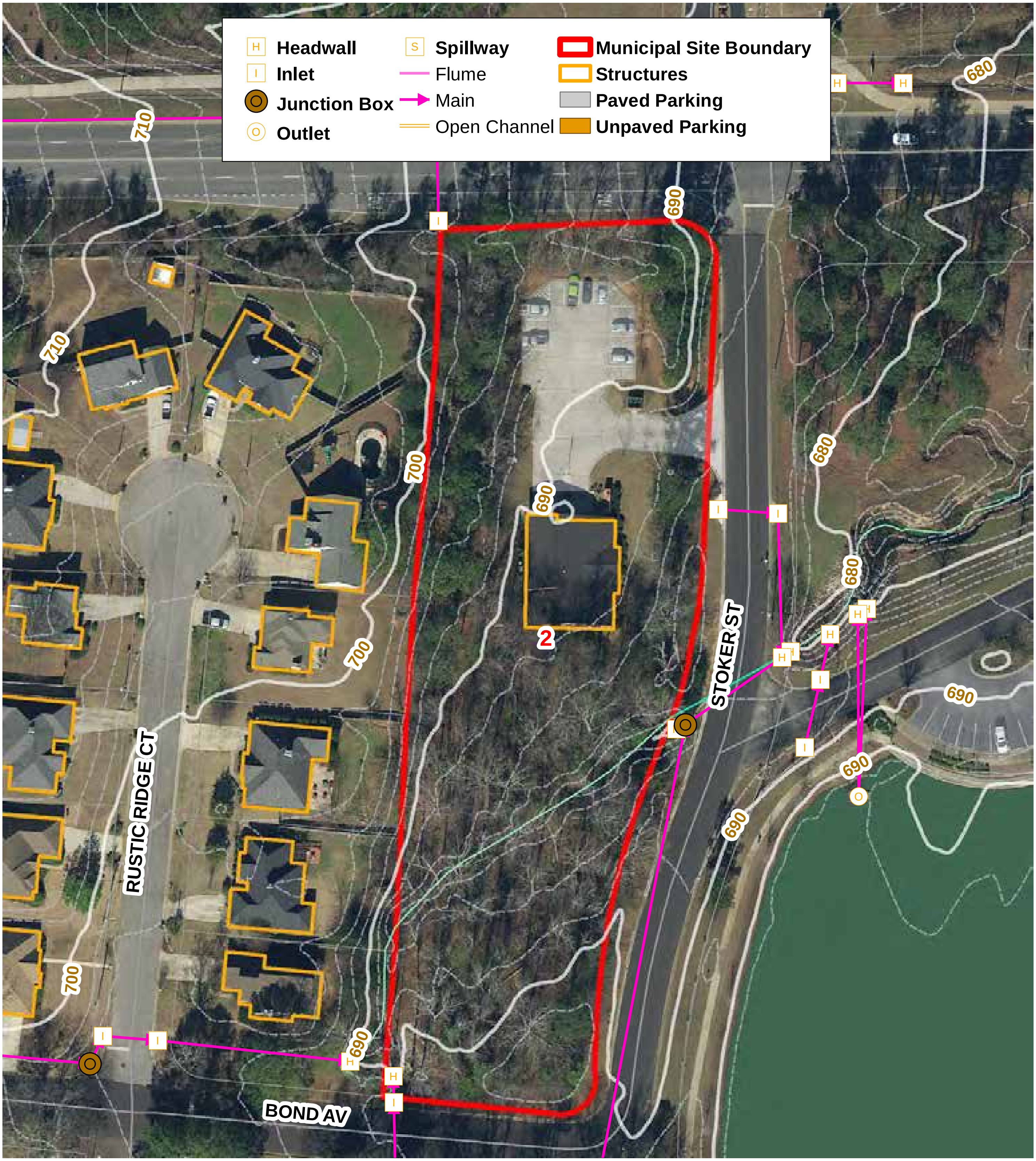
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 40 80 160

N

Fire Station 3



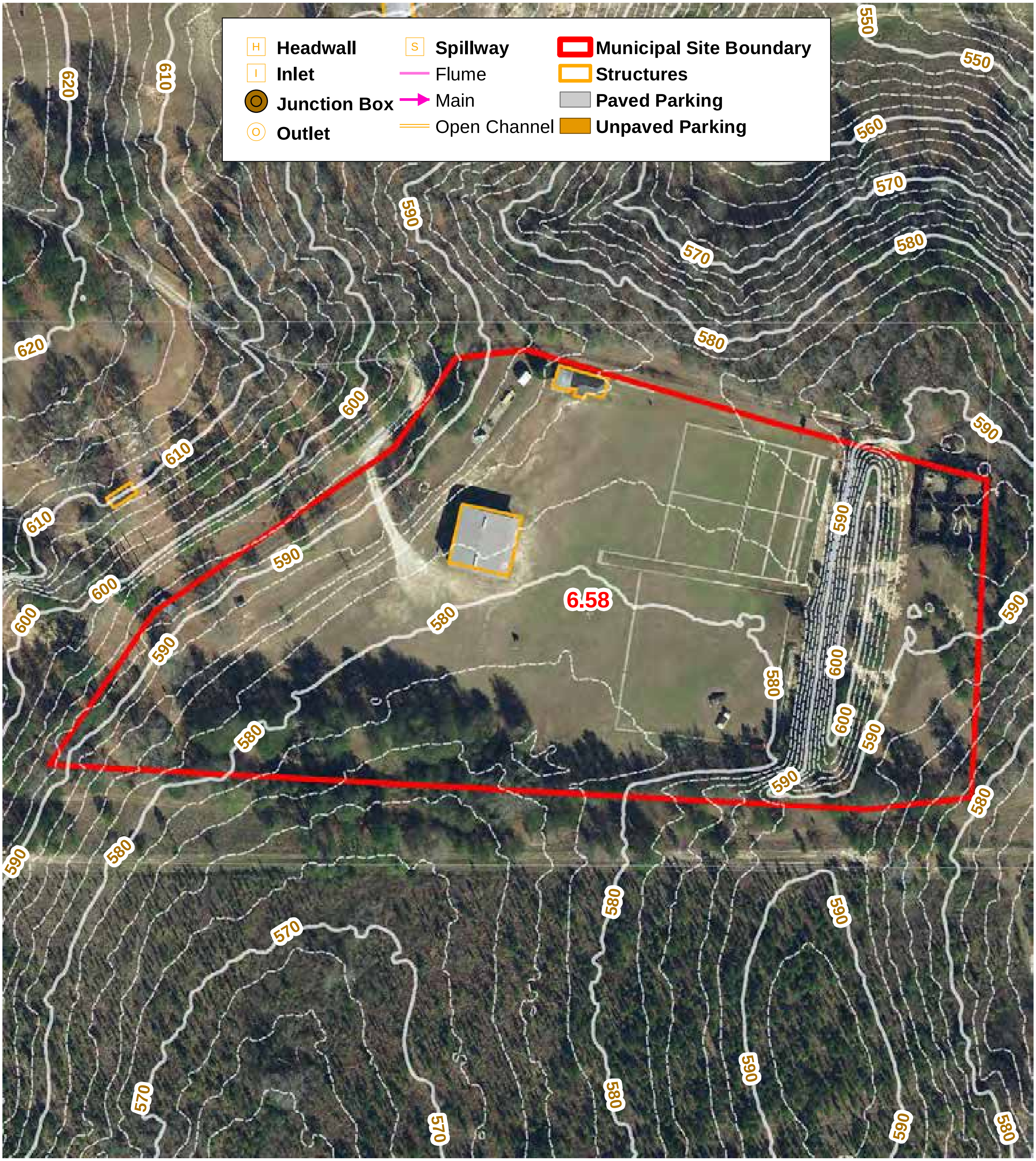
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 60 120 240

