Nancy Creek Consolidated Watershed Based Plan

Georgia EPD

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Produced by: Sustainable Water Planning & Engineering

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0 Nancy Creek Watershed Based Plan Overview

This section provides an overview of the Nancy Creek Watershed Based Plan (WBP). This section includes the purpose, extent, planning process, plan layout, and background information that provides context for the remainder of the document.

0.1 Watershed Overview

The Nancy Creek Watershed originates in Peachtree Corners and then generally flows southwest to the confluence with Peachtree Creek just upstream of the confluence with the Chattahoochee River (Figure 0-1). Water in Nancy Creek eventually flows to the Gulf of Mexico. The entire watershed is approximately 24,200 acres or 37.8 square miles. The Nancy Creek Watershed (HUC12 #031300011203) is in the Chattahoochee River Basin.

0.1.1 Major Tributaries to Nancy Creek

There are several named tributaries within the Nancy Creek Watershed, identified in Table 0-1 and Figure 0-2. The letters in Figure 0-2 correspond to the tributary names in Table 0-1.

Table 0-1 – Major Tributaries in the Nancy Creek Watershed

Tributary Name	Jurisdiction(s)	Length (miles)
A. Bubbling Creek	Chamblee, Brookhaven	1.3
B. Little Nancy Creek	Brookhaven, Atlanta	2.4
C. Mill Creek	Atlanta	1.6
D. North Fork Nancy Creek	Dunwoody, Brookhaven	2.0
E. Perimeter Creek	Sandy Springs, Dunwoody, Brookhaven	2.2
F. Silver Creek	Chamblee, Brookhaven	1.6
G. Wolf Creek	Atlanta	2.2
Unnamed Major Tributaries	All	38.3
Nancy Creek Mainstem	All	24.0
	Total Miles of Major Tributaries	**75.6**

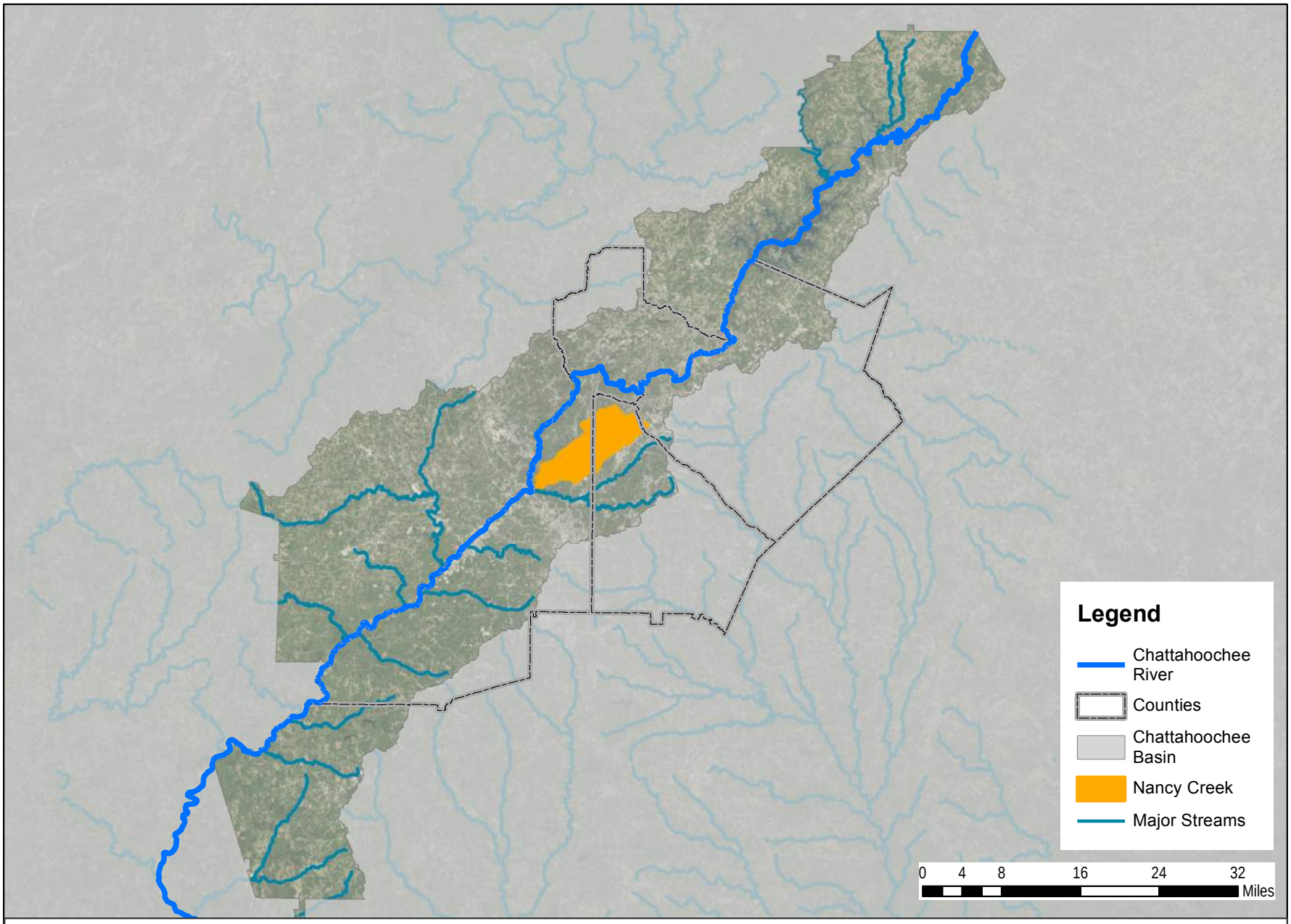


Figure 0-1: Overview of the Nancy Creek Watershed

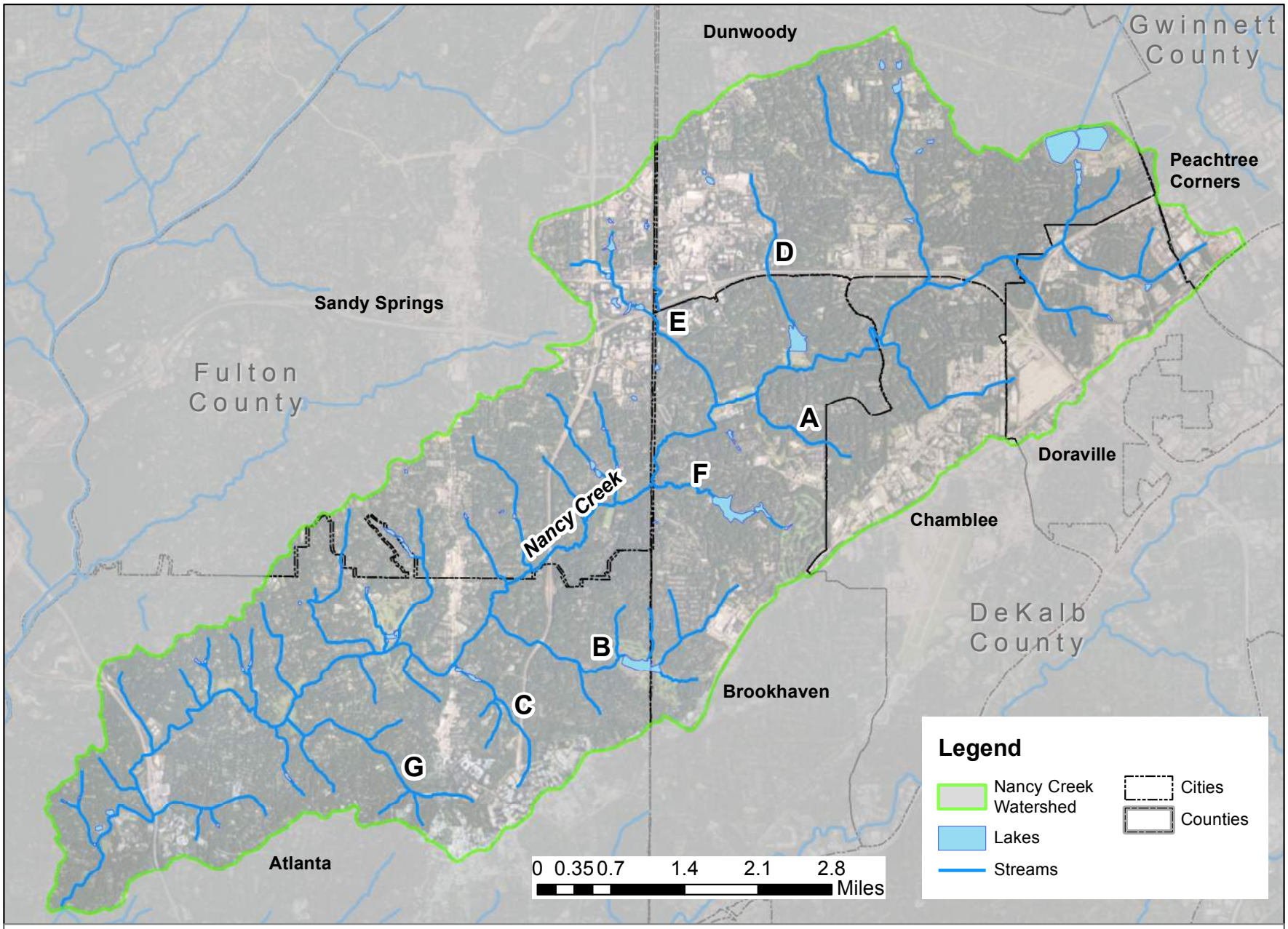


Figure 0-2: Major Named Tributaries in the Nancy Creek Watershed

Table 0-1 shows that approximately half of the major stream miles within the watershed do not have an official name. There is a recommendation in Section 5.2.2 to hold public stream naming contests, following the USGS Geographic Naming protocols, in order to create a better sense of place and ownership for the unnamed streams within the watershed.

Nancy Creek and Bubbling Creek are both classified as impaired because they do not meet state water quality standards. The sources of water quality impairment are described further in Section 1.

0.1.2 Lakes in the Nancy Creek Watershed

There are sixty-four (64) existing lakes and ponds identified within the Watershed. Six (6) of these lakes have known names, the remaining are eligible for naming as described in Section 5.2.2. The named lakes are described in Table 0-2 and illustrated in Figure 0-3. The letters in Figure 0-3 correspond to the letters in Table 0-2.

Table 0-2 – Known Lakes in the Nancy Creek Watershed

Lake Name	Jurisdiction(s)	Area (acres)
U. Brookhaven Country Club Lake	Atlanta, Brookhaven	20.3
V. Concourse Lagoon	Sandy Springs	2.5
W. DeKalb County Scott Candler WFP Reservoirs 1 and 2	Dunwoody	76
X. Murphey Candler Lake	Brookhaven	19.6
Y. Peppertree Lake	Sandy Springs	4.2
Z. Silver Lake	Brookhaven	23.8
Unnamed Known Lakes	All	79.2
	Total Acreage of Known Lakes	**225.6**

0.1.3 Jurisdictions in the Nancy Creek Watershed

The Nancy Creek watershed includes portions of seven (7) cities and three (3) counties. The seven (7) cities include: Atlanta, Brookhaven, Chamblee, Doraville, Dunwoody, Peachtree Corners, and Sandy Springs. The three (3) counties include; DeKalb, Fulton, and Gwinnett. Table 0-3 shows the acreages within the Nancy Creek watershed by jurisdiction as well as the percentage of the total watershed within that jurisdiction. Figure 0-4 shows the jurisdictional boundaries within the watershed.

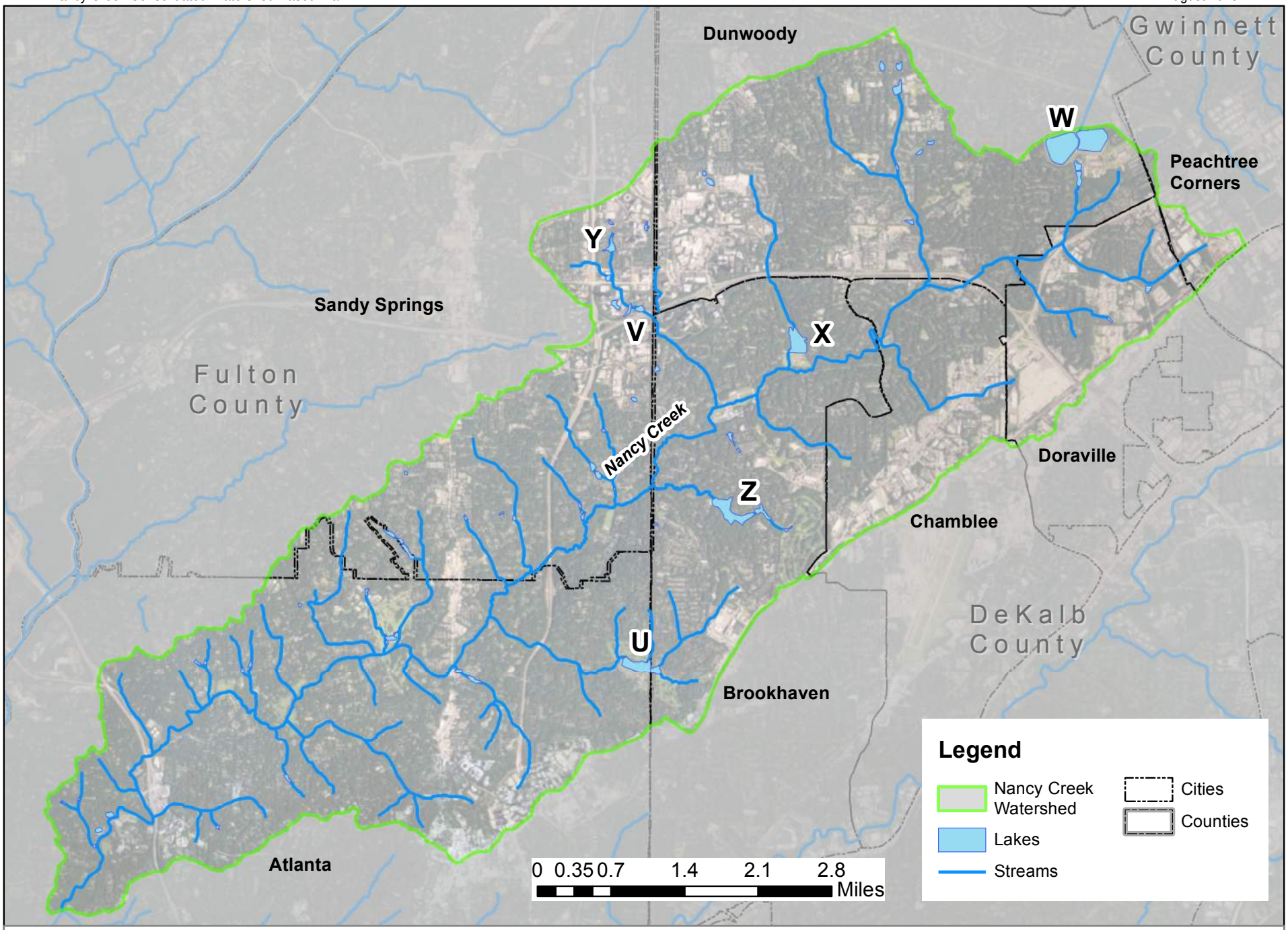


Figure 0-3: Known Lakes in the Nancy Creek Watershed

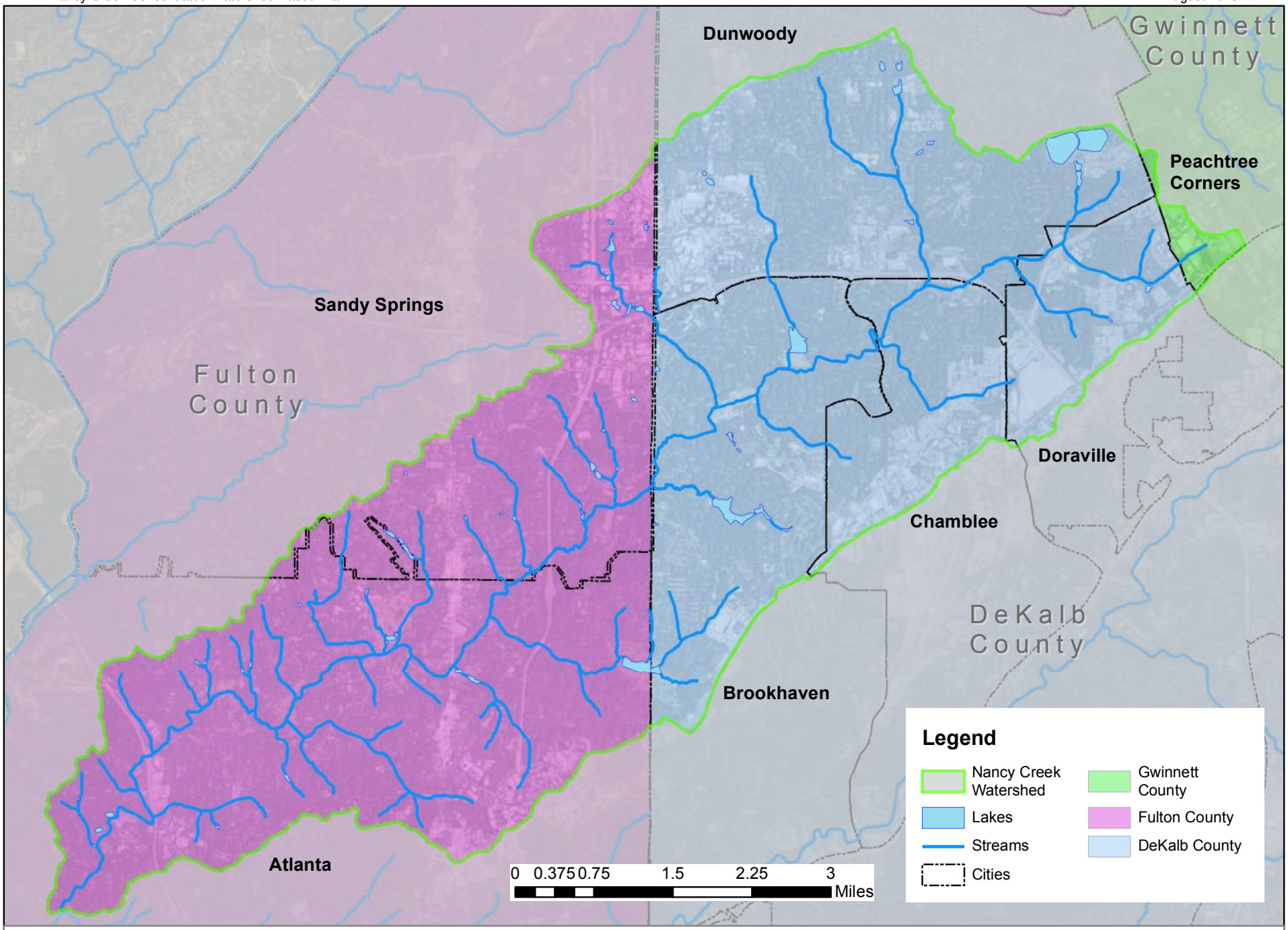


Figure 0-4: Jurisdictions in the Nancy Creek Watershed

Table 0-3 – Nancy Creek Watershed Land Area by Jurisdiction

Jurisdiction	Land Area (acres)	Land Area (%)
Peachtree Corners	215	0.9%
Gwinnett County subtotal:	**215**	**0.9%**
Brookhaven	3,954	16.3%
Chamblee	1,913	7.9%
Doraville	1,523	6.3%
Dunwoody	4,762	19.7%
DeKalb County subtotal:	**12,152**	**50.2%**
Atlanta	8,029	33.2%
Sandy Springs	3,795	15.7%
Fulton County subtotal:	**11,824**	**48.9%**
Total Area:	**24,191**	**100%**

0.2 Project Goals and Objectives

There are three primary goals of the Nancy Creek WBP that are listed below and described further in this section. The project goals include:

1. Develop a WBP that follows the United States Environmental Protection Agency (EPA) “nine (9) minimum planning elements” so that identified projects are grant eligible;
2. Identify specific projects that will contribute toward meeting water quality standards; and
3. Create a multi-jurisdictional plan that engages the entire watershed.

The first goal of this WBP is to meet the "nine (9) minimum planning elements" as outlined by EPA and listed in Table 0-4. The Georgia Environmental Protection Division (Georgia EPD) selected to study the Nancy Creek watershed in part due to a high level of interest in grant funds from the watershed. Some of the grant applications did not score well enough to be funded, in part because they were not part of a WBP.

The Nancy Creek WBP includes all nine elements and the text follows the nine minimum elements format. For example, Section 1 of this WBP includes details to address minimum element 1.

Table 0-4 – EPA Nine Minimum Planning Elements for Watershed Based Plans

#	Minimum Elements
1	Identification of Pollutant and Impairment Causes and Sources
2	Pollutant Load Reduction Estimates from Best Management Practices (BMPs)
3	BMPs and Critical Target Areas for Installation
4	Identification of Financial and Technical Assistance to Implement BMPs
5	Education and Outreach and Public Involvement
6	BMP Implementation Schedule
7	Interim Milestones to Determine Progress of BMP Implementation
8	Criteria to Monitor and Assess BMPs
9	Component to Determine Plan Implementation Effectiveness

The second goal is to create a list of projects within the watershed that could improve the health of the Nancy Creek watershed. This WBP identifies 225 projects that, if implemented, could improve the health in the watershed. These 225 projects represent a significant investment in the watershed that will likely span more than 50 years.

The final project goal is to create a regional WBP that engages the entire watershed. The cities and counties within the watershed participated throughout the process from data collection, meeting participation, and shaping the recommendations in this Plan. There is at least one recommended project within each political jurisdiction, demonstrating the shared interest in the Nancy Creek Watershed. This WBP is the first multi-jurisdictional planning effort focused on the entire Nancy Creek watershed. This Plan recommends continuing the coordination and collaboration through implementation of this Plan.

0.2.1 Non-Regulatory Plan

It is important to note that a Watershed Based Plan is a non-regulatory plan, which is distinct and separate from the Watershed Improvement Plans (WIPs) required by the Metropolitan North Georgia Water Planning District (Metro Water District). While some communities have developed WIPs that identify the improvement projects for a portion of the watershed, this Plan will close the gap and provide a comprehensive picture of current watershed conditions and the watershed projects intended to improve watershed health. Recommendations in this Plan are not regulatory. Voluntary implementation of the WPB recommendations requires sufficient funding, staffing, and support from the elected officials in each jurisdiction.

0.3 Planning Process

The main steps in the planning process are summarized in Figure 0-5 below. The planning process started in June 2017 and concluded with the Final Nancy Creek Watershed Based Plan in August 2018.

Figure 0-5: Watershed Based Plan Planning Process

A Watershed Advisory Committee (WAC) comprised of representatives from the local governments in the watershed and other relevant organizations met three times throughout the planning process. In addition to the three meetings, the WAC provided data critical to the watershed assessment and assisted with the identification of projects in the individual communities or jurisdictions. The WAC reviewed the Draft Watershed Based Plan and assisted in development of the final Watershed Based Plan. The members of the WAC are listed in the Acknowledgement section of this Plan.

0.3.1 Public Involvement

Public involvement is an important component of the planning process and also one of the nine minimum elements. There were two public meetings; one early in the planning process to solicit input and confirm the known location of watershed challenges and the second later in the process to present to and confirm with the community that the recommended solutions were appropriate and acceptable. Approximately 25 people attended the two public meetings and feedback from attendees was documented and where practicable and applicable, integrated into the final WBP. The feedback from the public involvement activities is summarized in Section 5.1.

1 Minimum Element #1: Identification of Pollutant and Impairment Causes and Sources

This section provides an overview of the known impaired waterbodies within the Nancy Creek Watershed as well as a summary of the available water quality and habitat data. This section also summarizes the land use within the watershed, as land use is considered a strong indicator of water quality.

1.1 Impaired Waters

There are two streams currently designated as impaired by the state; Nancy Creek and Bubbling Creek (Figure 1-1). Nancy Creek is classified as impaired for exceeding the fecal coliform bacteria standard and for biota impacts to fish. Bubbling Creek is classified as impaired for exceeding the fecal coliform bacteria standard. These impairments are described further in the next two subsections.

It is important to note that Nancy Creek and Bubbling Creek are the only two streams in the Nancy Creek watershed that are monitored by the state. Since watershed conditions are similar throughout the watershed, impaired conditions are expected in other portions of the watershed. Therefore, any project within the watershed is expected to improve conditions in an impaired waterbody.

1.1.1 Fecal Coliform Bacteria

Nancy Creek and Bubbling Creek are classified as impaired for fecal coliform bacteria. Fecal coliform bacteria are found in the large intestines of warm-blooded animals. Sources of fecal coliform bacteria include sanitary sewer sources, failing septic systems, pet waste, and wildlife waste. The TMDL for Bubbling Creek[i] estimates a 99 percent reduction in fecal coliform bacteria is needed to meet state standards. The TMDL for Nancy Creek[i] estimates an 84 percent reduction in fecal coliform bacteria is needed to meet states standards.

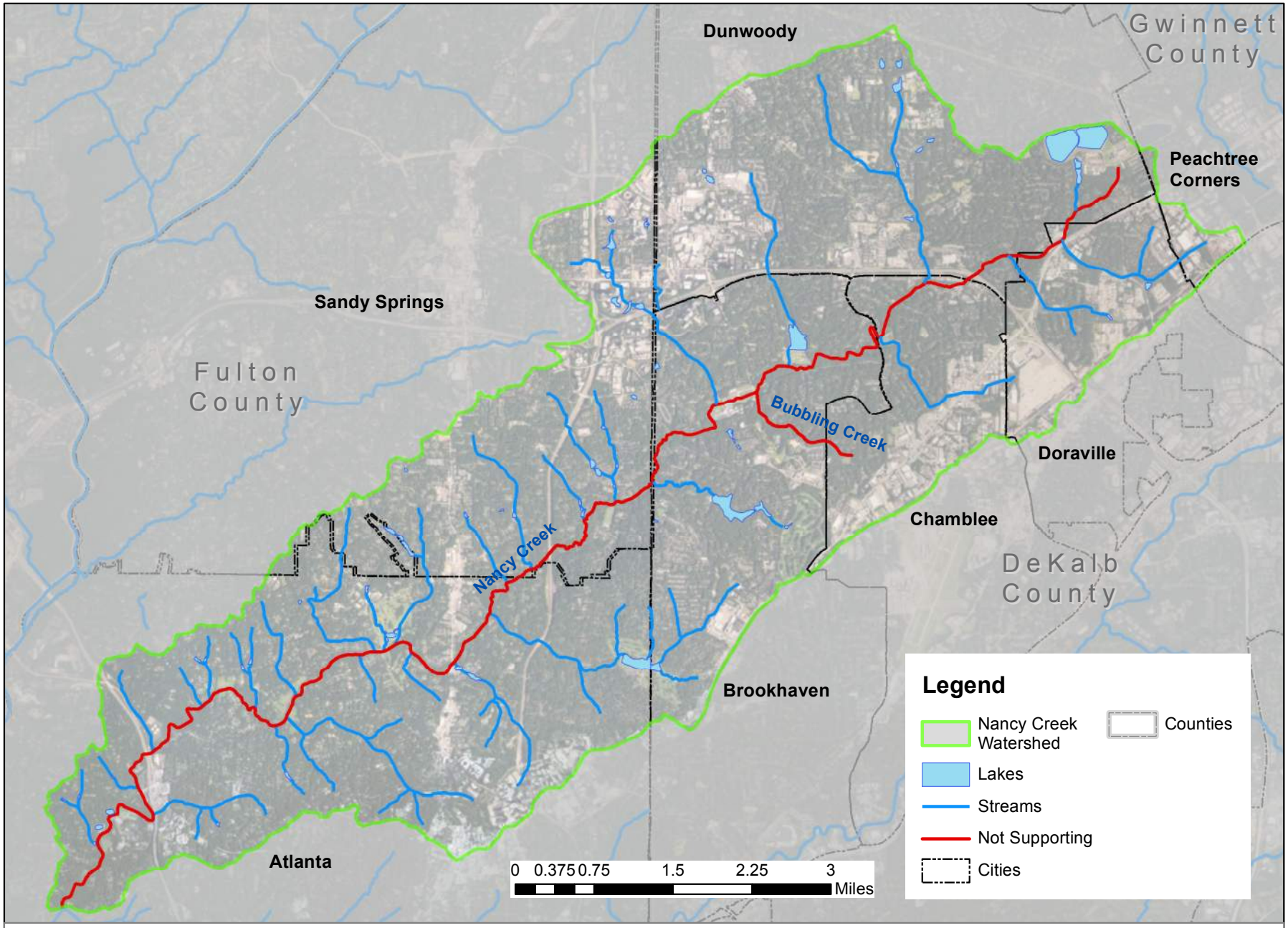


Figure 1-1: Impaired Waters in the Nancy Creek Watershed

1.1.2 Fish Biota

Nancy Creek is classified as impaired for biota impacts to fish communities. Generally, fish impacts are considered to be the result of poor fish habitat due to stream erosion and subsequent sedimentation. The 2008 TMDL shows that a 35.45 percent reduction in sediment load is needed to meet state standards in Nancy Creek.

1.2 Water Quality Data

In addition to the data used by the state to develop the 303(d) list of impaired waters, there are several local efforts to collect water chemistry and habitat data, as explained in the following two sub-sections.

1.2.1 Water Chemistry

There are eight locations within the watershed where local governments collect water chemistry data. The median fecal coliform bacteria values and the number of samples reflected in the median values are shown by sample location in Table 1-1. The locations are illustrated in Figure 1-2. It is important to note that the validity of the sampling data increases with an increase in the "count" or the number of sample data points. Water chemistry data can fluctuate quickly due to a variety of factors with a significant fluctuation from precipitation events and over short distances; therefore, data only reflects the conditions at the specific point and time the sample is collected.

Table 1-1 –Summary of Available Fecal Coliform Bacteria Data

Location	Jurisdiction	Count	Median Fecal Coliform Bacteria (col/ 100mL)
1. Nancy Creek at Binghampton Drive	Dunwoody	12	820
2. Nancy Creek at N Peachtree Road	Dunwoody	12	5,250
3. Nancy Creek at Chamblee Dunwoody Road	DeKalb County Watershed	138	1,400
4. Bubbling Creek at Harts Mill Road	DeKalb County Watershed	147	470
5. Nancy Creek at Johnson Ferry Road	DeKalb County Watershed	139	590
6. Nancy Creek at Peachtree Dunwoody Road	DeKalb County Watershed	32	1,200
7. Nancy Creek at Rickenbacker	Atlanta	142	525
8. Nancy Creek at W. Wesley	Atlanta	142	410

The summer standard (May through October) for fecal coliform bacteria is 200 colonies/ 100mL and the winter standard (November through April) is 1,000 colonies/ 100mL. Generally, the sampling results exceed the relevant standard more often than they meet the relevant standard. These results are consistent with the state's listing of impairment and the recommended reduction in the TMDLs.

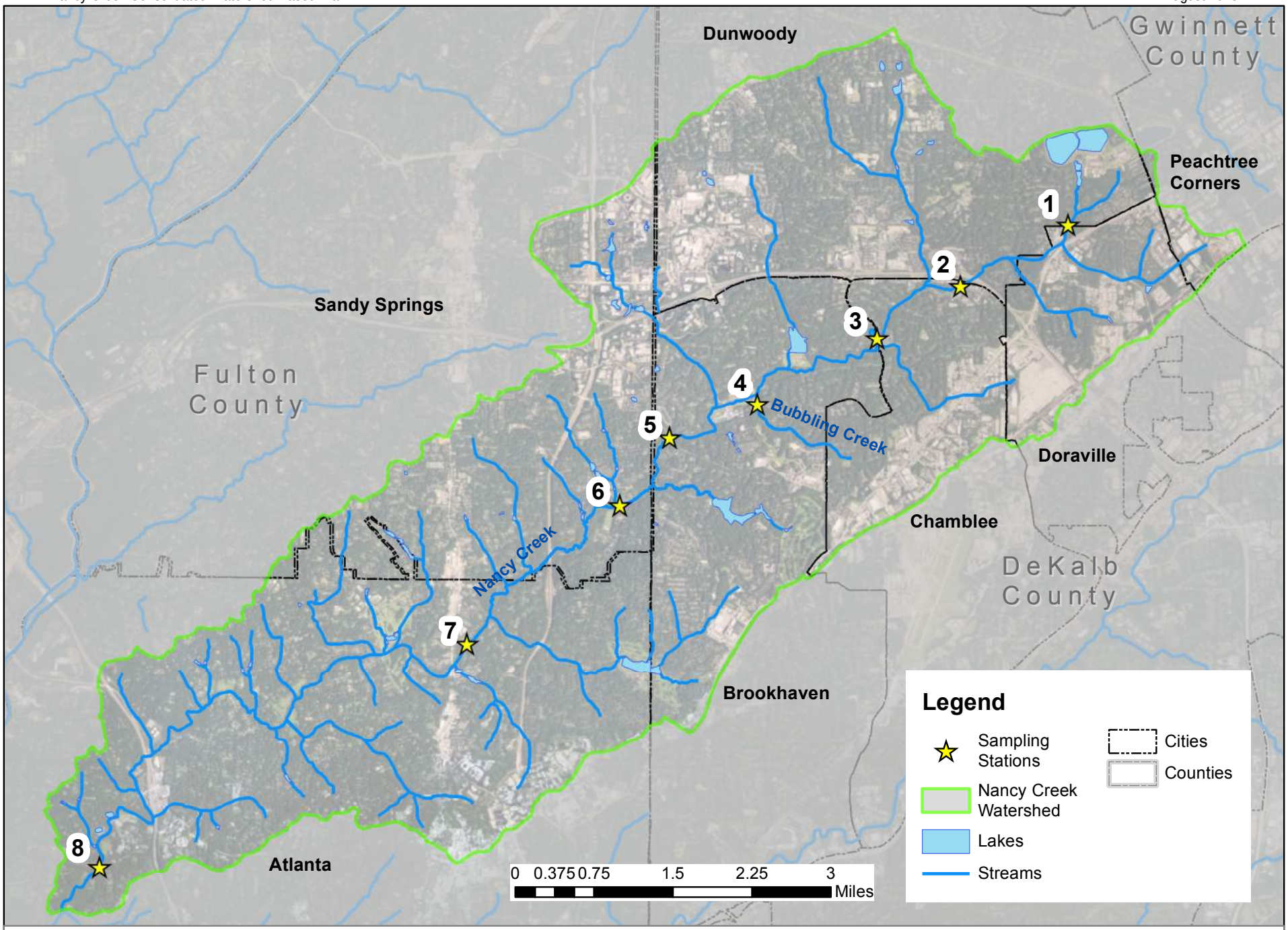
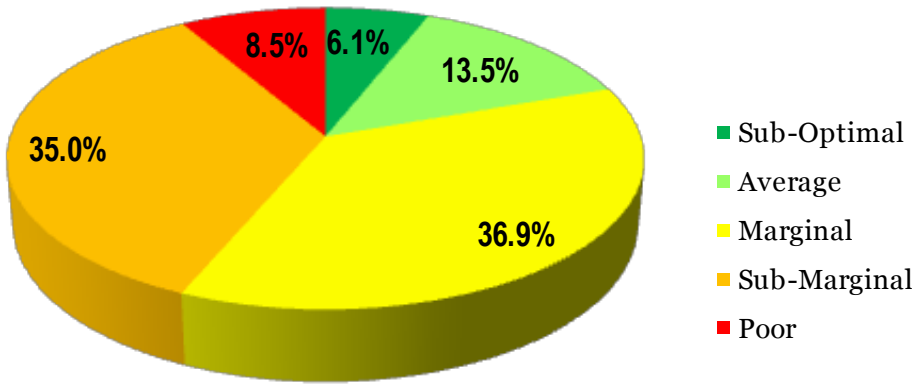


Figure 1-2: Water Quality Sampling Locations

1.2.2 Habitat Conditions

Habitat assessment data for the Nancy Creek watershed is available for portions of the watershed in the cities of Atlanta and Brookhaven. These habitat assessments follow the Georgia EPD *Standard Operating Procedure (SOP) for Macroinvertebrate Biological Assessment of Wadable Streams* in Georgia for high gradient streams. The Georgia SOP includes ten different categories, each that rank from 0 to 20, for a total possible score of 200. The highest scores are considered "optimal" (scores greater than 160) and scores below 60 are considered "poor". Whereas, water chemistry indicates water quality at that point in time, habitat data reflect longer-term conditions. The available habitat assessment results are illustrated in Figure 1-3. Figure 1-4 illustrates the distribution of habitat assessment scores across the habitat categories.