N

Fire Station 4



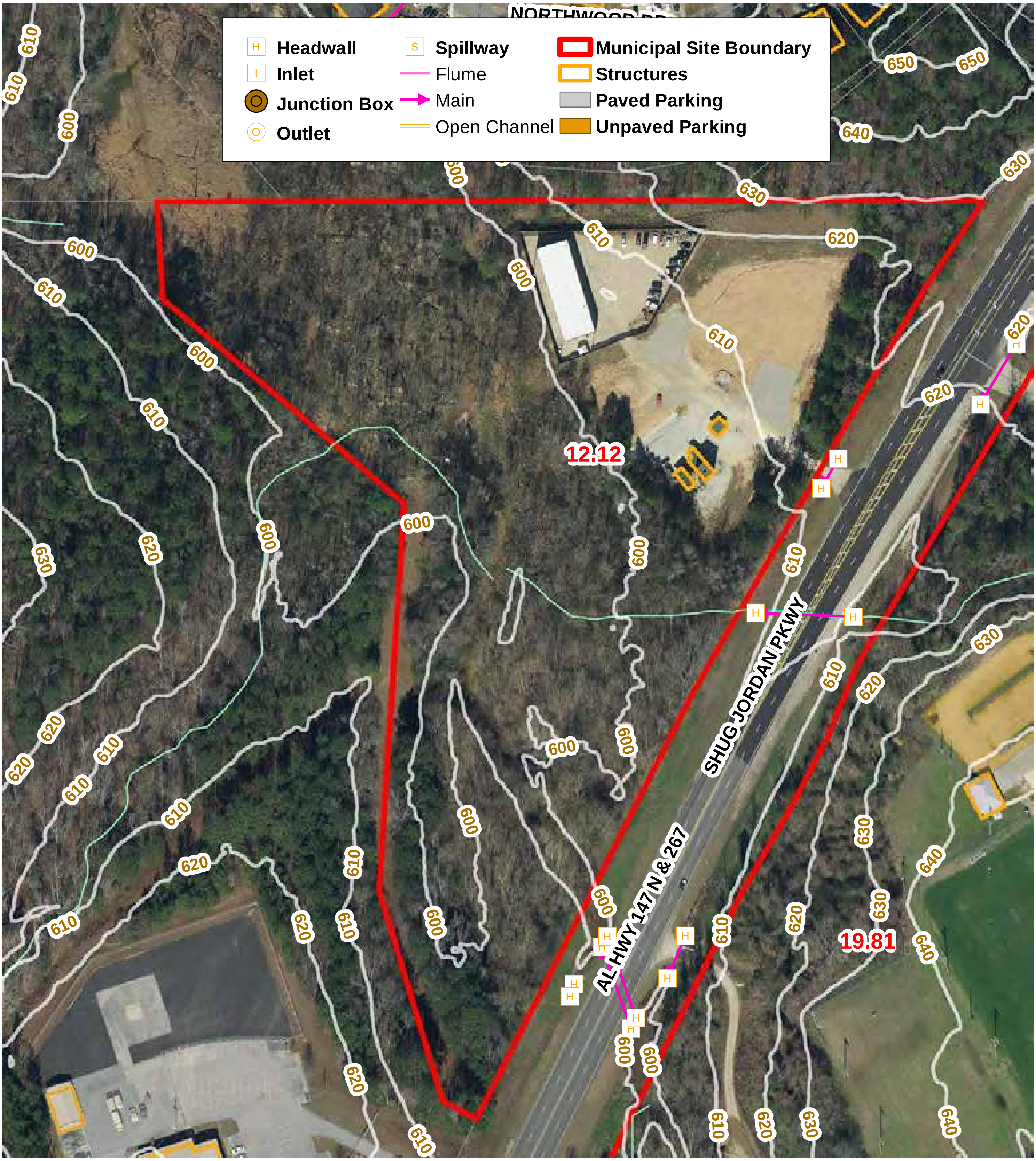
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 95 190 380 Feet

N

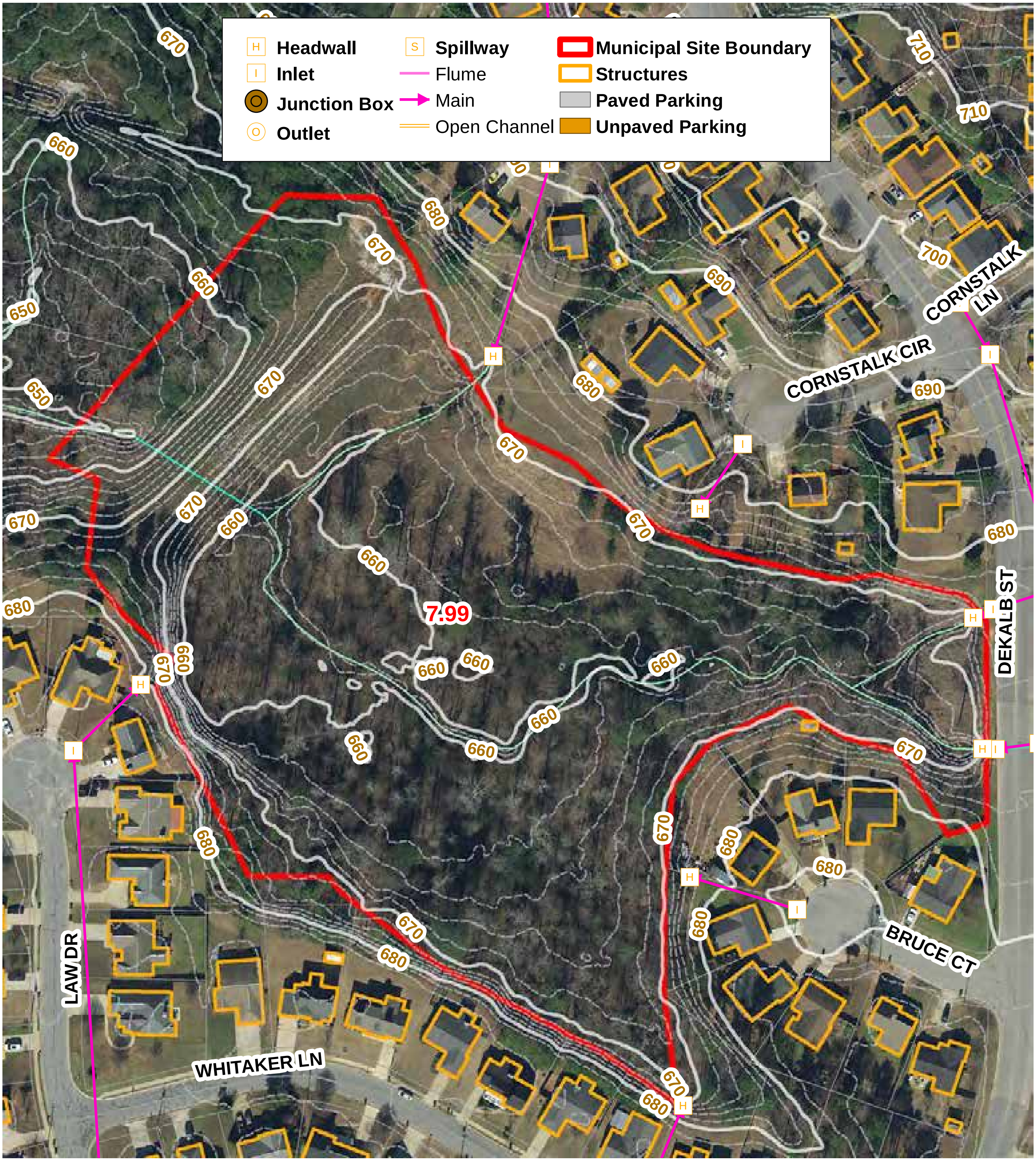
Firing Range



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Public Safety Training Facility