Figure 1-4: Distribution of Stream Habitat Assessment Scores



The available stream habitat scores show that there are habitat challenges throughout the Nancy Creek watershed, consistent with the state's fish biota impairment. While data is only available for a portion of the watershed, the data is consistent with field conditions observed throughout the watershed. The stream habitat conditions improve in areas where wider, protected stream buffers exist, reinforcing the importance of buffers. Additionally, the results show that stream habitat conditions improve downstream of poor habitat conditions; showing that Nancy Creek and its tributaries have the capacity to naturally restore under the right conditions.

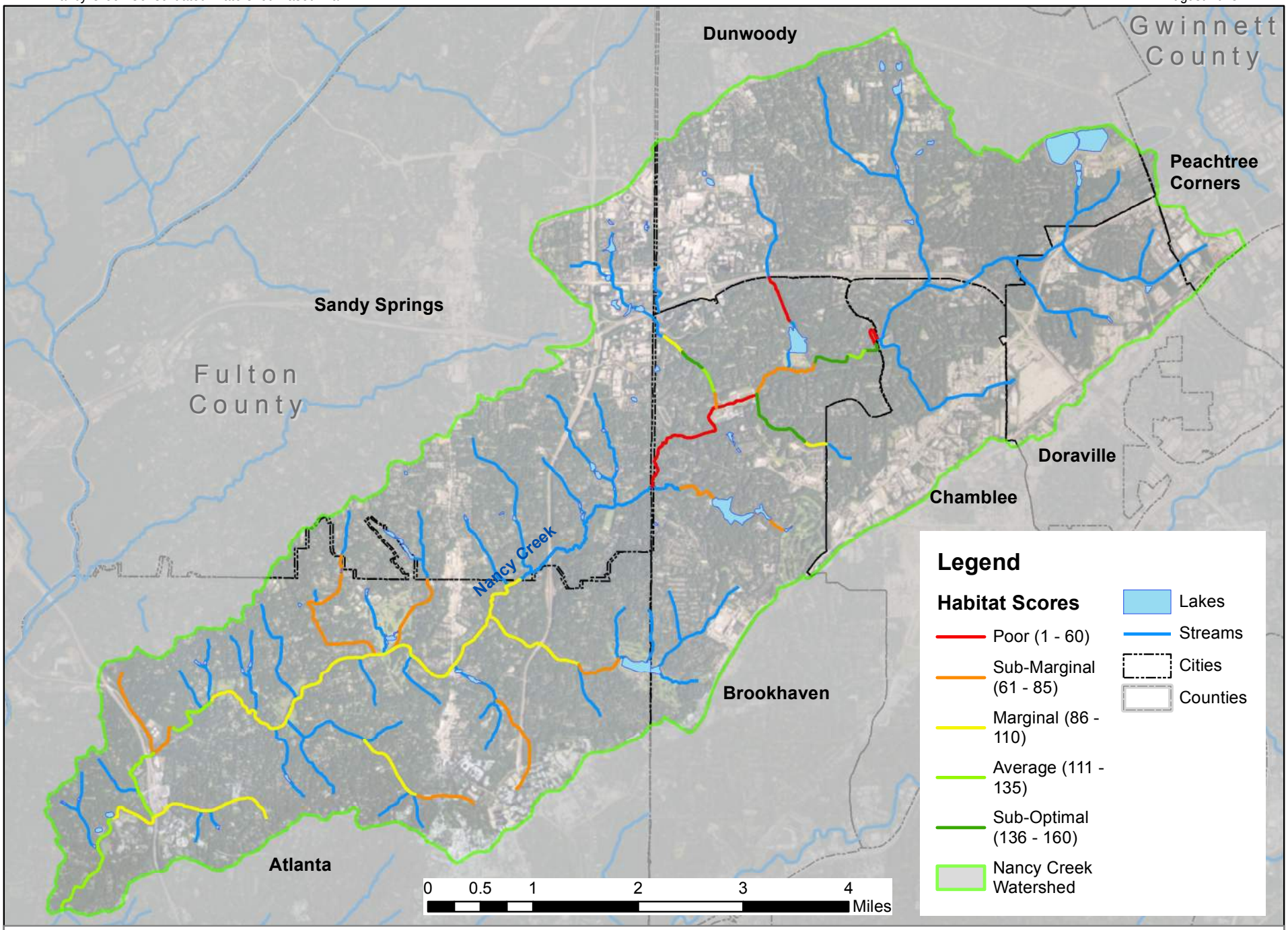


Figure 1-3: Available Stream Habitat Assessment Scores

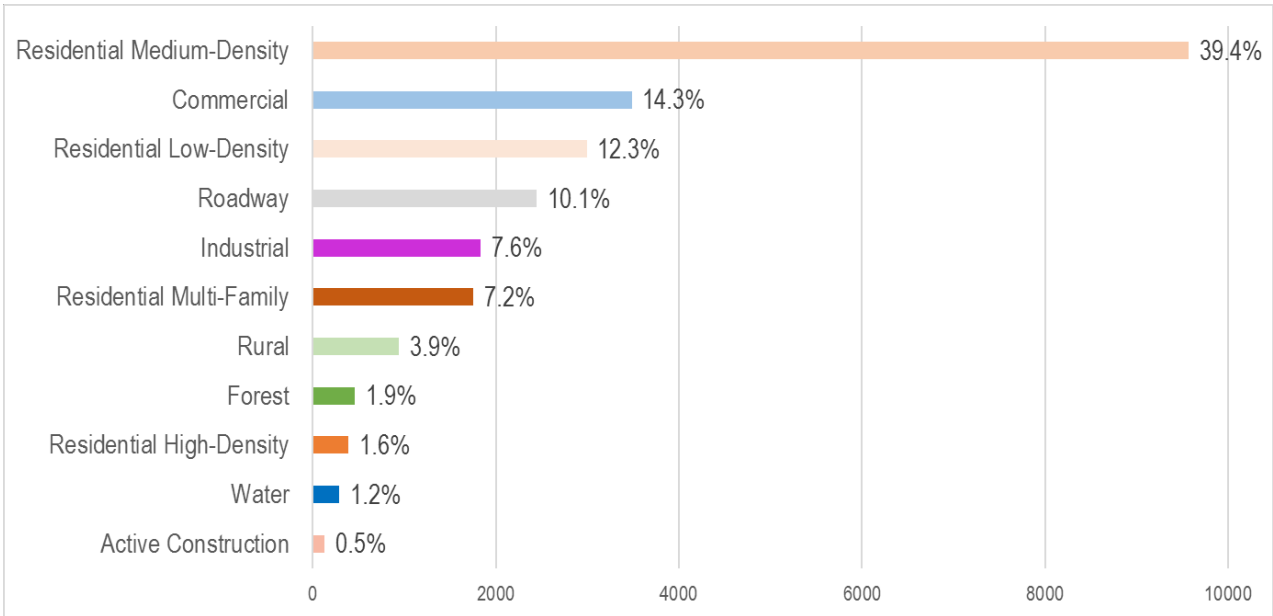
1.3 Land Use

Land use, and specifically the impervious area associated with land use, influences water quality. Impervious surfaces include areas that do not allow rainfall to infiltrate such as rooftops, driveways, and parking lots. Rainfall runs off of impervious surfaces in a greater quantity and at a higher rate, which negatively impacts stream integrity. There are a number of national studies that show that water quality and habitat conditions decline when impervious area exceeds 10 percent of the watershed and severe habitat degradation is anticipated when impervious area exceeds 25 percent of a particular watershed[ii].

Figure 1-5 illustrates the distribution of land use in the Nancy Creek Watershed based on land use data compiled by the Atlanta Regional Commission. Medium-density residential land use is the dominate category (42.9 percent), with commercial (14 percent), low density residential (13.4 percent), and multi-family residential (7.9 percent) comprising the major land use categories.

Figure 1-6 illustrates the land use across the Nancy Creek Watershed. Overall, the watershed is approximately 40 percent impervious, which is above the 25 percent threshold past which habitat degradation is expected. The density of land use is partly associated with the three (3) major highways (I-75, I-285, and GA-400), major commercial corridors (Roswell Road, Peachtree Road, and Peachtree Industrial Boulevard), and the commercial/office corridor around Perimeter Mall.

Figure 1-5: Distribution of Land Use in the Nancy Creek Watershed (acres)



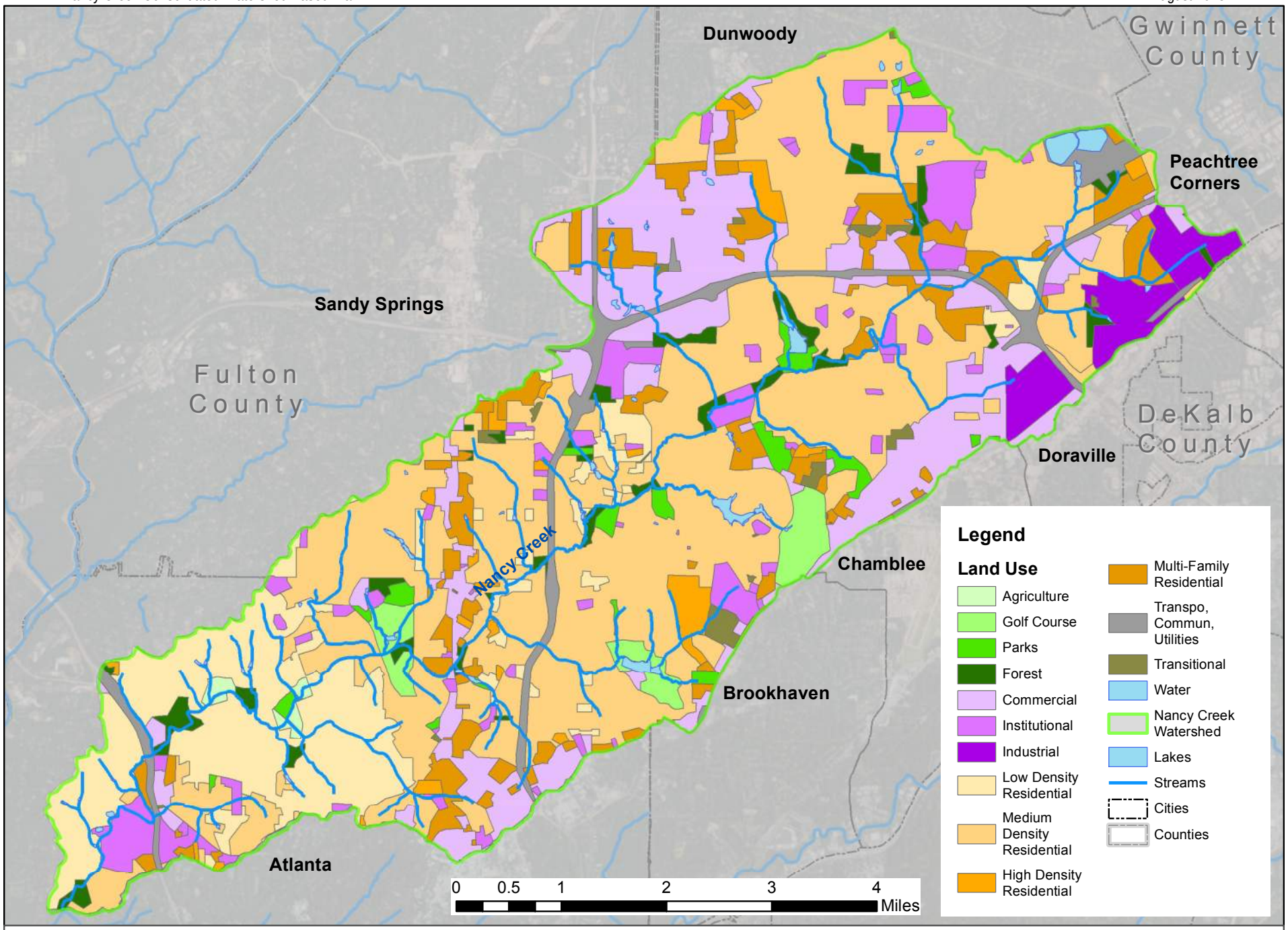


Figure 1-6: Map of Land Use in the Nancy Creek Watershed

1.4 Watershed Investigations

Visual investigations at thirty-seven (37) stations within Nancy Creek supplement the data available from the participating local governments. Some of the prevalent challenges within the watershed include:

- Stream buffer encroachment;
- Fallen trees blocking water flow and aggravating stream erosion;
- Incised stream banks and stream bank erosion;
- Lack of a functional floodplain; and
- Areas with repetitive loss flood properties.

Figure 1-7 illustrates the locations of the visual inspections for this WBP.

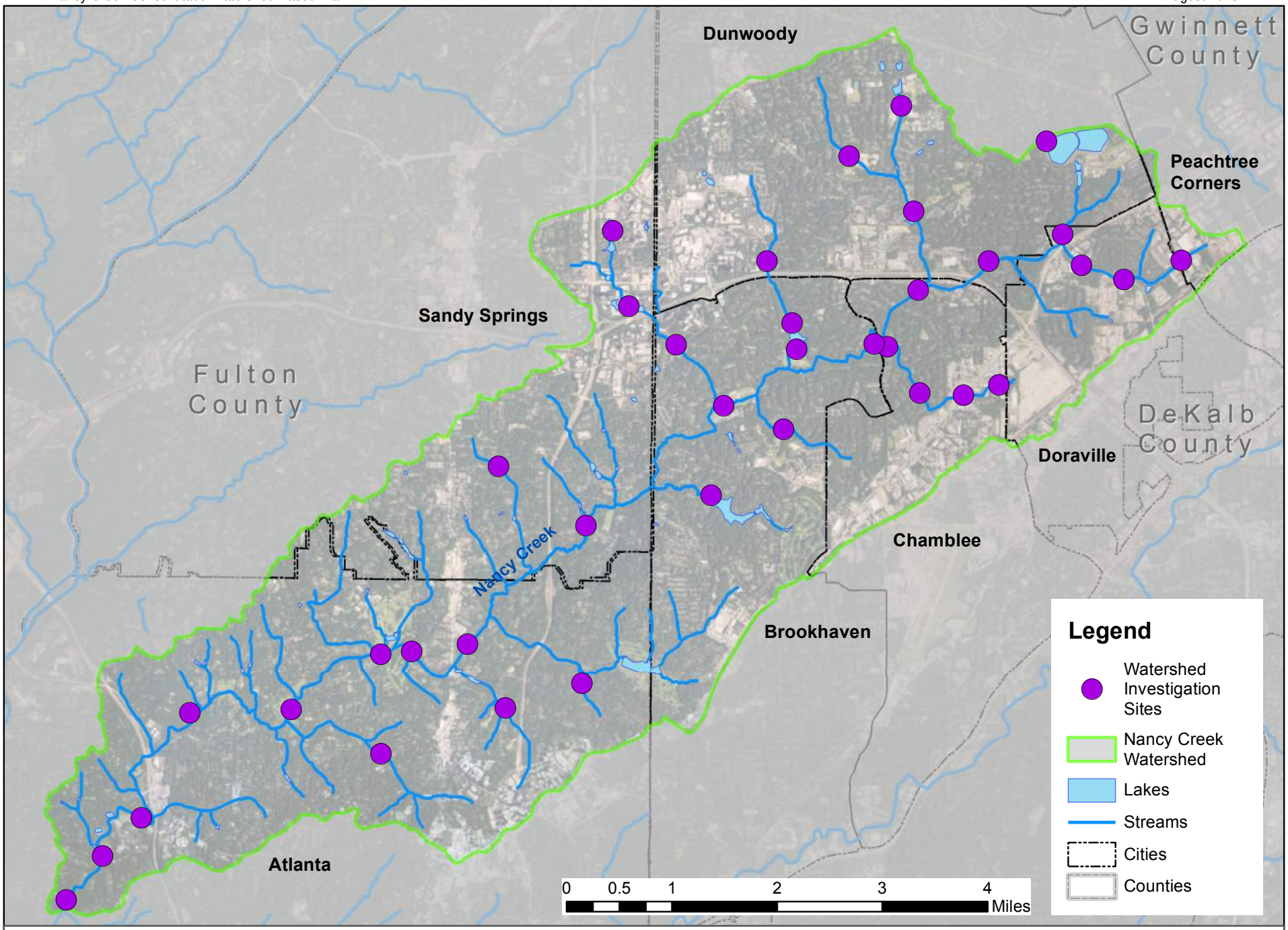


Figure 1-7: Map of Visual Inspections within the Watershed

2 Minimum Element #2: Pollutant Load Reduction Estimates from Best Management Practices

The Watershed Treatment Model (WTM), developed by the Center for Watershed Protection, is a spreadsheet-based model that estimates pollutant loads based on the land use and other watershed characteristics[iii]. The WTM also quantifies the potential pollutant load reductions associated with future watershed improvement projects or actions in the Nancy Creek Watershed.

The WTM is designed to:

- Estimate the pollutant loads associated with current and projected land use;
- Incorporate known existing pollutant sources;
- Estimate the benefits from identified future watershed improvement projects; and
- Estimate the benefits from identified redevelopment activities (for land developed prior to stormwater management requirements that will adopt stormwater management requirements).

The model is based on the Simple Method[iv] for pollutant load calculations, which estimates the pollutant loading based on pre-defined land use categories. The specific concentration assumptions and loading estimates in the WTM model are based on the National Stormwater Quality Database (NSQD). Due to the nature of this watershed analysis, the 2013 Off the Shelf Edition and the default options are used for this Plan.

The WTM estimates pollutant loads from primary and secondary sources. Primary sources include runoff based on the land use within the watershed. The secondary sources include sanitary sewer overflows (SSOs), on-site sewage disposal systems (OSDSs) (a.k.a. septic systems), and streambank erosion.