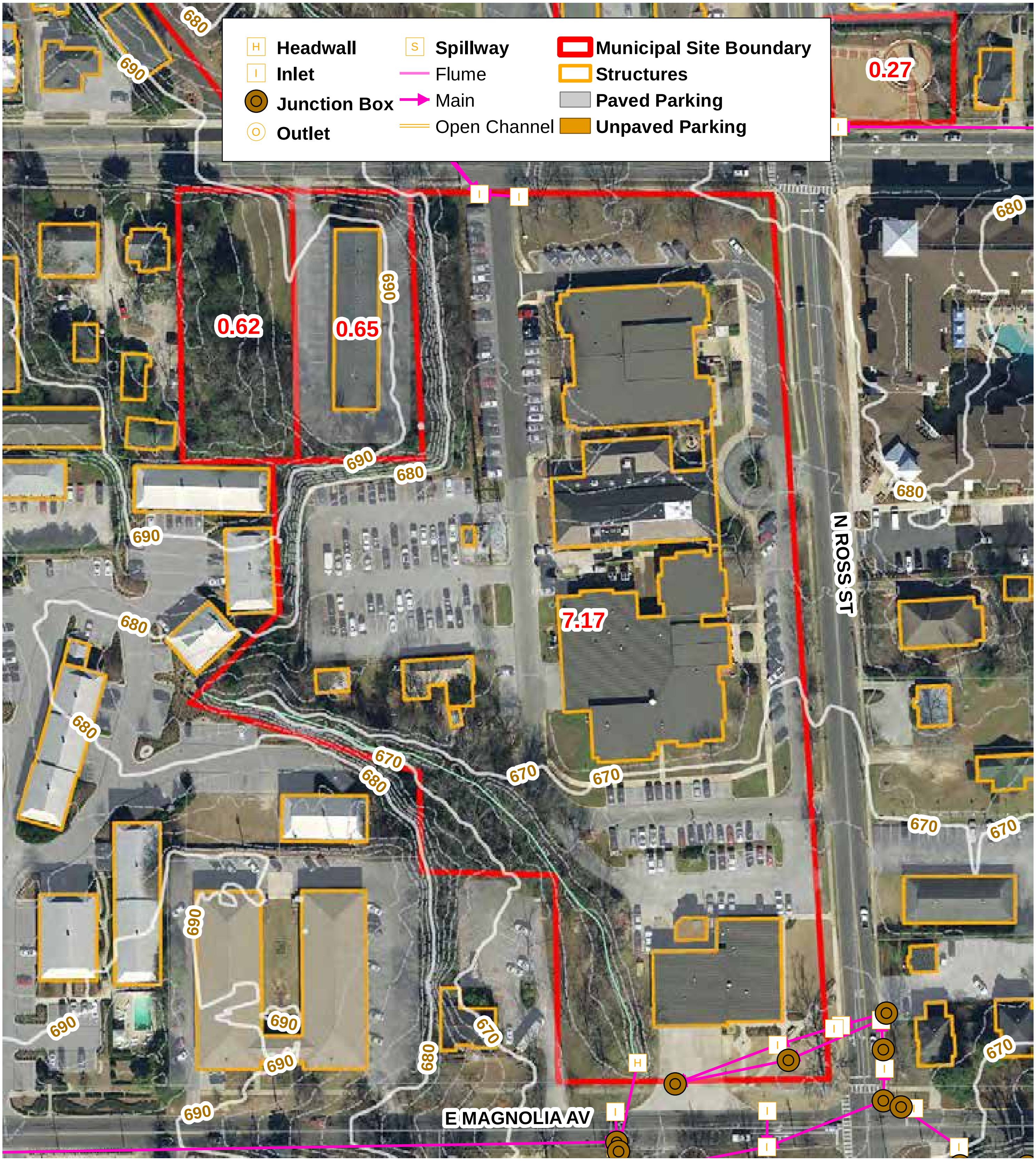
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 90 180 360

N

Dekalb St.
Regional DP



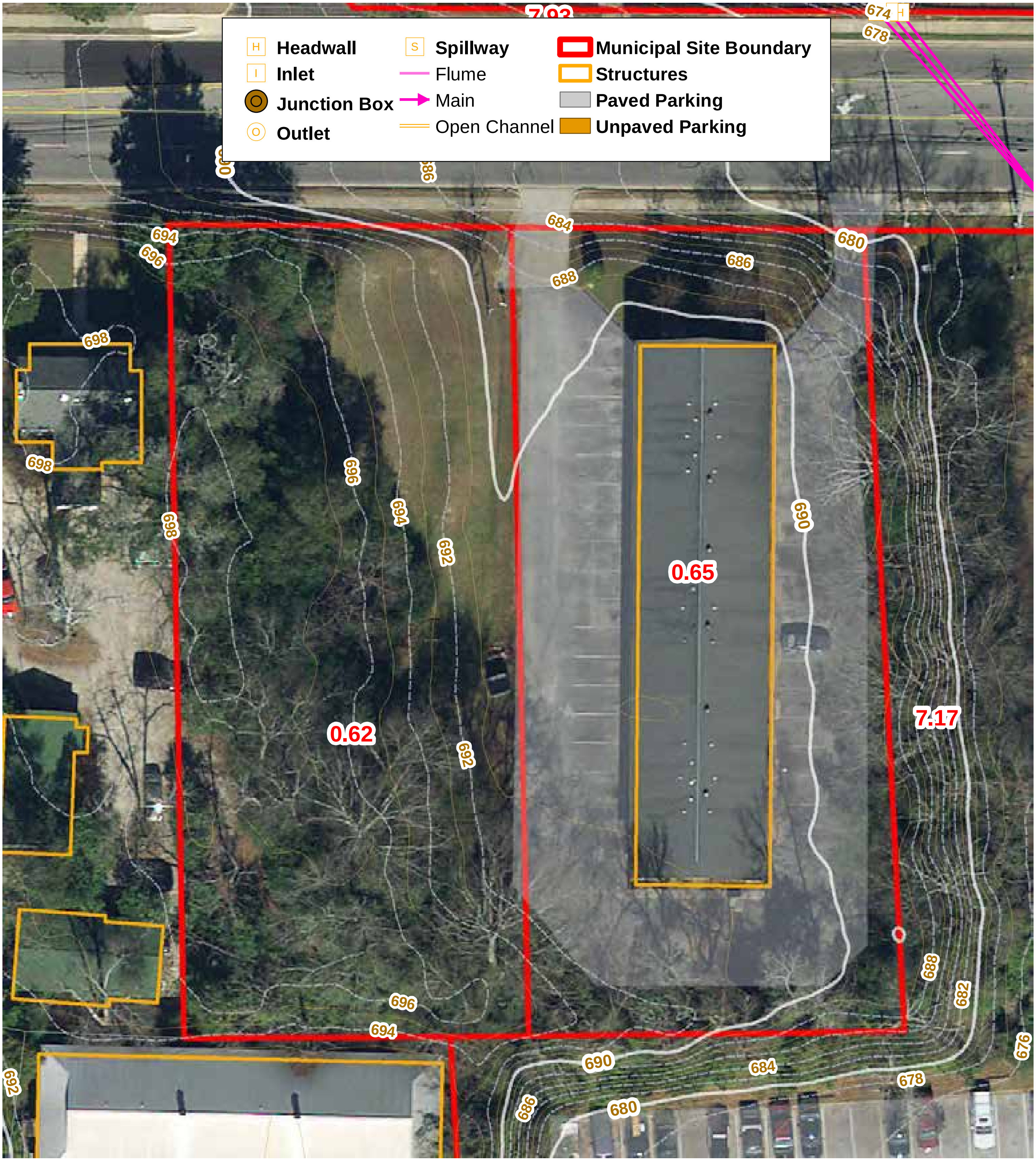
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 90 180 360

N

Doug Watson
Municipal
Complex



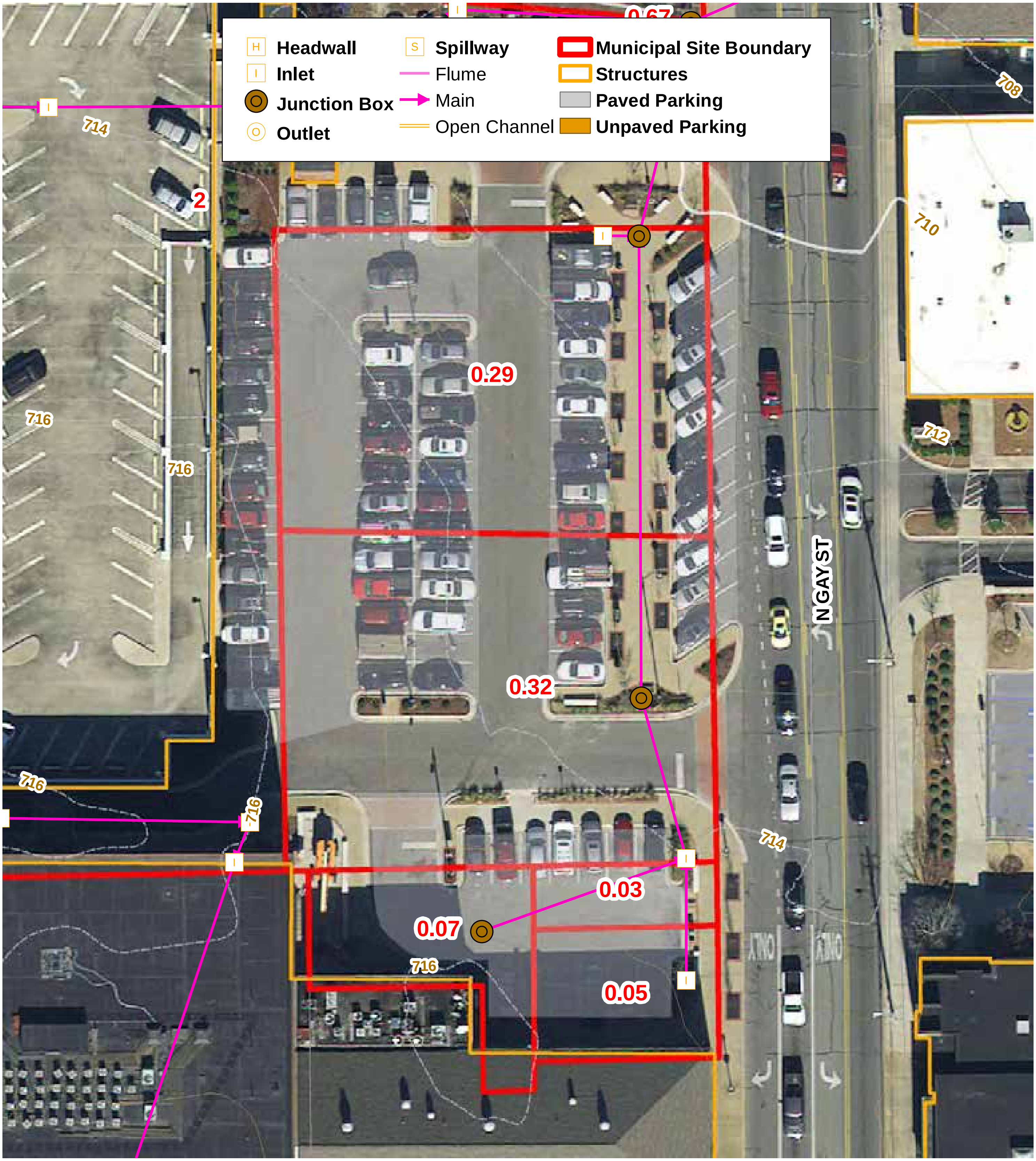
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 30 60 120

N

E Glenn Municipal Parking Lot



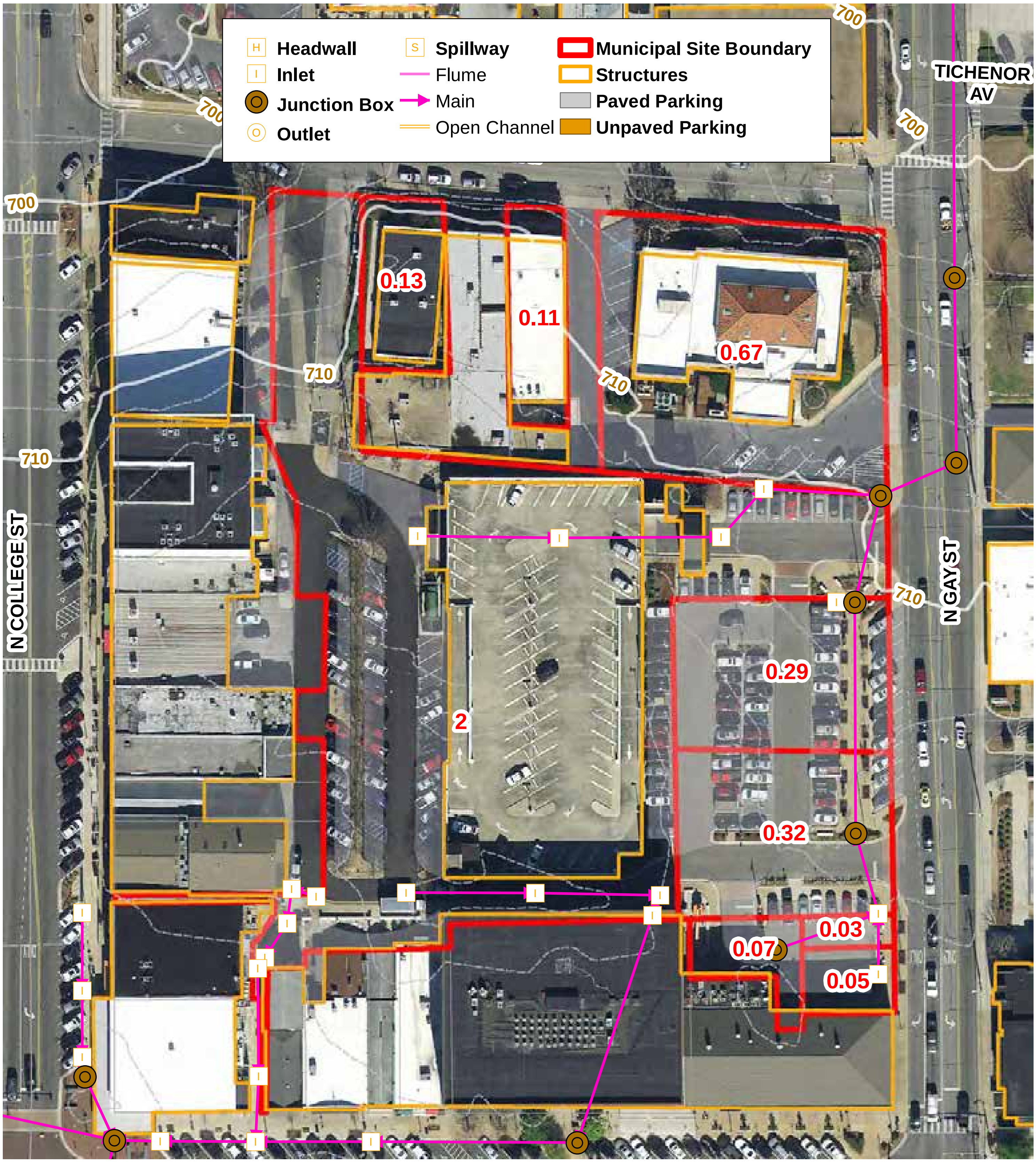
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 30 60 120