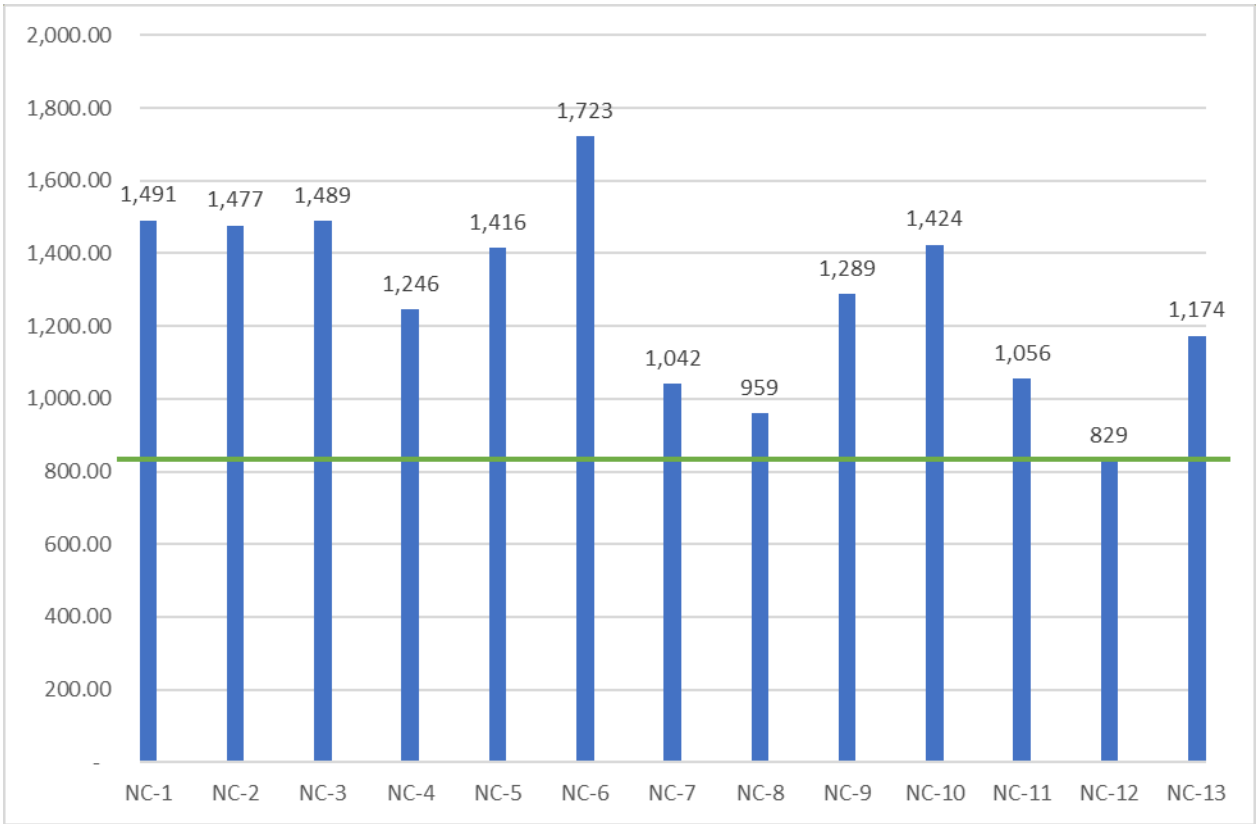
Future management practice load reductions are calculated with pollutant removal efficiencies based on the National Pollutant Removal Performance Database for Stormwater Treatment Practices[v] and research compiled for the model development. Future management practices include Best Management Practices (BMPs), stream restoration, and implementation of SSO reductions.

To better evaluate the pollutant loads and possible reductions, the Nancy Creek Watershed is divided into thirteen (13) sub-watershed areas. Figure 2-1 shows the sub-watershed areas. The watersheds are delineated using GIS topographical data and where possible, the delineation points are associated with existing water quality sampling stations.

2.1.1 Baseline Conditions Watershed Model Results

The baseline conditions watershed model results are in Figure 2-2 and Figure 2-3 by subwatershed. Figure 2-2 illustrates the TSS loads (lb/acre/yr) along with the watershed-wide loading rate needed to meet the 35% reduction in TSS, identified in the TMDL (green bar). Figure 2-3 illustrates the fecal coliform bacteria levels (billion colonies/acre/yr) along with the 85% reduction in loads, identified in the TMDL (green bar). These results show that the Nancy Creek Watershed is unlikely to meet state water quality standards unless actions are taken to improve existing conditions.

Figure 2-2. Existing Conditions TSS Loads (lb/acre/yr) by Sub-Watershed



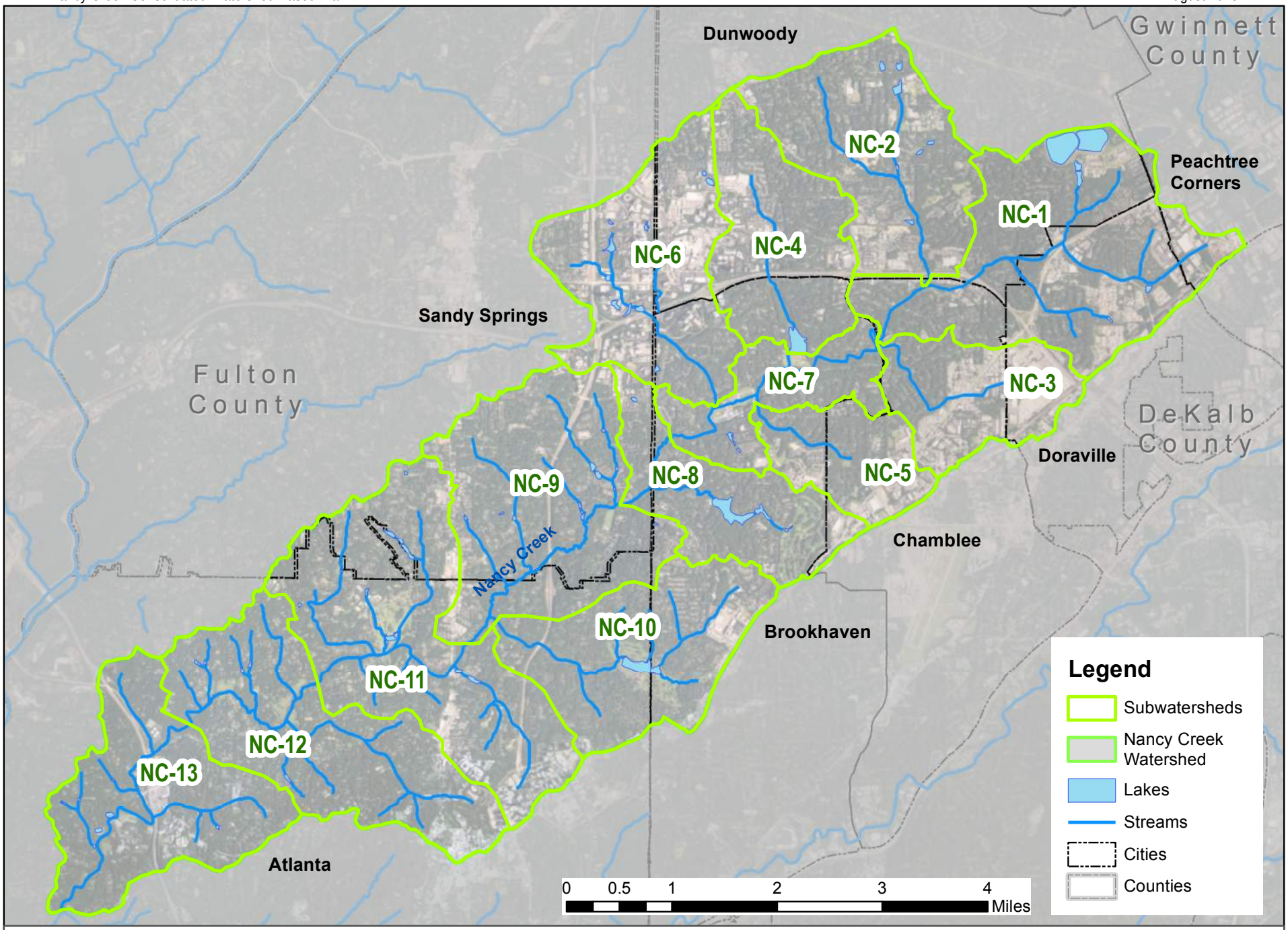
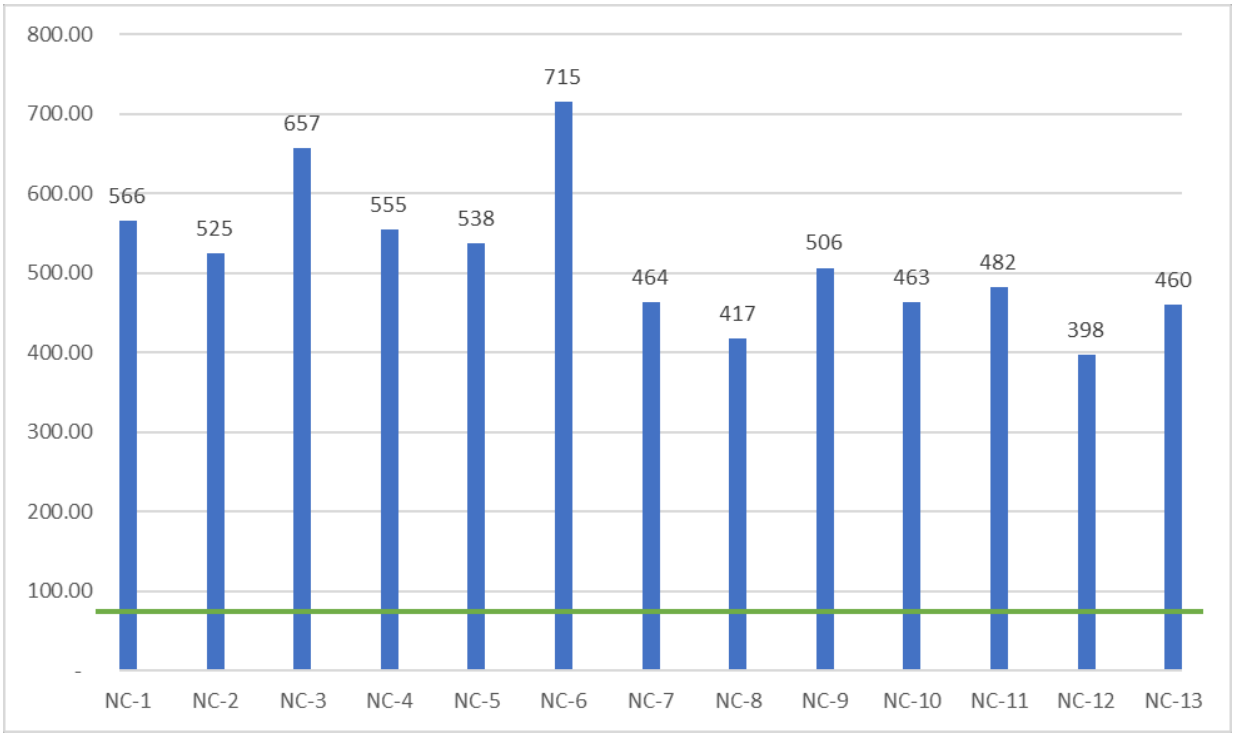


Figure 2-1: Nancy Creek Sub-Watersheds

Figure 2-3. Existing Conditions Fecal Coliform Bacteria Loads (billion colonies/acre/yr) by Sub-Watershed



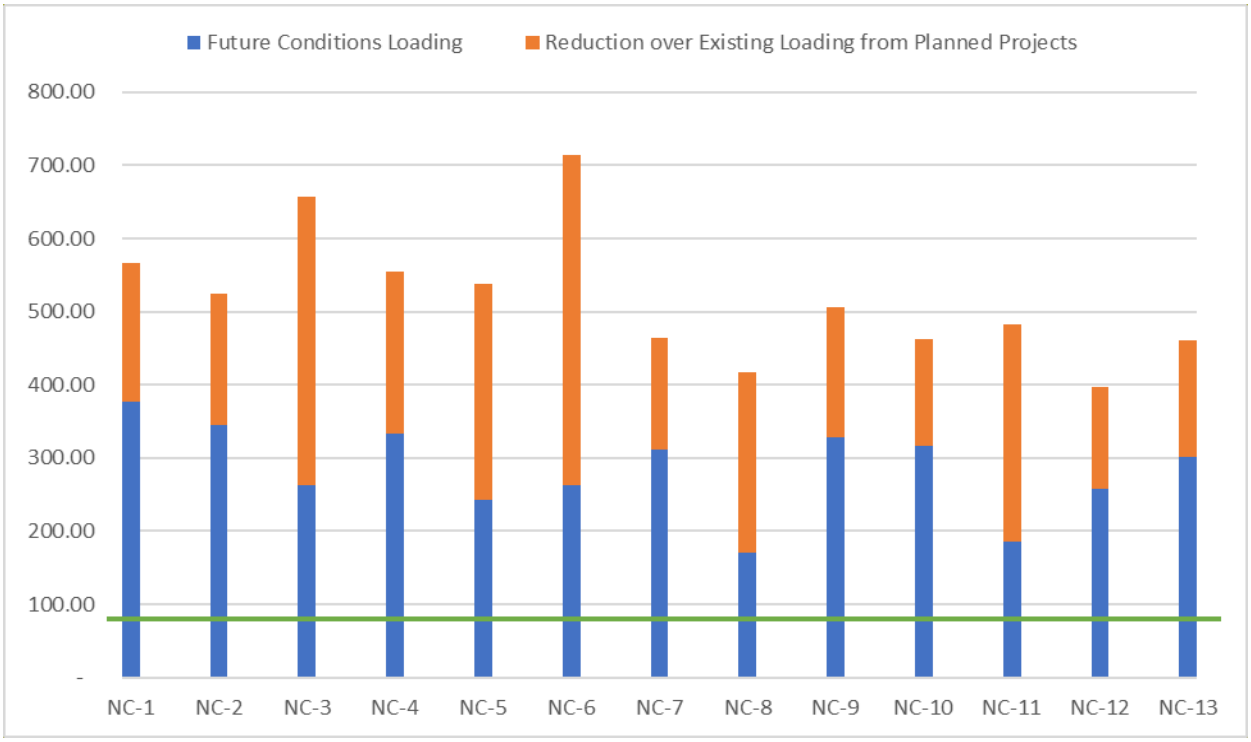
2.1.2 Future Conditions Watershed Model Results

The future conditions watershed model estimates the load reduction anticipated from planned projects and programs within the watershed. The identified programs and projects are presented in Section 3 of this Plan. The projects identified by local governments may reduce the TSS and fecal coliform loads as illustrated in Figure 2-4 and Figure 2-5.

The planned projects reduce the TSS load by an estimated 22-percent (Figure 2-4) and the fecal coliform bacteria load by an estimated 44-percent (Figure 2-5). While these load reductions are beneficial, additional watershed improvements beyond the projects identified in this Plan are likely needed in order to meet state water quality standards. This WBP recommends an adaptive management approach whereby the communities re-assess watershed conditions as projects are implemented and as currently unmanaged portions of the watershed redevelop. If the identified projects are insufficient to meet state water quality standards, there is a process to amend the Plan to add projects should new opportunities become available.

Figure 2-12. Future Conditions TSS Loads (lb/acre/yr)

Figure 2-13. Future Conditions Fecal Coliform Bacteria Loads (billion colonies/acre/yr)



3 Minimum Element #3: BMPs and Critical Target Areas for Installation

While Chapter 1 outlines the challenges facing the Nancy Creek watershed, Chapter 3 focuses on actions to improve the conditions in the Nancy Creek Watershed. The identified actions include programmatic recommendations as well as “on-the-ground” improvement projects. These projects are recommended however inclusion in this WBP does not imply local funding is available and/or there is local responsibility to implement these projects.

3.1 Recommendation Development

The programs, policies, and projects recommended in this Plan are based on the field reconnaissance, public input, existing plans and discussions with the participating jurisdictions.

It is important to note that the recommendations in this section are intended to improve watershed conditions. Recommendations in this Plan may not get implemented, because their implementation may be a private property responsibility and/or due to local funding limitations. The goal of this Plan is to create the framework that will allow Nancy Creek to meet state water quality standards which likely includes a level of private investment.

3.2 Recommended Watershed Programs and Policies

This section outlines watershed programs and policies that contribute to improvements in the Nancy Creek Watershed.

3.2.1 Continued Wastewater Permit Compliance

The sanitary sewer infrastructure in the Nancy Creek Watershed is managed and operated by the City of Atlanta and the three counties; DeKalb, Fulton, and Gwinnett. Wastewater operations are regulated by the Georgia EPD under the NPDES Municipal Wastewater program. There are no discharges of treated wastewater in the Nancy Creek Watershed.

All sewer systems have occasional sanitary sewer overflows (SSOs) where the volume of wastewater in the system exceeds the pipe capacity and/or clogs in the wastewater system cause service interruptions and may result in sewage flowing into local streams. All four wastewater service providers have programs to educate customers on Fats, Oils, and Grease (FOG), the main source of system clogs. They also have programs to inspect and rehabilitate

their aging sewer systems and protect sensitive infrastructure, such as stream crossings. This Plan recommends the continued implementation of these regulatory programs as one method of reducing the fecal coliform bacteria levels in the watershed.

3.2.2 Continued MS4 Regulatory Compliance

Each of the seven cities within the Nancy Creek Watershed are regulated by the MS4 permit program that requires actions that contribute to stream protection and enhancement. Examples of the permit requirements include stormwater system inspections and maintenance, inspections of industrial facilities and highly visible pollutant sources to reduce potential for stormwater pollution, and regulations associated with new and redevelopment projects in the watershed.

Local funds must remain dedicated to the ongoing implementation of these important programs and actions, which may limit the funds available for implementation of projects recommended in Section 3.3 of this Plan.

3.3 Watershed Improvement Projects

The watershed improvement projects (WIPs) are subdivided into two categories; stream restoration projects and best management practices (BMPs). The stream restoration projects include a range of actions from stream buffer protection to stream restoration and lake shoreline restoration projects. The BMP projects include new BMPs and the retrofit of existing BMPs. The planned projects are presented by community in Appendix A in addition to inclusion in this section by type.

3.3.1 Stream Restoration Projects

Stream restoration in the context of this report is the re-establishment of the structure and the function of ecosystems[vi]. More simply stated, stream restoration attempts to re-establish the healthy stream system to the extent practicable. In some instances, a stream will be returned to a fully-functioning ecosystem and in some instances the stream will be stabilized to prevent further damage. Most of the streams in the watershed experience active erosion and stream restoration projects reduce the erosion and the sedimentation seen in the Nancy Creek watershed.

Stream buffer protection and/or restoration also falls within the stream restoration project category. These projects are recommended in areas where the stream is stable, but the

presence of invasive species threaten the future integrity or the vegetation in the buffer has been removed and should be replaced. There is one project that recommends protecting the buffer from encroachment due to its headwater location.

The stream restoration projects recommended in this Nancy Creek WBP are illustrated in Figure 3-1. There are 52 stream or buffer restoration projects recommended that combined reflect approximately 14.5 miles of improved stream for a TSS loading reduction of approximately 5.8 million lbs/year.

Projects shown in this Plan contribute to improving the Nancy Creek watershed to meet the state's biota water quality standards. Inclusion in this Plan does not guarantee that public funding is available for these projects or that land and environmental permits will be able to be secured to execute these projects. The stream restoration projects are listed in Appendix A by community.

3.3.2 Best Management Practice Projects

Best Management Practices (BMPs) are practices that prevent or reduce the amount of pollution running off of developed land into our watersheds. There is a wide array of BMPs that prevent or reduce pollution and it is important to select BMPs based on the site-specific conditions. BMPs may include Green Infrastructure (GI)/ Low Impact Development (LID) and other practices that reduce runoff. Projects that reduce runoff are preferred, where feasible, as the stormwater runoff is treated as it infiltrates and does not aggravate localized flooding or streambank erosion in the watershed.

The BMP projects recommended in this Nancy Creek WBP are illustrated in Figure 3-2. There are 173 BMP projects recommended including 64 new BMPs and 101 BMP retrofit projects that combined provide an estimated TSS loading reduction of more than 1.1 million lbs/year.

Projects shown in this Plan contribute to improving the Nancy Creek watershed to meet the state's biota water quality standards. Inclusion in this Plan does not guarantee that public funding is available for these projects or that land and environmental permits will be able to be secured to execute these projects. The BMP projects are listed in Appendix A by community.

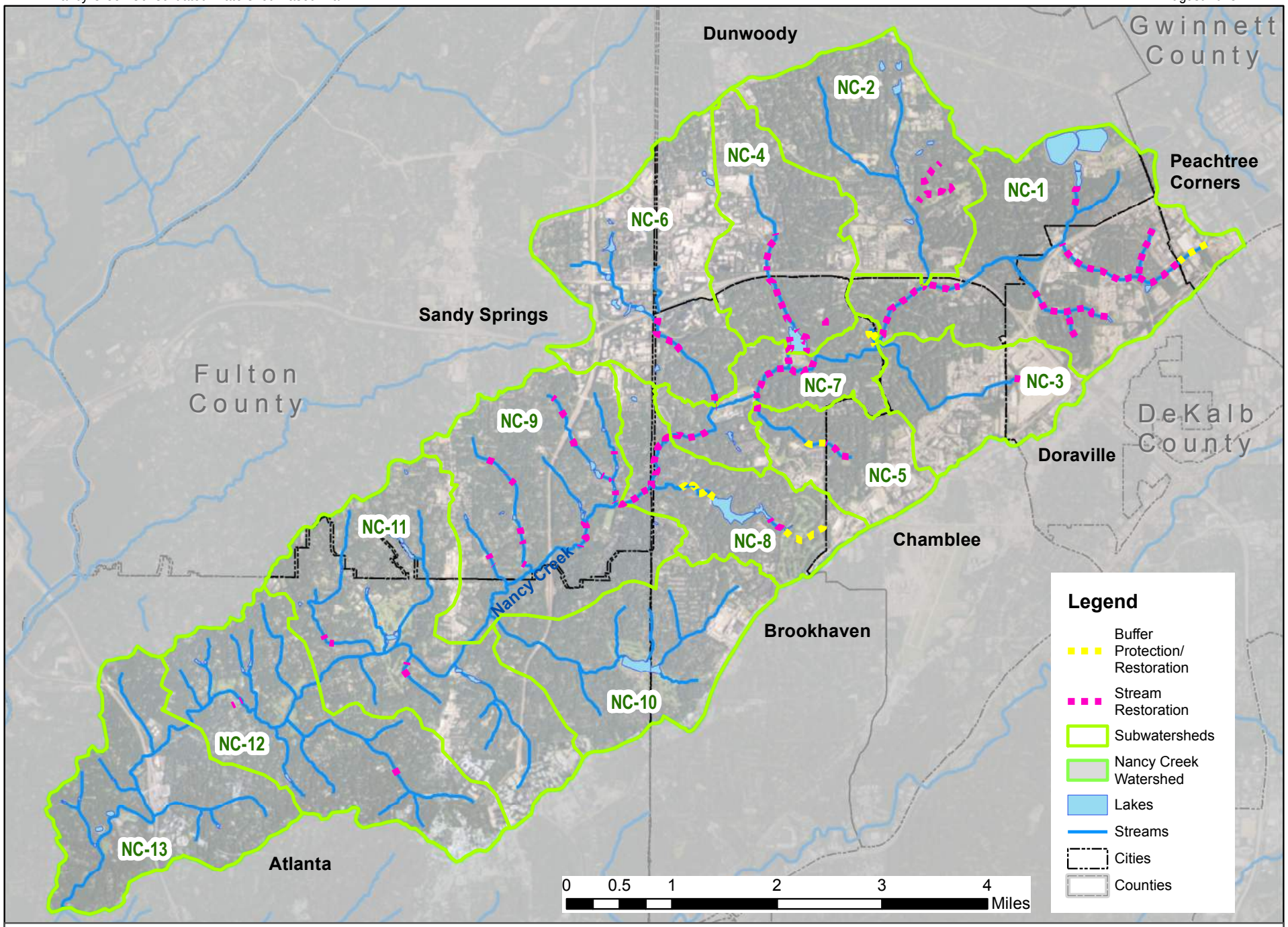


Figure 3-1: Recommended Stream Restoration Projects

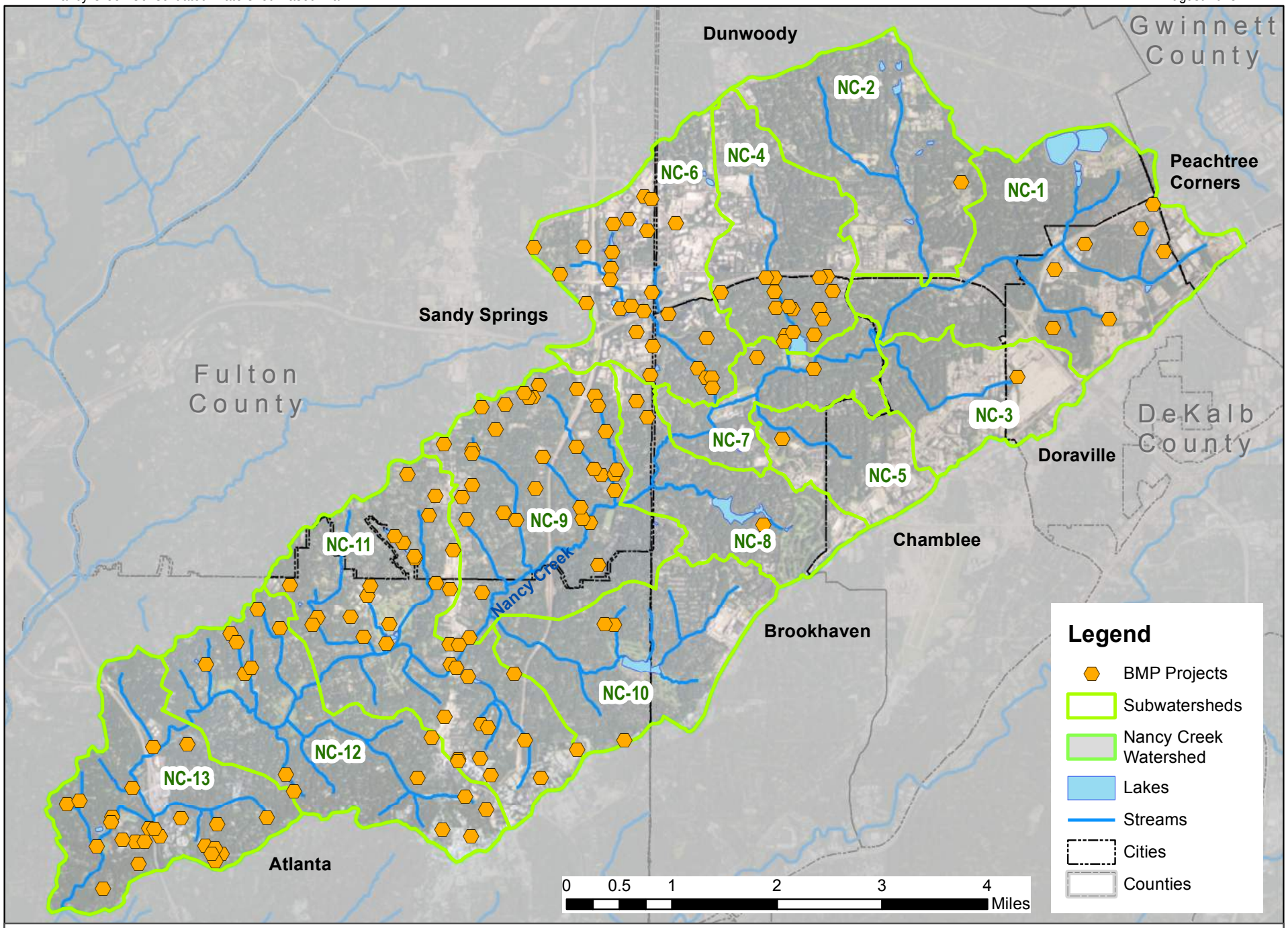
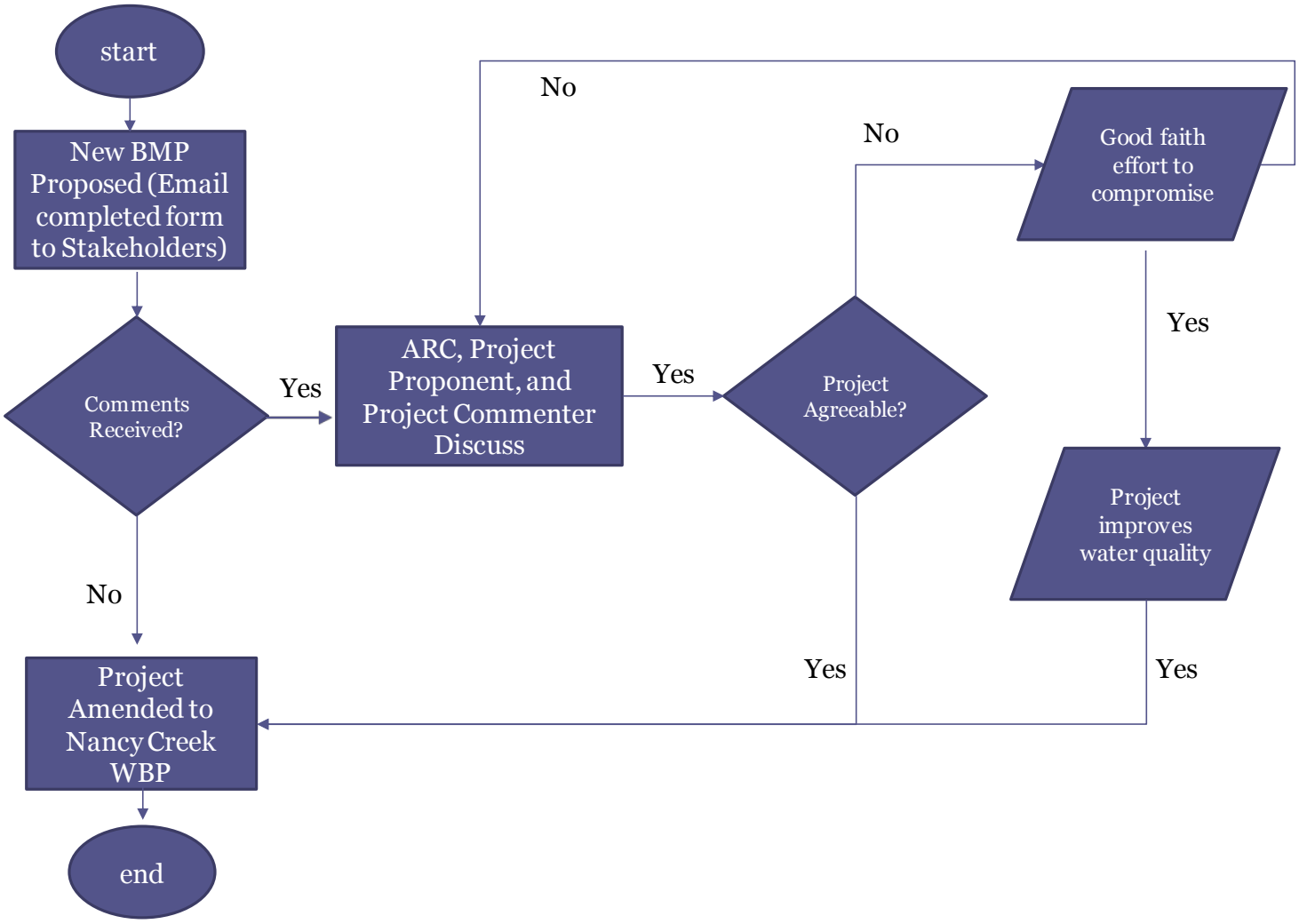


Figure 3-2: Recommended Best Management Practice Projects

3.4 Plan Revision Process

Additional projects are likely needed in order for the streams in the Nancy Creek Watershed to meet their state water quality standards, as demonstrated by the modeling results in Chapter 2. To ensure the continued collaboration and respect the multi-jurisdictional nature of this Watershed Based Plan, the Plan includes a Plan Revision Process. If a local government would like to pursue a watershed improvement project that is not expressly outlined in this Plan, they can follow the Plan Revision Process to amend that project into Plan, making that project grant-eligible. The Plan Revision Process is illustrated in Figure 3-3 and described below.

Figure 3-3. Plan Revision Process Flow Chart



To amend this Plan, the local government proposing a project that is not included in this WBP completes the Nancy Creek Watershed Based Plan Revision Form (Appendix B). The completed form is emailed to the other participating local governments, using the local contact list maintained by the Watershed Liaison and copying the Atlanta Regional Commission Liaison and the Watershed Liaison (described in Chapter 4). The receiving local governments have 60 days to respond back with any concerns regarding the inclusion of the proposed project in the WBP. If there are no objections to the project in writing (or email) within the one-month timeframe, the project is considered to be amended to the Plan.

If there are objections, the Atlanta Regional Commission (ARC) liaison will serve as a discussion facilitator between the proposing local government and the objecting local government. The goal of further discussion is to create a project plan that is acceptable to all of the local governments in the watershed. If an agreement is not possible and the proponent can demonstrate that the project will improve watershed conditions and good faith efforts were taken to work with other jurisdictions, the project is approved and amended to the Plan.

Plan revisions are one topic of conversation at the annual meetings (described in Section 7). This interim plan revision process is intended for adding projects to the recommended projects list. Other text changes should be deferred until the annual meeting unless there is a time-sensitive need to amend the WBP between annual meetings.

4 Minimum Element #4: Identification of Financial and Technical Assistance to Implement BMPs

This section outlines the financial and technical assistance that is important to the long-term implementation of this Nancy Creek Watershed Based Plan. The recommended projects in this Plan are estimated to cost $101 million and will require the financial participation of federal, state, and local governments as well as private property owners. This Plan also recommends technical support for multi-jurisdictional coordination and regional educational efforts.

4.1 Financial Assistance

The projects identified in this plan reflect a significant investment in the watershed, upward of $101 million. Participation from local, state, and federal sources of funding as well as from private property owners and non-profit agencies is needed to meet the watershed goals. This section outlines some sources of project funding.

4.1.1 Grant Funding

Grant funding includes federal and state funds that are allocated toward a priority, typically on a competitive basis and typically requiring local match funds. Grants are typically a gift that does not need to be repaid. Some grant funds are only available to a local government entity and some grant funds will allow non-profit and other agencies to apply.

This Plan intends is to meet the criteria for most grant applications. There are too many grant funds to provide a comprehensive list in this Plan, however some of the more commonly used grants are listed in Table 4-1 along with a summary of their current grant criteria. Grant criteria often change, so it is important to reach out to grant agencies prior to applying in order to strengthen the quality of the application.

Table 4-1 – Grant Funds Appropriate for Recommended Projects

Grant Source	Details
EPD 319(h) NonPoint Source Pollution Grants (Federal funds)	Competitive grant that awards up to 60 percent federal share with a 40 percent local match. Additional points are awarded for projects implementing a project in a WBP, projects with more than a 40-percent match, and projects that address an impaired waterbody. Application deadline is typically late October/ early November. The award must be to a local government, which may collaborate with partner agencies.
National Fish & Wildlife Foundation Five Star & Urban Water Restoration Program	Competitive grant with a 50 percent local cost share. The grant funding is a mix of private and federal funds. Awards are typically $30,000. The project must meet five specific criteria: on-the-ground restoration, minimum of 5 community partners, environmental outreach, measurable results, and sustainability. A city or a 501(c) can apply. Grants are typically due in February.
EPA Region 4 Environmental Education Grant	Competitive grant program that supports locally-focused environmental education projects that increase public awareness and knowledge about environmental and conservation issues and provide the skills that participants in its funded projects need to make informed decisions and take responsible actions toward the environment. Grants require a minimum 25% local match and recommend partnerships. Grant awards typically range between $50,000 to $100,000 (Federal share). Grant application timeframe is typically January through April.
Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP)	Competitive grants to implement long-term hazard mitigation measures after “major disaster declarations” with a 75% federal and 25% local match. The goal of the HMGP is to reduce the loss of life and property due to natural disasters. There must be a federally-declared disaster and the project must be included in the local Hazard Mitigation Plan to be eligible.

4.1.2 Loans

Loans are beneficial when a community wants to fund a large capital project and is able to pay back the borrowed money over a period of time. The Georgia Environmental Finance Authority (GEFA) offers flexible loans with competitive interest rates for water, wastewater, and stormwater infrastructure projects. Any of the projects included in this Plan could be eligible for a low-interest loan. Loans allow communities to expedite projects, allowing the community to enjoy the benefits sooner. The local government pays the loan back over time and should evaluate how the annual debt service payments might impact funds available for stormwater infrastructure and other watershed priorities. Currently, GEFA’s Clean Water State Revolving

Fund (CWSRF) provides federal funds for wastewater and stormwater projects with up to $25M available per year. The 20-year interest rate is currently 2.25% and there is a 1% closing cost[vii].

4.1.3 Private Funding Sources

There are a number of private funding sources including private foundations that fund watershed improvement projects. The regional and comprehensive nature of the Nancy Creek WBP may make the projects in this Plan more attractive to these private funding partners. These funding sources may be associated with non-profit agencies, family foundations, or corporation foundations. There are companies who specialize in fundraising and helping match projects to funds and are familiar with the intricacies of each funding source.

In addition to private foundation funds, there is currently private investment in the Nancy Creek watershed on most redevelopment projects in the watershed. Portions of the watershed were developed prior to modern post-construction stormwater management requirements. As these properties redevelop, they must comply with the requirements of the Georgia Stormwater Management Manual and therefore must address water quantity and water quality from the site. Redevelopment of land that does not have stormwater management may help improve water quality in the Nancy Creek Watershed.