N

**N Gay St.
Parking Lot**



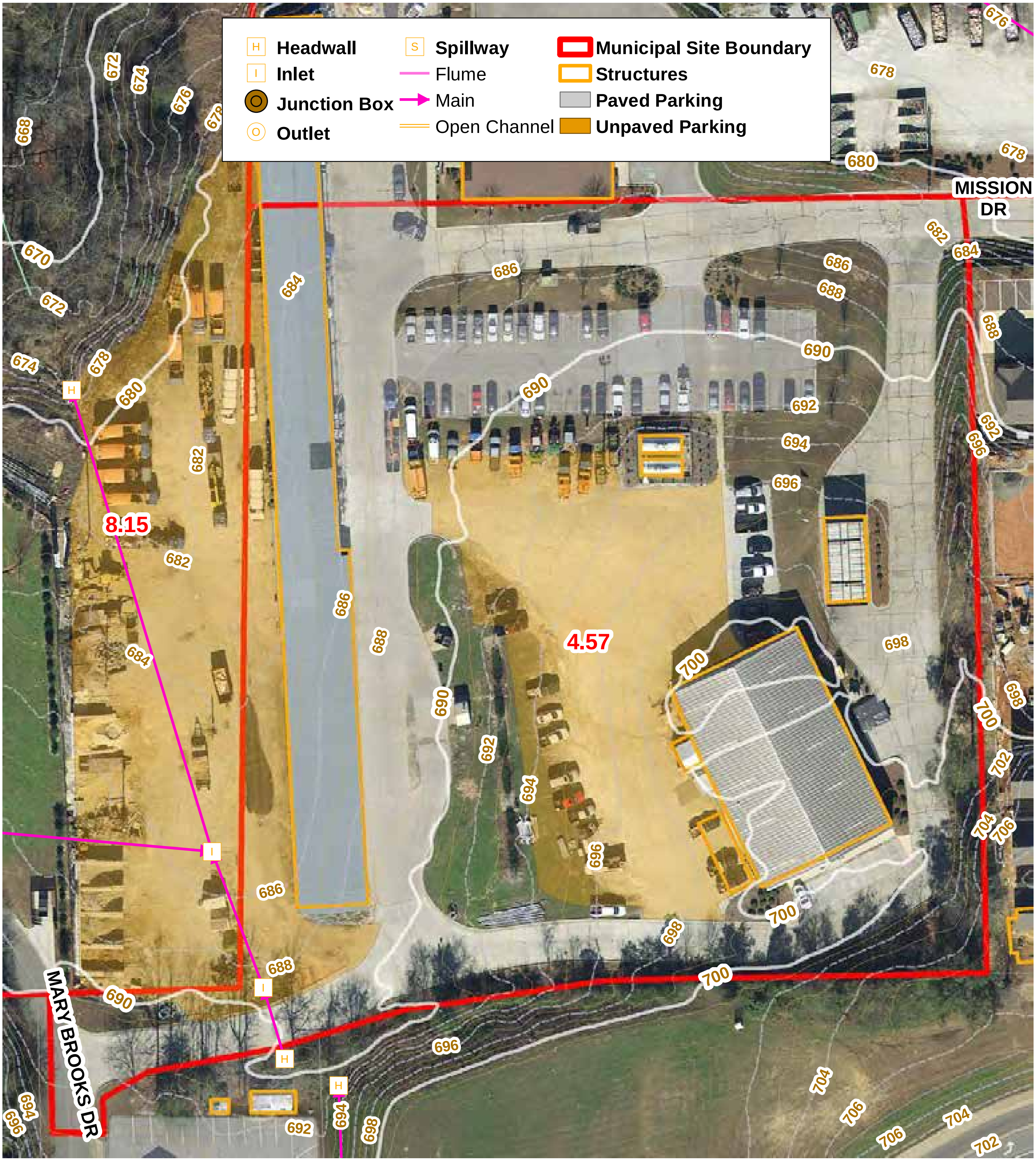
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 60 120 240

N

Parking Deck



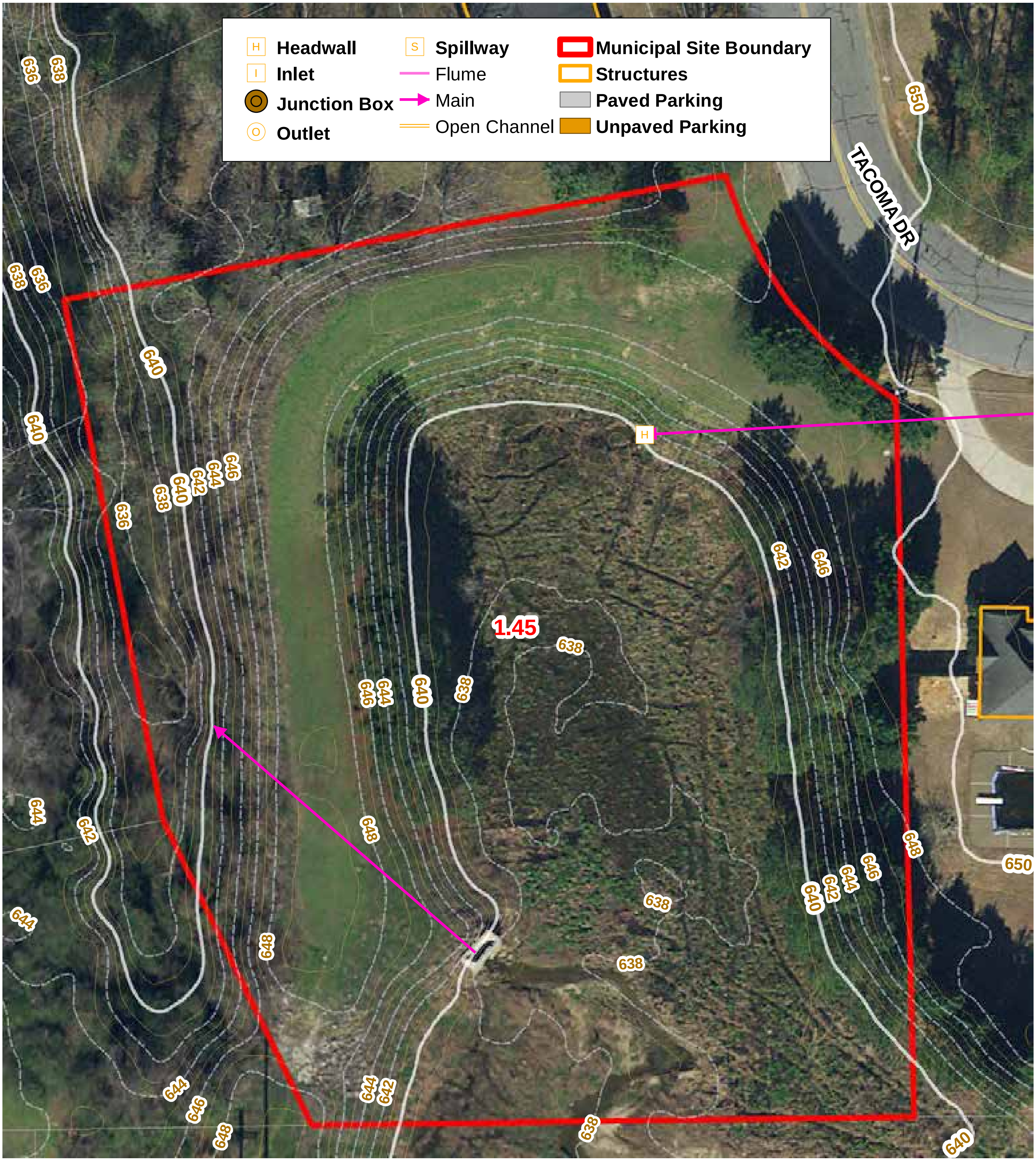
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 55 110 220 Feet

N

Public Works



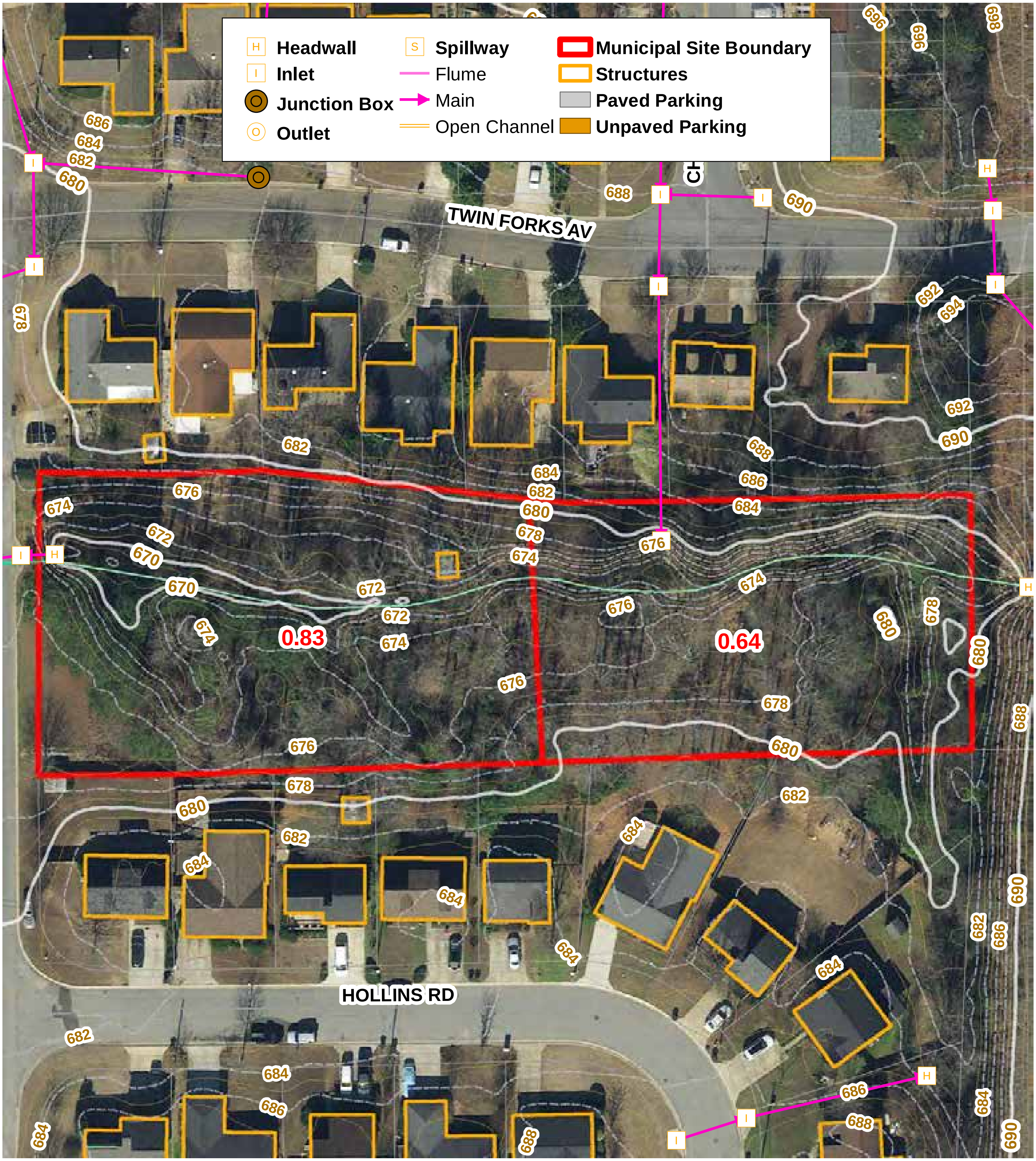
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 30 60 120

N

Tacoma Dr
Regional DP



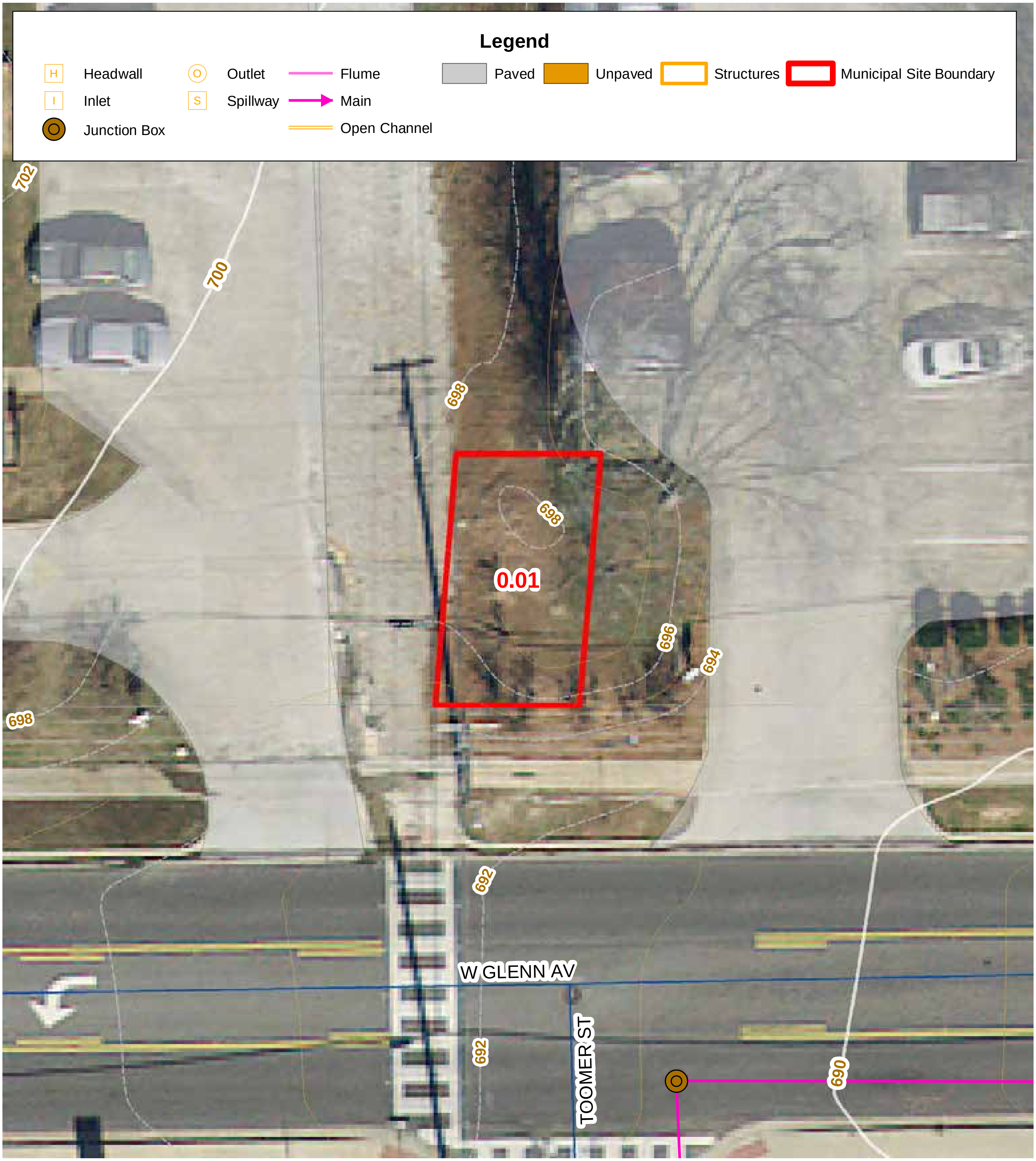
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 45 90 180