4.1.4 Other Local Funding

Some of the cities in the watershed have stormwater user fees that fund most of the watershed and stormwater projects within the jurisdiction (Chamblee, Doraville, Dunwoody, and Sandy Springs). The other cities rely on general funds to fund most of the watershed and stormwater projects. DeKalb, Fulton, and Gwinnett counties and the City of Atlanta operate the water and wastewater systems within their respective service areas and within their portion of the Nancy Creek watershed. The wastewater system can have an effect on the watershed, and specifically the fecal coliform loads. The water and wastewater systems are funded by user fees. Water and wastewater user fees are occasionally used for watershed projects.

4.2 Technical Assistance

There are four areas where technical assistance is recommended to support the implementation of the Nancy Creek WBP.

1) **Georgia EPD Biota Sampling.** Nancy Creek is classified as impaired for not meeting the fish biota standards. EPD does not allow local governments to collect fish habitat data in

order to remove a stream segment from the impaired waters list. The communities within the watershed will rely on Georgia EPD to collect fish data to determine whether the implementation of the recommended projects is improving habitat conditions. The communities in the watershed may ask Georgia EPD to sample Nancy Creek periodically to see if the successful implementation of recommended projects improves habitat conditions. This sampling is part of the adaptive management strategy.

2) **ARC to serve as discussion facilitator.** The ARC has agreed to serve as a discussion facilitator if there is any controversy tied to proposed Plan revisions. All of the local governments in the watershed are part of the ARC service area and this role is consistent with the other duties of the regional agency.
3) **ARC Clean Water Campaign.** The ARC's Clean Water Campaign develops regional water-related educational materials through the regional and collaborative effort. This Plan suggest that ARC has the expertise and regional funds to evaluate and, if appropriate, expand the educational messages to include the topics identified in Section 5.
4) **Watershed Liaison.** For the first five years following adoption of this Plan, SWP&E will serve as a Watershed Liaison to plan and lead the annual coordination meetings identified in Section 7. During this timeframe, the local governments will evaluate other models for executing the duties of the Watershed Liaison.

4.2.1 Foster Additional Partnerships

This Nancy Creek Watershed Based Plan recommends fostering and expanding existing partnerships in order to expedite implementation of the recommendations. These partners may provide financial and/or technical guidance to help improve the Nancy Creek watershed.

- Metro Water District
- Environmental Protection Division
- Non-Profit Watershed Groups
- Non-Profit Homeowners Groups
- GDOT
- CIDs
- Public & Private Schools
- Other Governmental Entities (Library Systems, Colleges, etc.)

5 Minimum Element #5: Education and Outreach and Public Involvement

This section outlines the public input opportunities during the Nancy Creek Watershed Based Plan development process. This section also recommends continuing the ongoing education and outreach programs as well as recommended new educational messages that may be integrated into local programs in the future.

5.1 Public Input

Public input is an important element of this Watershed Based Plan. The first public meeting, held on October 11, 2017, presented the information gathered within the watershed and offered an opportunity for the public to add or amend this information. There were 21 attendees at the first public meeting. The major concerns shared by the attendees included:

- **Downed trees and impacts to downstream property owners.** There is a general lack of understanding that private property owners are responsible for removing downed trees that originate on their property. Additionally, many didn't realize that the center line of the creek is often the property line. There was a suggestion for additional public education. Some public meeting attendees felt the burden of tree removal was too great for individual property owners.
- **Specific neighborhood concerns.** There were several neighbors with concerns about erosion within the watershed; both new development sites not complying with laws and then instream erosion compromising stream bank integrity.
- **Flooding.** Several residents suffer from flooding, both flooding of yards as well as periodic inundation of a dwelling. There was interest in the overlap between the Watershed Based Plan and projects to address flooding.
- **Trash and Debris.** One attendee commented that trash and debris coming off of GA-400 was a problem.
- **Local Watershed Improvement Plans versus the regional Watershed Based Plan.** There was concern that the implementation of local plans would be stalled until the completion of the regional plan. The local plan implementation is not being stalled by this regional plan.

The challenges presented by the public are considered part of the overall assessment of the watershed conditions. The understanding of the challenges within the Nancy Creek Watershed provide the foundation for the watershed projects that are described in Section 3.0.

The second public meeting, held on August 20, 2018 presented an overview of the draft Nancy Creek Watershed Based Plan and offered the public an opportunity to suggest changes. There were 5 attendees at the second public meeting. There were not any changes recommended to the draft WBP.

5.2 Continued Public Education and Outreach

Public education and outreach activities are an MS4 permit requirement for the seven cities within the watershed. The City of Atlanta and the three counties also conduct education and outreach associated with their sanitary sewer programs. This Plan recommends allowing each local government the flexibility to implement their public education and outreach program to meet their specific needs and interests. This section focuses on new educational messages that are of general interest across the Nancy Creek Watershed that may be integrated within each local program, as appropriate.

5.2.1 Recommended New Educational Messages

There are two new recommended educational messages. This Plan suggests that the communities work through the ARC's Clean Water Campaign program to develop these messages, materials, and/or training.

- **Private property stream responsibility and management:** Many attendees at the first public meeting own streamside property and struggle with streambank erosion that results in fallen trees. The fallen trees clog the stream, aggravate localized flooding, and can accelerate streambank erosion. The residents were generally unaware that stream management and maintenance was private property responsibility. Both the residents and local government representatives agree that better education on streamside management and private property responsibility is needed. The local government representatives recommend that the Metro Water District Education Subcommittee develop educational messages and materials to be distributed throughout the watershed.
- **Realtor education:** The local government representatives recommend expanding the ongoing realtor education programs related to septic systems to include stormwater

topics. For example, ensuring realtors can explain the maintenance responsibilities associated with stormwater controls, understand the liabilities associated with floodplain and floodway areas, and the responsibility for streamside management. Residents are sometimes given misleading or inaccurate information regarding their responsibilities. Expanding the successful septic system educational offerings to include an overview of these topics would reduce these issues in the Nancy Creek watershed. The Metro Water District leads the septic system realtor education efforts.

6 Minimum Element #6: BMP Implementation Schedule

The implementation plan includes the anticipated timeframe for implementing the recommended actions in this WBP. All of the actions are subject to local funding and staff availability; therefore, adjustments to the implementation timing are expected. The timing adjustments will be discussed annually as part of the ongoing watershed coordination (Section 4.1.2).

Category	Action	Year(s)
3.2.1. Continued Wastewater Permit Compliance	Continued permit compliance including sampling outlined in the Watershed Protection Plan.	Ongoing
3.2.2. Continued MS4 Permit Compliance	Continued permit compliance, including sampling outlined in the Stormwater Management Plan.	Ongoing
3.3 Watershed Improvement Projects (Stream Restoration and BMPs)	Implement two of the recommended projects consistent with local plans.	2019 – 2025
4.1.1 Seek Financial Assistance	Apply for grant funds or solicit funding for five projects to assist with project implementation.	2019 – 2025
5.2 Continued Public Education & Outreach	Continue programs and coordinate new messages with the Clean Water Campaign.	Ongoing and by Year 3
7.1.1 Coordination Meetings	Participate in annual meetings.	Annually
9.1- 9.3 Submit Data for the Watershed Metrics to the Watershed Liaison	Submit available metrics to be discussed at the annual meetings.	Annually

7 Minimum Element #7. Interim Milestones to Determine Progress of BMP Implementation

This section provides an overview of the annual coordination meeting as an opportunity to network within the watershed, celebrate progress toward Plan implementation, and plan for any next steps.

7.1.1 Annual Watershed Coordination

The seven cities and three counties met three times throughout the development of this Plan. Several of the local government coordinate, typically within a county boundary, but this is the first collaborative effort across the Nancy Creek watershed. This Plan recommends annual meetings to assess progress toward implementation and look for collaboration opportunities that would benefit the Nancy Creek Watershed. A template for the Annual Meeting is included in Appendix C and may be modified by the local governments, as needed.

The first five years, these meetings will be planned and facilitated by Sustainable Water Planning & Engineering (SWP&E). During this time, the participating governments will evaluate pooling resources to hire a part-time or full-time Nancy Creek Watershed Coordinator and/or develop a rotating schedule of responsibility where each jurisdiction would have a person dedicated to serving in this capacity during their year.

One option that will be evaluated in the first five years includes earmarking a small amount of funding in all of the grant applications submitted within the watershed for the position. The funds from successful watershed grants could be pooled in order to fund a portion of a position at one of the participating local governments, to hire a shared position, or possibly to fund a portion of a position at the Atlanta Regional Commission.

8 Minimum Element #8: Criteria to Monitor and Assess BMPs

Recent research suggests that monitoring individual BMPs to determine their effectiveness at reducing pollutant loads to a watershed is difficult and/or ineffective[viii]. Some of the challenges of assessing effectiveness of individual BMPs includes (1) the effectiveness of individual BMPs in reducing pollutant loads is often over-estimated, (2) the lag time between BMP implementation and the resulting improvement in water quality, and (3) natural fluctuations in water quality make it difficult to isolate water quality improvements.

Given the limited funding available for implementation, this Plan does not assign specific monitoring criteria for different BMPs. Local governments may choose to implement pre- and post-implementation monitoring to assess the effectiveness of a given BMP. Some level of monitoring may be required based on a project's funding source, but none is required by this Plan. Section 9 recommends continuing the current stream sampling programs and Section 4 notes requesting technical assistance from EPD to sample fish habitat conditions in Nancy Creek, as projects are implemented. These sampling results may show that project implementation is improving watershed conditions. No additional monitoring or assessment is deemed necessary as part of this Plan.

9 Minimum Element #9: Component to Determine Plan Implementation Effectiveness

There are three categories of metrics recommended to track the implementation and effectiveness of the Nancy Creek Watershed Based Plan. The three metric categories include watershed data, project data, and engagement data. These categories and the specific metrics are outlined below.

9.1 Watershed Data Metrics

The watershed metrics include stream water chemistry data that demonstrate whether the trends are improving, declining, or remaining the same. There are currently eight (8) water chemistry sampling locations in the Nancy Creek Watershed with good coverage along Nancy Creek (Figure 9-1). These stations are described in Section 1. No new chemical sampling stations are recommended. The participating local governments will submit TSS and fecal coliform bacteria data to the Watershed Liaison so that the trends can be discussed at the annual meeting.

EPD (or its designee) periodically samples fish in streams throughout Georgia and identifies streams that are impaired based on a low fish index score. If EPD samples fish, they will provide the data to the Watershed Liaison and it will be shared at the Annual Meeting.

9.2 Project Data Metrics

The project data metrics focuses on the number of recommended projects that are completed during that year. Each local government will supply a list of the completed projects to the Watershed Liaison and they will be shared with the others at the annual meeting. Where possible and relevant, the annual meeting may include a field trip and tour of completed projects. Lessons learned may also be shared with the other participants. If possible, the estimated pollutant load reduction associated with the project will be documented as well.

- Number of BMP projects and estimated load reductions (if available)
- Number of miles of stream restored and estimated load reductions (if available).

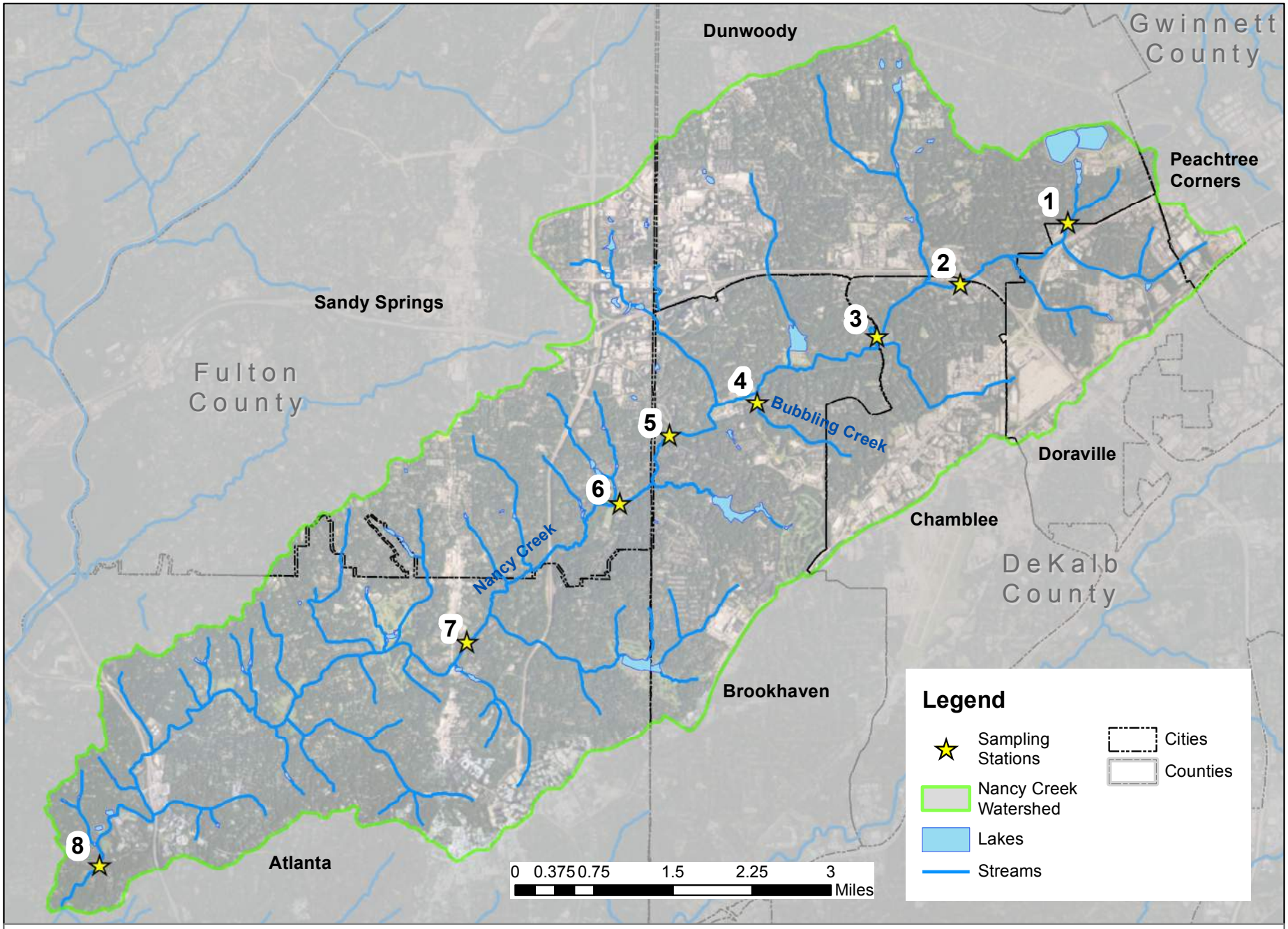


Figure 9-1: Existing Water Chemistry Sampling Locations

9.3 Engagement Data Metrics

Engaging community members and community groups is one method to accelerate the implementation of this Plan. Therefore, tracking the local participation in watershed activities can demonstrate Plan implementation.

- **Number of people/groups engaged in the watershed.** This can include people or groups participating in a public involvement activity (AAS, river cleanup, stormdrain stenciling, invasive species pull) or attendees at watershed-related meetings. Each local government will be asked to submit the number of people/groups participating to the Watershed Liaison before each annual meeting.
- **New education messages.** The Plan recommends three new educational messages for the Atlanta Regional Commission and the Clean Water Campaign efforts. The progress toward developing materials is subjective. If the Clean Water Campaign develops materials, the Watershed Liaison will document the estimated audience reached.
- **Number of communities participating in the annual meeting.** The ongoing coordination throughout the watershed is an important recommendation in this Plan. The Watershed Liaison will report annually on the number of communities participating in the annual meetings.

Appendix A: Community Summaries

Atlanta Recommended Projects

The City of Atlanta projects are from the Nancy Creek Watershed Improvement Plan (WIP) (April 2016). There are 83 recommended projects which include:

- 5 stream restoration projects
- 41 new BMP projects
- 37 BMP retrofit projects

Additional information on these projects can be found in the City's WIP.

The projects are illustrated in Figure A-1 and listed in Table A-1.

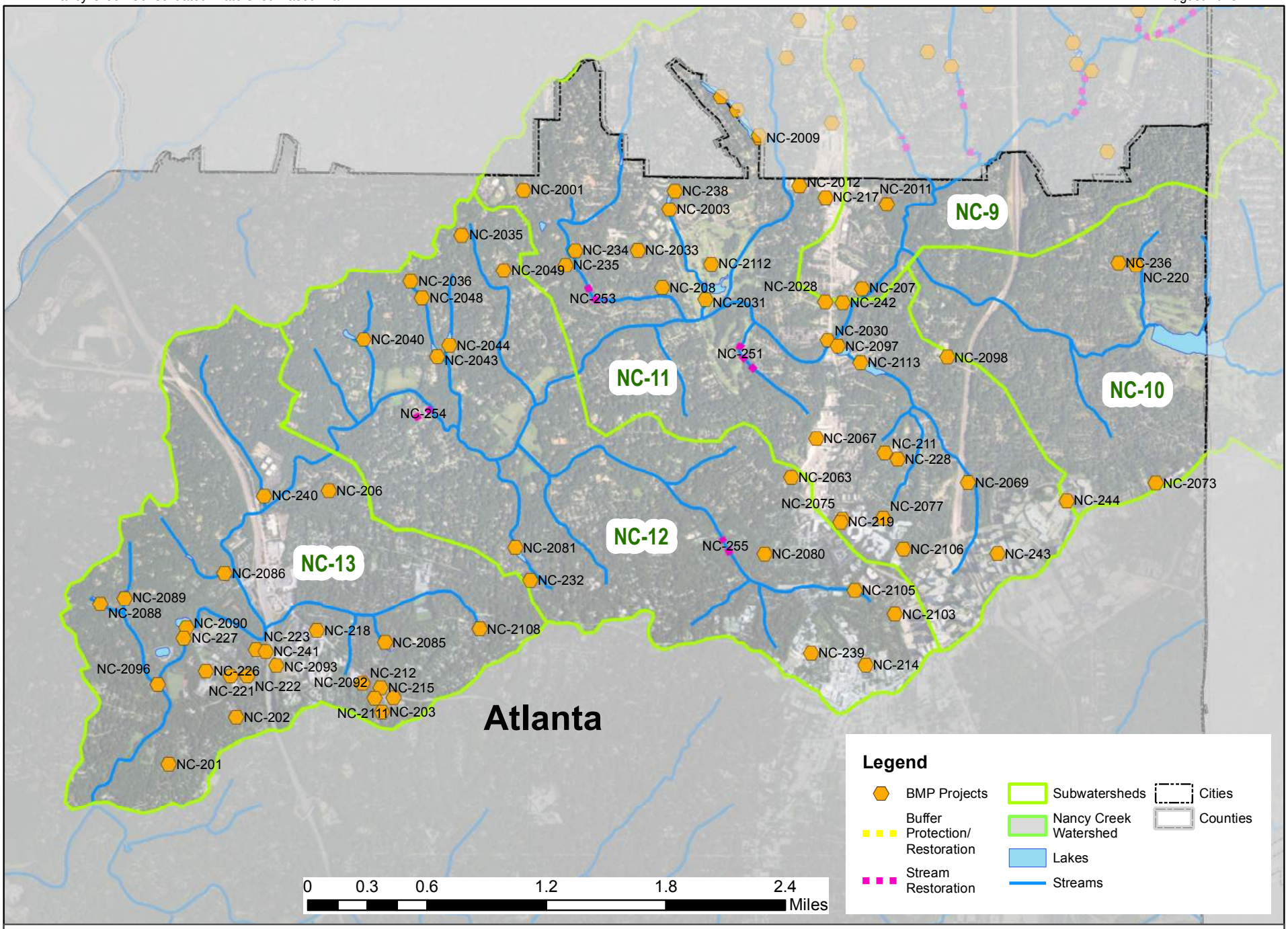


Figure A-1: City of Atlanta Recommended Projects

Table A-1. Atlanta Recommended Projects

Project Type	Project Number	Description
NC-9		
BMP Retrofit	NC-2011	Retrofit existing dry basin to provide water quality and channel protection. Modify the existing outlet control structure, excavate to increase storage capacity, and build a sediment forebay.
New BMP	NC-207	Construct a bioswale along the roadway.
NC-10		
New BMP	NC-220	Install a bioswale in Mayson Park along road.
New BMP	NC-234	Install bioretention median in wide roadway.
New BMP	NC-235	Install bioretention in cul-de-sac.
New BMP	NC-236	Install bioretention in triangle area in road.
New BMP	NC-244	Construct a bioretention next to Phipps Plaza.
BMP Retrofit	NC-2073	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow and build a forebay.
NC-11		
New BMP	NC-208	Construct a bioswale along the road. There are eight inlets in the project area with space to widen footprint if needed.
New BMP	NC-211	Construct a bioretention area adjacent to school. Existing drop inlet near project footprint. Alter curbing in parking lot.
New BMP	NC-217	Install permeable pavers behind the COSS fire station.

Project Type	Project Number	Description
New BMP	NC-219	Install permeable pavers in parking lot. Storm inlet located in corner of parking lot.
New BMP	NC-228	Construct a bioswale along Old Ivy Road. Potential water line conflicts.
New BMP	NC-238	Construct a bioretention pond next to the road upstream of the pond. Included in the Chastain Master Plan.
New BMP	NC-242	Construct a bioretention along Interlochen Drive near Roswell Road for water quality.
New BMP	NC-243	Construct a bioswale near Around Lenox Drive and Peachtree Road for water quality.
Stream Restoration	NC-251	Tributary shows evidence of a heavy sediment load, sand and silt bars, and collapsing banks. Recommend a Priority 2 restoration along this reach.
Stream Restoration	NC-252	The proposed restoration project consists of spot repairs to repair eroding banks within a 75 feet long stream reach.
Stream Restoration	NC-253	Project includes bank repairs and benching inside existing channel to create sinuosity and habitat. Rip-rap will be removed where channel dimension is off or needs repair.
BMP Retrofit	NC-2001	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow and build a forebay.
BMP Retrofit	NC-2003	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a forebay.

Project Type	Project Number	Description
BMP Retrofit	NC-2009	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow.
BMP Retrofit	NC-2012	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate to provide storage for larger events, and add a bioretention area.
BMP Retrofit	NC-2028	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate to increase storage capacity, and build a forebay.
BMP Retrofit	NC-2030	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure, increase the embankment height, remove sediment, add rip rap at the outlet, and build a forebay.
BMP Retrofit	NC-2031	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a sediment forebay.
BMP Retrofit	NC-2033	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, expand the existing basin footprint, and build a sediment forebay.
BMP Retrofit	NC-2067	Construct a new micropool extended detention basin to provide water quality benefits. Site is overgrown and located adjacent to a shopping center.

Project Type	Project Number	Description
BMP Retrofit	NC-2069	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow.
BMP Retrofit	NC-2075	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, increase the embankment, excavate the dry basin, build a forebay, and add rip rap at the outlet.
BMP Retrofit	NC-2077	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate basin to increase storage, build a sediment forebay.
BMP Retrofit	NC-2097	Retrofit existing constructed wetland to provide water quality and channel protection. Significantly modify or build a new outlet control structure, remove sediment, and add rip rap at the outlet.
BMP Retrofit	NC-2098	Construct a new micropool extended detention basin to provide water quality benefits. Evaluate upland water quality treatment at school so basin can provide storage.
BMP Retrofit	NC-2106	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate and expand footprint to increase storage capacity, add rip rap at the inlet, and build a forebay.
BMP Retrofit	NC-2112	Retrofit existing constructed wetland to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate to increase storage.

Project Type	Project Number	Description
New BMP	NC-2113	Construct a new constructed wetland. Concrete flume from condos flow into this site. Evidence of multiple drainage paths through proposed area.
NC-12		
New BMP	NC-214	Construct a bioretention area near Mathieson Drive and Mathieson Place to provide water quality. Additional flow enters from neighboring parcels. Site will capture wash water from truck / equipment washing activities.
New BMP	NC-232	Install permeable pavement in bike lanes near W Paces Ferry Road and Northside Drive for water quality benefits.
New BMP	NC-239	Install permeable pavement in bike lanes as part of a green street near E Andrews and Paces Ferry Place.
Stream Restoration	NC-254	Project includes the removal of debris and accumulated sediment, removal of stone weir, bank stabilization, and installation of structures to step down stream gradient to confluence with Nancy Creek.
Stream Restoration	NC-255	Project includes benching within existing channel for increased sinuosity, bank stabilization, and planting.
BMP Retrofit	NC-2035	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure, remove trees from the embankment, and build a sediment forebay.
BMP Retrofit	NC-2036	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure, increase the embankment height, and build a sediment forebay.

Project Type	Project Number	Description
BMP Retrofit	NC-2040	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and increase the embankment height.
BMP Retrofit	NC-2043	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a sediment forebay.
BMP Retrofit	NC-2044	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure.
BMP Retrofit	NC-2048	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure, expand existing basin footprint, and build a sediment forebay.
New BMP	NC-2049	Construct a new micropool extended detention basin near Northside Drive and W Conway Drive for water quality benefits.
BMP Retrofit	NC-2063	Retrofit existing dry basin to provide water quality and channel protection. Modify the existing outlet control structure, replace or update the outlet filtering device.
BMP Retrofit	NC-2080	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a sediment forebay.
BMP Retrofit	NC-2081	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and increase the embankment height.

Project Type	Project Number	Description
BMP Retrofit	NC-2103	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, expand the basin footprint, and build a sediment forebay.
BMP Retrofit	NC-2105	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, excavate and expand the existing basin to increase storage, build a forebay, and add rip rap at inlet.
NC-13		
New BMP	NC-201	Construct a bioswale along Ridge Valley Road near Albemarle Drive for water quality.
New BMP	NC-202	Construct a bioswale along road near Barrington Ct, Margaret Mitchell Dr, and Wesley Walk for water quality.
New BMP	NC-203	Construct a bioretention area near Howell Mill Rd and Rilman Rd for water quality.
New BMP	NC-206	Construct a bioretention area along road near Regency Road and Trafalgar Court for water quality.
New BMP	NC-212	Construct a bioretention area at the Atlanta Speech School near Northside Parkway and Pinestream Road for water quality.
New BMP	NC-215	Construct a bioretention area near Northside Parkway and Rilman Road for water quality.
New BMP	NC-218	Construct a bioretention area at the Northside Parkway Public Library near Northside Parkway and Pine Meadow Road for water quality.

Project Type	Project Number	Description
New BMP	NC-221	Construct a bioretention area on the Westminster Campus in front of Clarkson Hall for water quality.
New BMP	NC-222	Construct a bioretention area on the Westminster Campus in parking lot by Robinson Hall for water quality.
New BMP	NC-223	Construct permeable pavement on the Westminster Campus Maintenance Building Parking Lot for water quality.
New BMP	NC-226	Construct a bioretention area on the Westminster Campus Lower School Parking Lot for water quality.
New BMP	NC-227	Construct permeable pavement on the Westminster Campus Turner Gym Parking Lot for water quality.
New BMP	NC-240	Construct a bioretention area near Northside Parkway near East Beechwood for water quality.
New BMP	NC-241	Construct a micropool extended detention basin area on the Westminster Campus behind the Facility Management building for water quality.
BMP Retrofit	NC-2085	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow.
BMP Retrofit	NC-2086	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and remove sediment to increase capacity.
BMP Retrofit	NC-2088	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a sediment forebay.

Project Type	Project Number	Description
BMP Retrofit	NC-2089	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or building a new outlet control structure and expand the existing footprint.
BMP Retrofit	NC-2090	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure to regulate outflow.
New BMP	NC-2092	Construct a new micropool extended detention basin behind St. Anne's Church on Northside Drive for water quality.
BMP Retrofit	NC-2093	Retrofit existing dry basin to provide water quality and channel protection. Significantly modify or build a new outlet control structure, build a sediment forebay, add rip rap at the inlet, and remove trees from the embankment.
BMP Retrofit	NC-2096	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and expand the existing footprint.
BMP Retrofit	NC-2108	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure and build a sediment forebay.
BMP Retrofit	NC-2111	Retrofit existing wet pond to provide water quality and channel protection. Significantly modify or build a new outlet control structure, remove sediment, excavate basin within the existing footprint, and remove trees from embankment.

Brookhaven Recommended Projects

The City of Brookhaven projects are from the Nancy Creek Watershed Improvement Plan (WIP) (Summer 2016). There are 43 recommended projects which include:

- 17 stream restoration projects
- 23 new BMP projects
- 3 BMP retrofit projects

Additional information on these projects can be found in the City's WIP.

The projects are illustrated in Figure A-2 and listed in Table A-2.

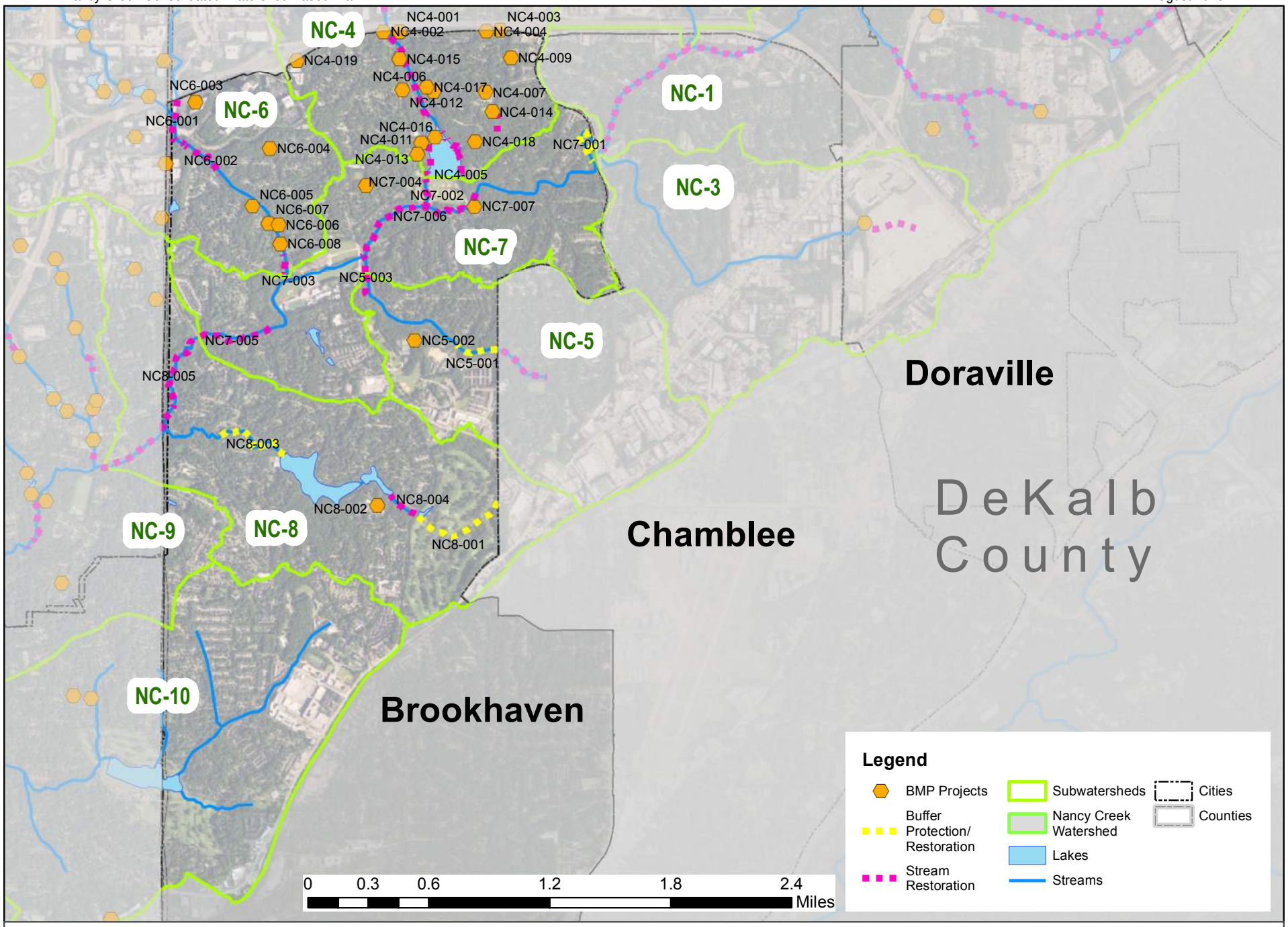


Figure A-2: City of Brookhaven Recommended Projects

Table A-2. Brookhaven Recommended Projects

Project Type	Project Number	Description
NC-4		
New BMP	NC4-001	Trash rack to capture trash runoff from I-285.
New BMP	NC4-002	Trash rack to capture trash runoff from I-285.
New BMP	NC4-003	Trash rack to capture trash runoff from I-285.
New BMP	NC4-004	Trash rack to capture trash runoff from I-285.
Shoreline Restoration	NC4-005	Restore bare shorelines around Murphey Candler Lake to prevent erosion. The shoreline was exposed when the lake level was dropped to comply with Safe Dam Act requirements.
New BMP	NC4-006	Create a three-tier bioretention area to infiltrate and treat stormwater runoff from the road entering the park.
New BMP	NC4-007	Create a new bioretention area in the front yard of Kittredge Elementary School to infiltrate and treat runoff.
Stream Restoration	NC4-008	Restoration of 390 linear feet of eroding drainage channel at Kittredge Magnet School leading into a tributary to Murphey Candler Lake. Associated with NC4-014.
BMP Retrofit	NC4-009	Retrofit existing detention structure into a wet pond at an existing office complex.
Stream Restoration	NC4-010	Restore approximately 3,400 linear feet of North Fork Nancy Creek from I-285 to Murphey Candler Lake that is classified as “poor” and “threatened”.

Project Type	Project Number	Description
New BMP	NC4-011	Create a new BMP, either a bioretention pond or constructed wetland, near the park pavilion in coordination with park upgrades.
New BMP	NC4-012	Create a bioswale upstream and downstream of the existing catch basin to manage stormwater runoff from the road entering the Park.
New BMP	NC4-013	New bioretention pond with a curb cut next to the parking area along Candler Lake West.
New BMP	NC4-014	New multi-purpose pond at the school to infiltrate roof runoff water and improve field conditions.
New BMP	NC4-015	Create an offline pond to trap sediment upstream of Murphey Candler Lake.
Sediment Removal	NC4-016	Remove excess sediment accumulated in the northern end and western cove of Murphey Candler Lake.
New BMP	NC4-017	Create an offline pond to trap sediment upstream of Murphey Candler Lake.
New BMP	NC4-018	Create an offline pond to trap sediment upstream of Murphey Candler Lake.
BMP Retrofit	NC4-019	Retrofit existing detention pond on private property to infiltrate and treat stormwater runoff.
NC-5		
Stream Restoration	NC5-001	Invasive species are threatening stream buffer health and causing downed trees. Remove invasive species and replant to healthy forest density.

Project Type	Project Number	Description
New BMP	NC5-002	Create new BMPs to infiltrate stormwater from unmanaged impervious area with planned park redevelopment projects.
Stream Restoration	NC5-003	Significant stream erosion in compact suburban area. Stabilize streambanks and enhance floodplain connectivity. Improve transition to Nancy Creek.
NC-6		
Stream Restoration	NC6-001	Restore stream and add grade control structures to mitigate velocity and protect infrastructure adjacent to the stream. Protect wide buffers, where they exist. Partner with MARTA and private property owners.
Streambank Stabilization	NC6-002	Restore and/or maintain stream buffers to protect stream habitat. Some areas will require stabilization, especially near infrastructure.
New BMP	NC6-003	Create a new bioretention area in a vegetated area to infiltrate and treat stormwater runoff on private property.
New BMP	NC6-004	Create a new BMP on a large, undeveloped property to treat and infiltrate stormwater runoff.
New BMP	NC6-005	Create a new BMP on a large, undeveloped property adjacent to Perimeter Creek to infiltrate stormwater runoff.
New BMP	NC6-006	Create a new BMP to replace inline detention on private property.
New BMP	NC6-007	Renovate existing non-functioning BMP on HOA owned land.
New BMP	NC6-008	Create a new BMP on a land locked parcel.