N

Twin Forks Av Properties



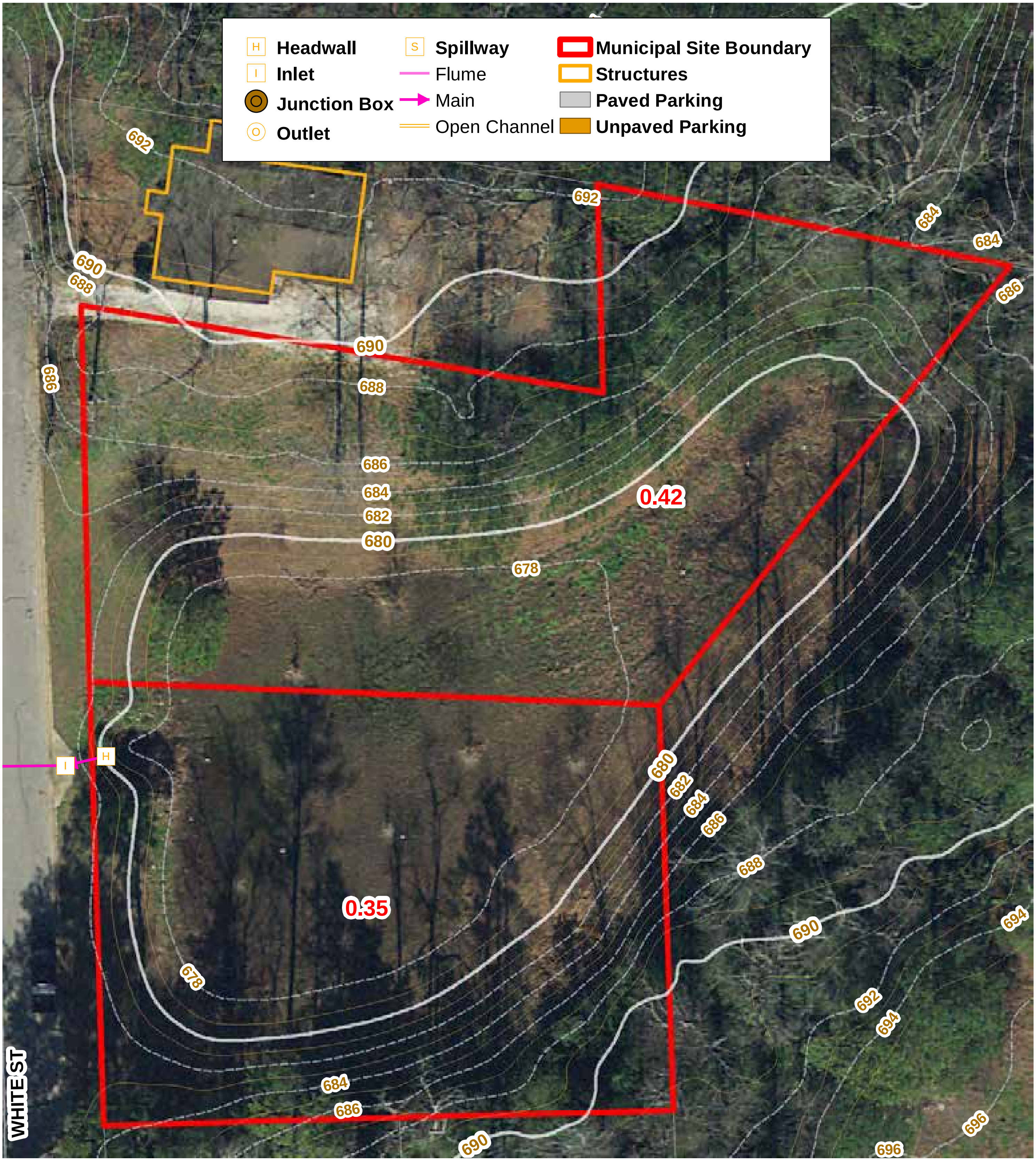
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 10 20 40

N

Toomers St. @ W Glenn



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 20 40 80 Feet

N

White St.
Regional DP

City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 50 100 200

N

Windway Floodplain

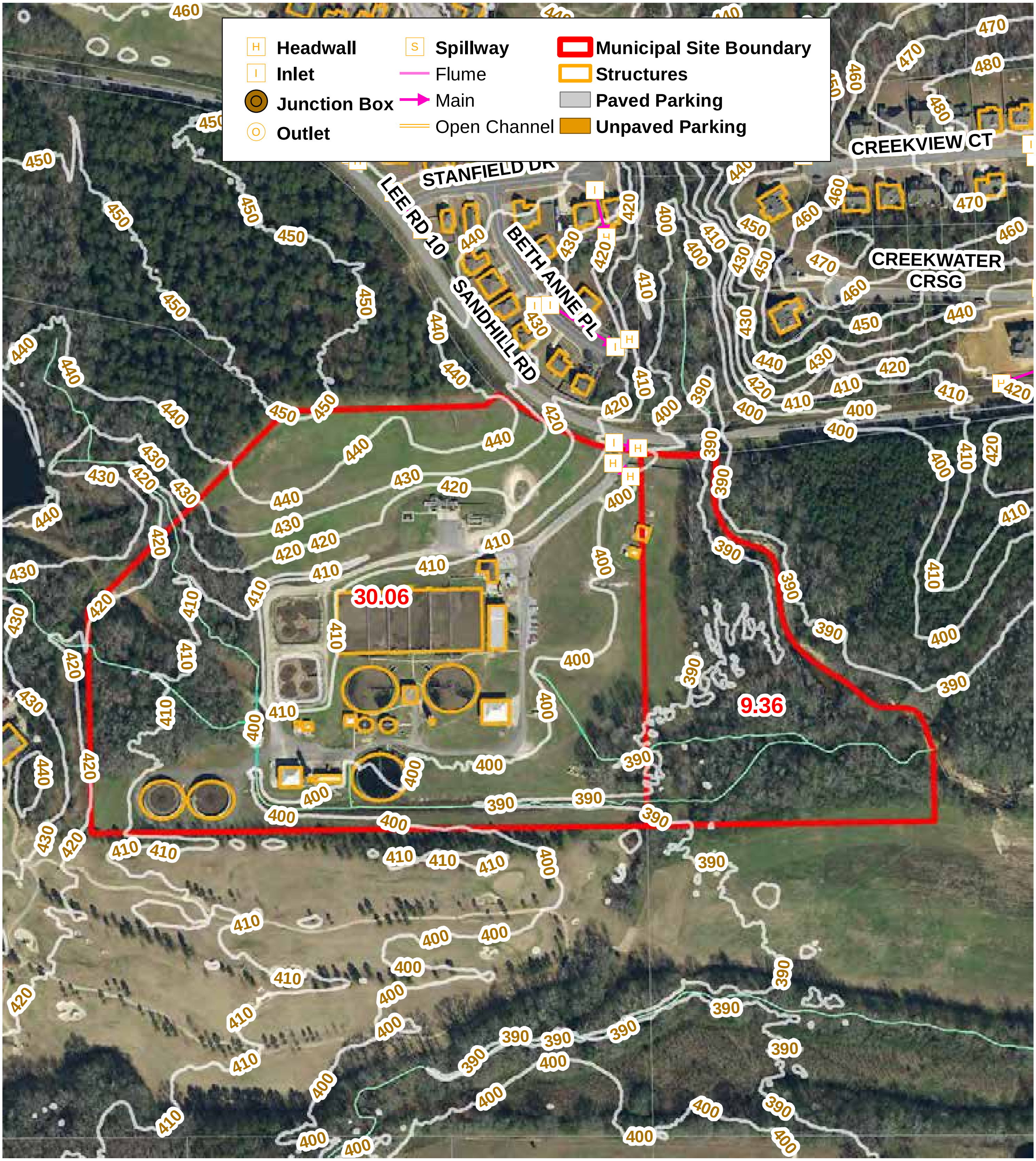
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 40 80 160

N

Choctafaula Lift Station



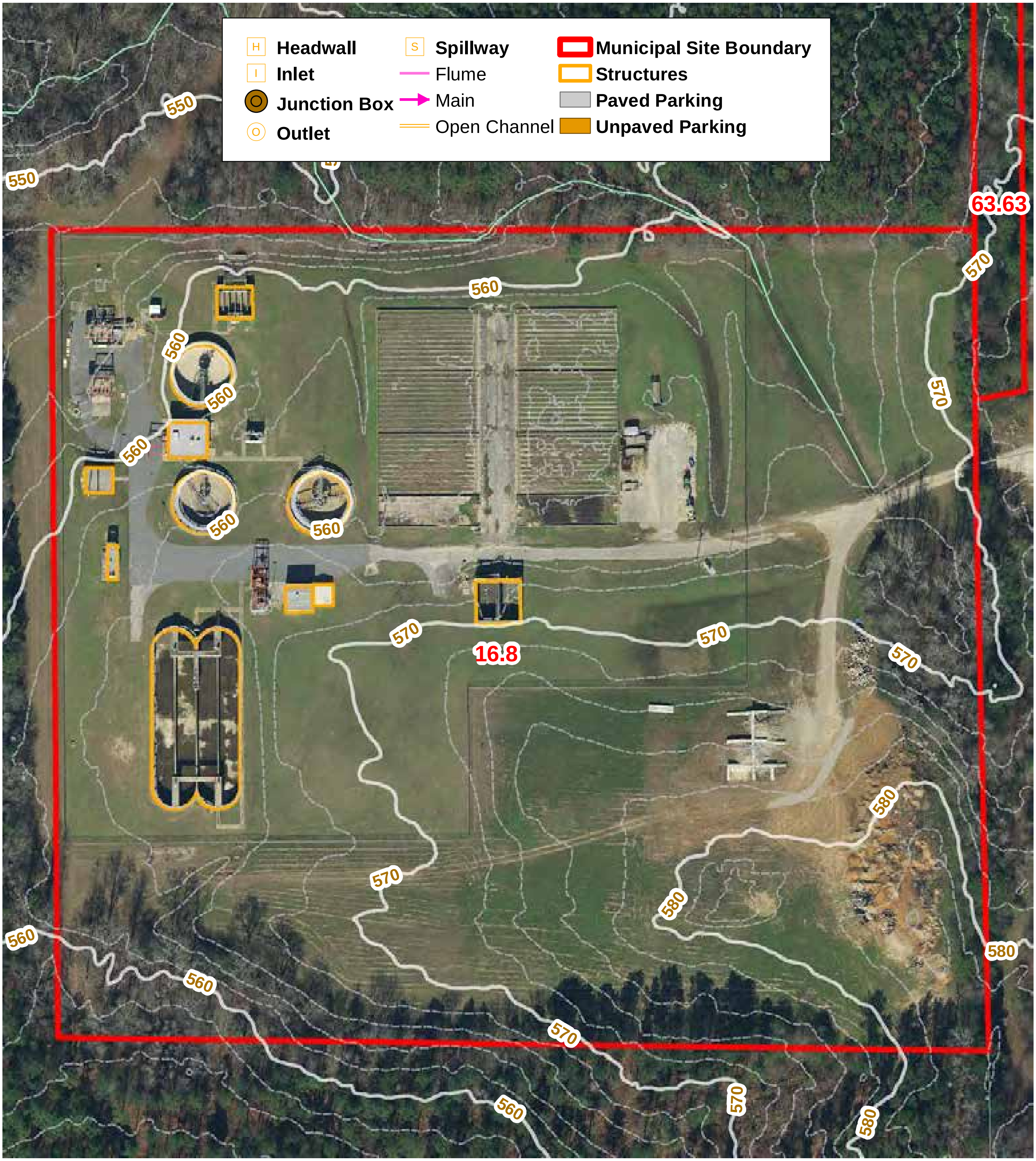
City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

0 245 490 980 Feet

N

HC Morgan WPCF



City of Auburn

City of Auburn
Municipal Facility Inventory
General Stormwater Housekeeping

Feet
0 95 190 380

N

Northside WPCF

CITY OF AUBURN
MUNICIPAL FACILITY STORMWATER QUESTIONbAIRE

General Site Information		
Facility Name and Address		
Responsible Department		
Primary Site Contact and Emergency Contact Number		
# Structures on Property and Approximate Total Square Footage of Structures	Total # of Structures at Facility	Total Sq. Ft. of Structures
Storm Sewer Information		
Do you know where the storm sewer inlets and outfalls are on the site?	No	
Do you visually inspect your stormwater inlets and outfalls regularly?	No	
Are your site's inlets and outfalls generally free and clear of debris?	No	
General Housekeeping		
Is your site generally free and clear of debris and trash?	No	
Are equipment and all chemicals safely and securely stored in a covered facility?	No	
Are any dumpsters and areas around them clean and accessible?	No	
Are any loading and unloading areas clean of oils, greases, etc.?	No	
Are there any areas of erosion occurring on your site?	No	
Does regular vehicle washing occurr onsite?	No	
If vehicle washing occurs, is the runoff directed to vegetated areas, storm sewer inlet, or other area?	N/A	
Are grass clippings properly disposed of (away from streams, storm sewers, etc.)?	No	
Are you aware of any stormwater related concerns or sources of potential stormwater pollution on the site?	Type any concerns here	

SUBMIT

APPENDIX G

MUNICIPAL FACILITIES ANNUAL STORMWATER INSPECTION FORM

City of Auburn

City of Auburn Municipal Facilities

Stormwater Inspection Form

Facility name:______________________________________

Address:____

Completed by: (Print); (Signature)_____________________

____

Date: ____

Good Housekeeping

Are outdoor work areas and storage areas are neat and tidy?

Is facility ingress/egress neat and tidy and free of debris, stains, etc.?

General Requirements:

Is a map of the property available, identifying the direction of stormwater flow and the location of storm drains?

Are storm drains are free of debris and stains of oil and chemicals?

Are nearby water bodies (streams, ponds, etc.) and drainage ditches are free of trash, oily sheen, foam, etc. that may be coming from the facility?

Landscape Maintenance

Are landscape waste and materials (i.e., grass clippings, compost, mulch) stored in a covered, bermed, or contained area?

Are piles of mulch, compost, or yard waste kept next to streams, channels, or storm drain inlets?

Are grass clippings mulched onsite or disposed of properly after mowing?

Is there evidence of pesticides/herbicides being sprayed near surface waters, creeks, ditches, or storm drains?

Building Maintenance

Is surface or pressure washing being performed in a manner such that it does not directly discharge to the MS4?

Is wastewater sent to the sanitary sewer system when chemicals or soap are being used or if materials other than ambient dirt are being cleaned from the pavement?

Is there any evidence of other building maintenance activities that would represent a potential to contribute to stormwater pollution?

Material Storage

Are potential contaminants stored under cover or housed in appropriately sized secondary containment devices/controls?

Are materials being loaded or unloaded near storm drain inlets, drainage ditches, or areas draining to these areas?

Are unused materials kept in original containers which are labeled to identify contents?

Are materials stored next to waterbodies (streams, drainage channels, etc.)?

Are Secondary Containment devices/controls present? If so, do they appear to be in good working order?

Equipment Storage

Are equipment stored under cover when possible?

Is equipment inspected regularly for spills and leaks due to operator error or equipment failure?

Are any spills and leaks from equipment cleaned up promptly?

Is preventative maintenance routinely performed on equipment to prevent leaks?

Are vehicle and equipment fueling signs present at fueling stations that prohibit "topping off" and describe spill procedures?

Are drips and leaks spot cleaned promptly and absorbent is collected and disposed of properly?

Are fueling equipment/tanks properly maintained and labeled (i.e., overflow protection devices, automatic shutoff valves, etc.)?

Vehicle and Equipment Maintenance

Are vehicle maintenance activities conducted in specified area not exposed to stormwater?

If vehicle/equipment maintenance is performed outside, are drip pans are placed under places where spills can occur (i.e., hose connections, filler nozzles, etc.)?

Are leaking vehicles are reported to fleet maintenance?

Is vehicle and equipment washing water directed to nearby landscaping or is allowed to evaporate?

Is wash water sent to the sanitary sewer system when chemicals or soap are being used?

Are spills or leaks that occur when loading or unloading cleaned up promptly?

Is waste properly disposed of?

Aredumpsters or outdoor trash containers covered at all times unless in use?

Are hazardous materials properly labeled to identify material?

Are hazardous materials stored to prevent exposure to stormwater runoff?

If applicable, does the facility have a spill response plan that is readily accessible?

Do fueling stations/islands have spill kits with absorbents immediately accessible?

Are spill kits complete and restocked.

Is there evidence that spills are not being cleaned up promptly and properly?

Are employees aware of the location of spill response kits?

Are phone numbers and contact information for spill reporting readily available?