Project Type	Project Number	Description
Stream Restoration	NC6-009	Stabilize and/or restore property along Perimeter Creek just upstream of the confluence with Nancy Creek. Buffer encroachment has resulted in significant bank erosion.
NC-7		
Streambank Stabilization	NC7-001	Restore the vegetated buffer zone in the D'Youville community to the extent available to protect banks from erosion that is starting to occur.
Stream Restoration	NC7-002	North Fork Nancy Creek from the spillway to confluence with Nancy Creek. Address erosion with grade control and improve buffer within confines of existing recreation. Integrate planned trail and bridge.
Buffer Restoration	NC7-003	Support ongoing restoration of the stream buffer along the Marist campus.
New BMP	NC7-004	New multi-purpose pond at Montgomery Elementary to infiltrate roof runoff water and improve field conditions.
Stream Restoration	NC7-005	Restoration of Nancy Creek from Marist to Johnson Ferry Road.
Stream Restoration	NC7-006	Restoration of Nancy Creek from the football field in Murphey Candler Park to Ashford Dunwoody Road. Includes stream in Murphey Candler Park along with private property. Coordinate with planned greenway trail.
New BMP	NC7-007	Create a new BMP on HOA-owned land to improve stream conditions.
NC-8		

Project Type	Project Number	Description
Buffer Restoration	NC8-001	Improve vegetated buffer along Silver Creek with golf course appropriate vegetation to help protect against stream bank erosion.
New BMP	NC8-002	Create a new bioretention pond to mitigate runoff from a private school.
Buffer Restoration	NC8-003	Restore the stream buffers downstream of Silver Lake Dam to the extent possible and limit future buffer intrusions.
Stream Restoration	NC8-004	Restore stream and protect utilities upstream of Little Silver Lake. Coordinate with the ongoing Ashford Dunwoody Road corridor study and any recommended projects.
Stream Restoration	NC8-005	Restore Nancy Creek from Johnson Ferry to the Brookhaven city limits.

Chamblee Recommended Projects

The City of Chamblee projects were identified through discussions with staff during the development of this Watershed Based Plan. There are 3 recommended projects which include:

- 3 stream restoration projects, for 7,200 linear feet of stream

These projects are conceptual in nature and additional investigations to determine feasibility will be needed in order for the City to proceed. The City may identify additional projects in the future through the Plan Revision process.

The projects are illustrated in Figure A-3 and listed in Table A-3.

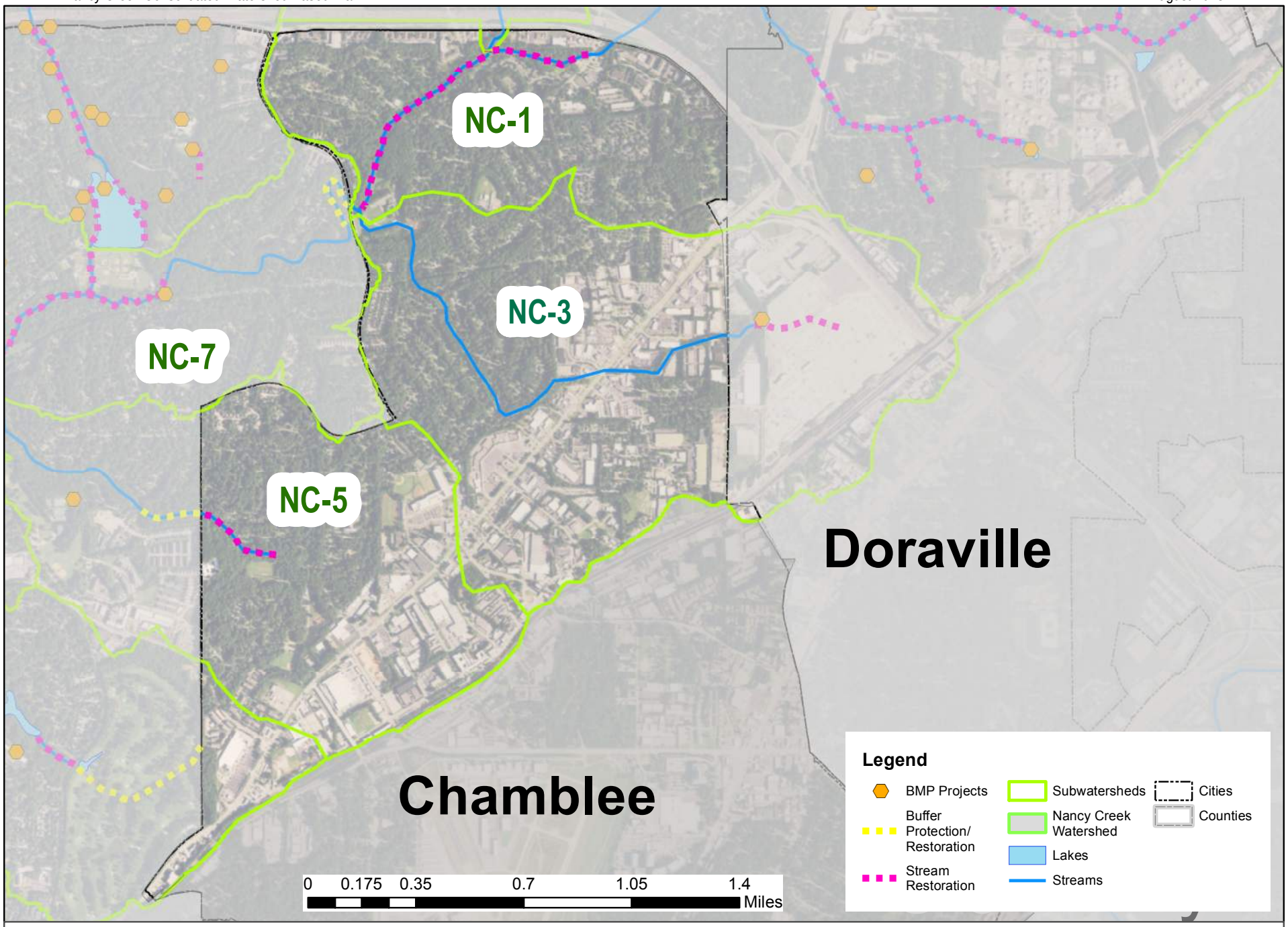


Figure A-3: City of Chamblee Recommended Projects

Table A-3. Chamblee Recommended Projects

Project Type	Project Number	Description
NC-1		
Stream Restoration	NCC-01	Restore approximately 1,900 feet of Nancy Creek to stabilize banks and reconnect the floodplain along the planned Savoy Drive park and trail.
Stream Restoration	NCC-02	Restore approximately 3,700 feet of Nancy Creek to stabilize banks and reconnect floodplain. Improve floodplain functions along floodprone properties.
NC-5		
Stream Restoration	NCC-03	Restore approximately 1,600 feet of Bubbling Creek to stabilize banks in coordination with DeKalb Watershed within Keswick Park.

Doraville Recommended Projects

The City of Doraville projects were identified through discussions with staff during the development of this Watershed Based Plan. There are 13 recommended projects which include:

- 5 stream restoration projects
- 8 BMP retrofit projects

These projects are conceptual in nature and additional investigations to determine feasibility will be needed in order for the City to proceed. The City may identify additional projects in the future through the Plan Revision process.

The projects are illustrated in Figure A-4 and listed in Table A-4.

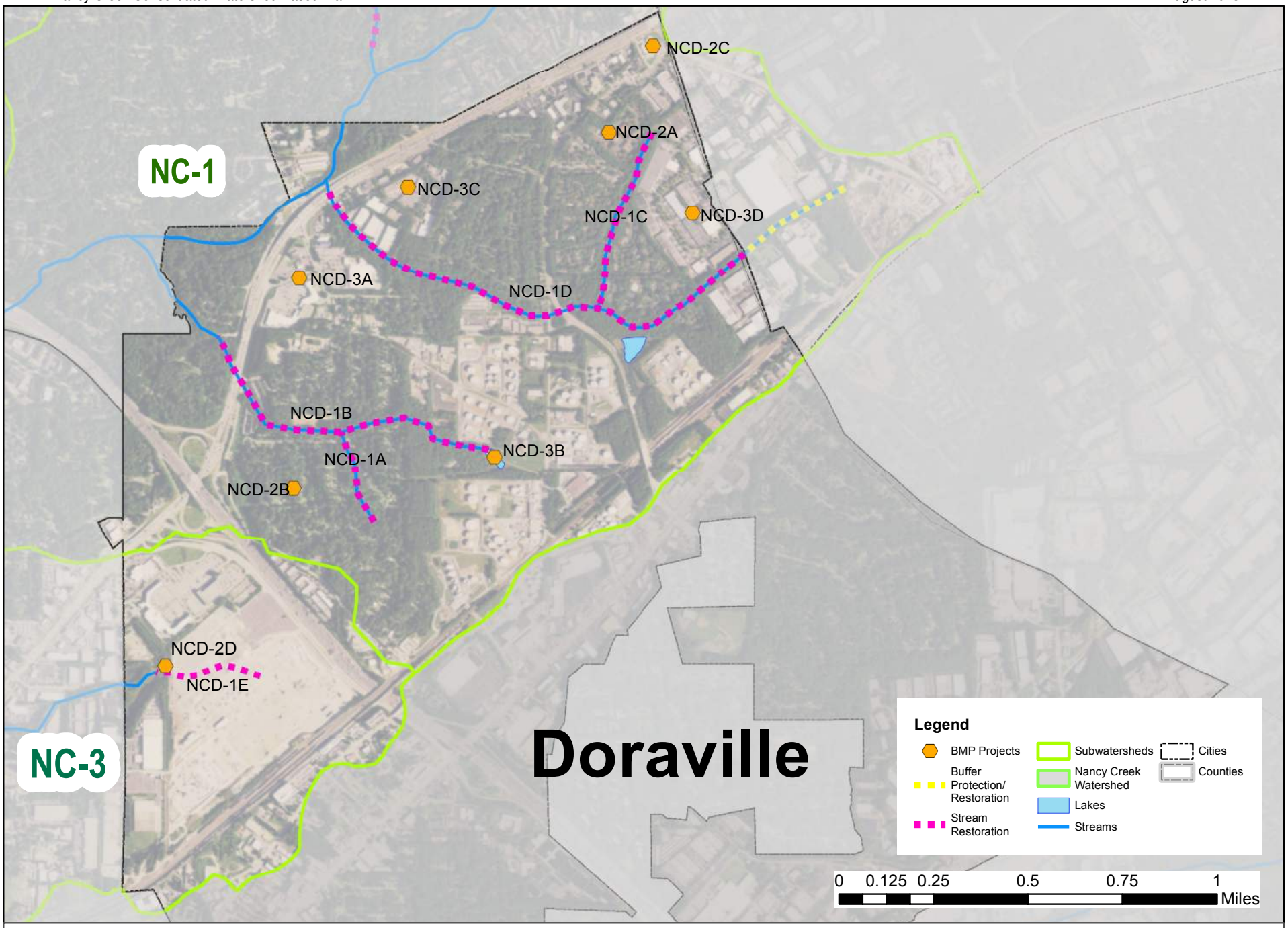


Figure A-4: City of Doraville Recommended Projects

Table A-4. Doraville Recommended Projects

Project Type	Project Number	Description
NC-1		
Stream Restoration	NCD-1A	Restore approximately 1,400 feet of stream between Tilly Mill and Doral Drive.
Stream Restoration	NCD-1B	Restore approximately 4,800 feet of stream from the tank farm to Carver Circle.
Stream Restoration	NCD-1C	Restore approximately 2,600 feet of stream near Aspen Woods and Winterpark Drive.
Stream Restoration	NCD-1D	Restore approximately 7,000 feet of stream from Bankers Industrial to Peachtree Industrial Boulevard.
BMP Retrofit	NCD-2A	Retrofit up to 8 existing ponds in the Winter Park area to improve water quality benefits.
BMP Retrofit	NCD-2B	Retrofit up to 8 existing ponds in the Tilly Mill neighborhood area to improve water quality benefits.
BMP Retrofit	NCD-2C	Retrofit up to 4 existing ponds in the QuikTrip/ Peachtree Industrial Boulevard area to improve water quality benefits.
BMP Retrofit	NCD-3A	Remove or retrofit existing impervious area in parking lots at Van Fleet Circle at Tilly Mill.
BMP Retrofit	NCD-3B	Remove or retrofit existing impervious area in parking lots near Woodwin Road and Winters Chapel.
BMP Retrofit	NCD-3C	Remove or retrofit existing impervious area in parking lots at Peachtree Square and Peachtree Industrial Boulevard.
BMP Retrofit	NCD-3D	Remove or retrofit existing impervious area in parking lots in the Bankers Industrial Area.

Project Type	Project Number	Description
NC-3		
BMP Retrofit	NCD-2D	Retrofit the existing pond to provide channel protection at the headwaters of the watershed.
Stream Daylighting	NCD-1E	Daylight approximately 1,500 feet of the existing piped stream in areas on the Integral Development property.

Dunwoody Recommended Projects

The City of Dunwoody projects were identified through discussions with staff during the development of this Watershed Based Plan. These potential projects are under consideration by the City of Dunwoody. There are 5 recommended projects which include:

- 2 stream restoration projects
- 2 BMP projects

These projects are conceptual in nature and additional investigations to determine feasibility will be needed in order for the City to proceed. The City may identify additional projects in the future through the Plan Revision process.

In addition to the 5 projects under consideration by the City, DeKalb County Watershed has one proposed stream restoration project within the City of Dunwoody limits, downstream of the Scott Candler Water Treatment Plant.

The projects are illustrated in Figure A-5 and listed in Table A-5 and Table A-5b.

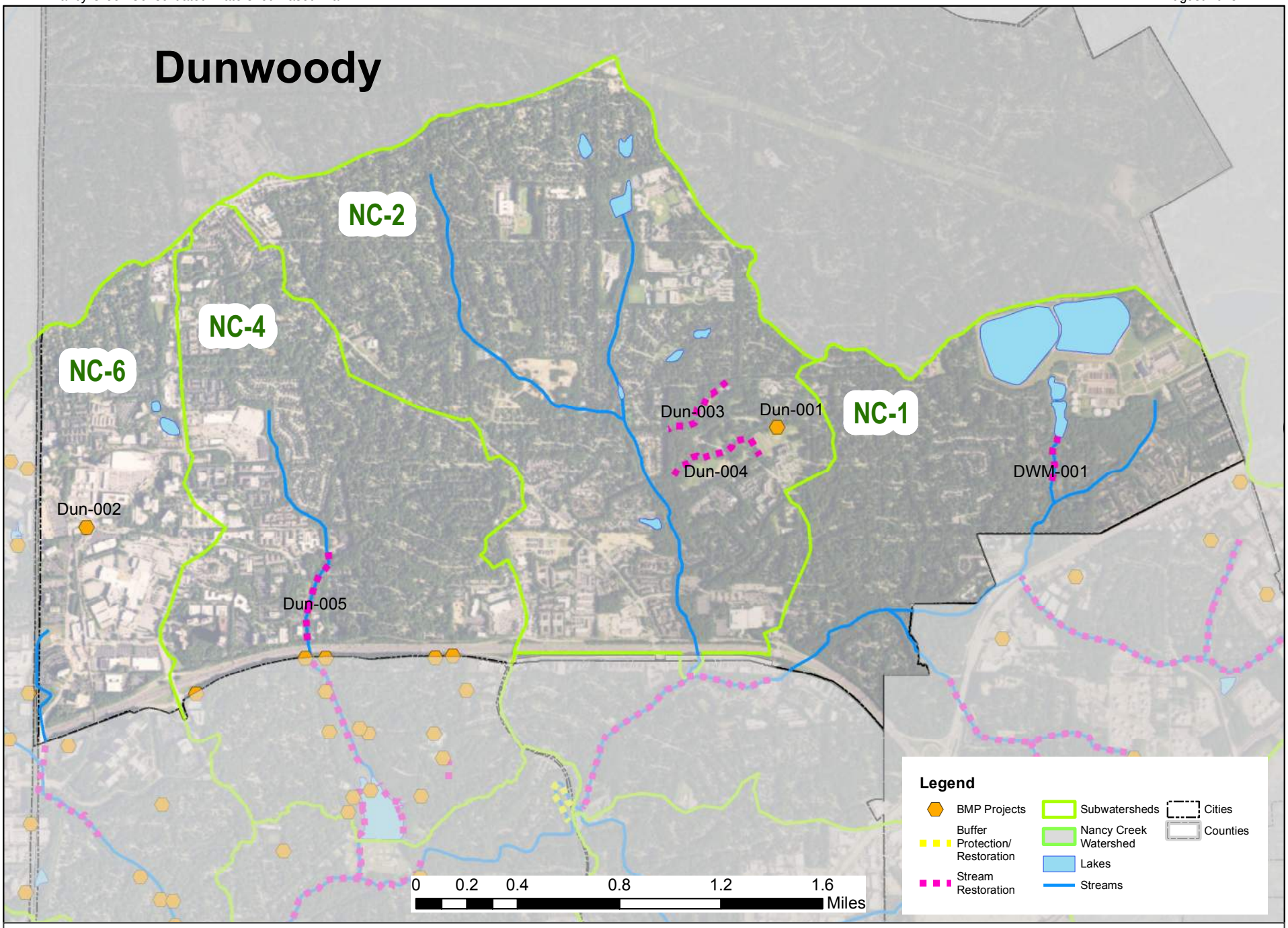


Figure A-5: City of Dunwoody Recommended Projects

Table A-5. Dunwoody Recommended Projects

Project Type	Project Number	Description
NC-2		
BMP Retrofit	Dun-001	Evaluate improvements to two existing ponds at Brook Run Park and Peachtree Middle School to improve water quality and storage volume.
Stream Restoration	Dun-003	Restore approximately 1,800 feet of the northern tributary in Brook Run Park to stabilize banks.
Stream Restoration	Dun-004	Restore approximately 2,350 feet of the northern tributary in Brook Run Park to stabilize banks.
NC-6		
New BMP	Dun-002	Evaluate opportunity to create a BMP in a depression adjacent to a commercial area and roadway in City-owned land to provide water quality and storage volume.
Stream Restoration	Dun-005	Restore approximately 2,000 feet of North Fork Nancy Creek to stabilize banks along the future Georgetown Trail and Park.

Table A-5b. DeKalb County Watershed Recommended Project in Dunwoody

Project Type	Project Number	Description
NC-1		
Stream Restoration	DWM-001	Restore approximately 1,000 feet of stream below the DeKalb County Scott Candler Water Treatment Plant. This is a DeKalb County Watershed project.

Peachtree Corners Recommended Projects

The City of Peachtree Corners projects were identified through discussions with staff during the development of this Watershed Based Plan. Peachtree Corners represents less than 1 percent of the watershed. One potential buffer protection project is identified. This project is conceptual in nature. The City may identify additional projects in the future through the Plan Revision process.

The project is illustrated in Figure A-6 and listed in Table A-6.

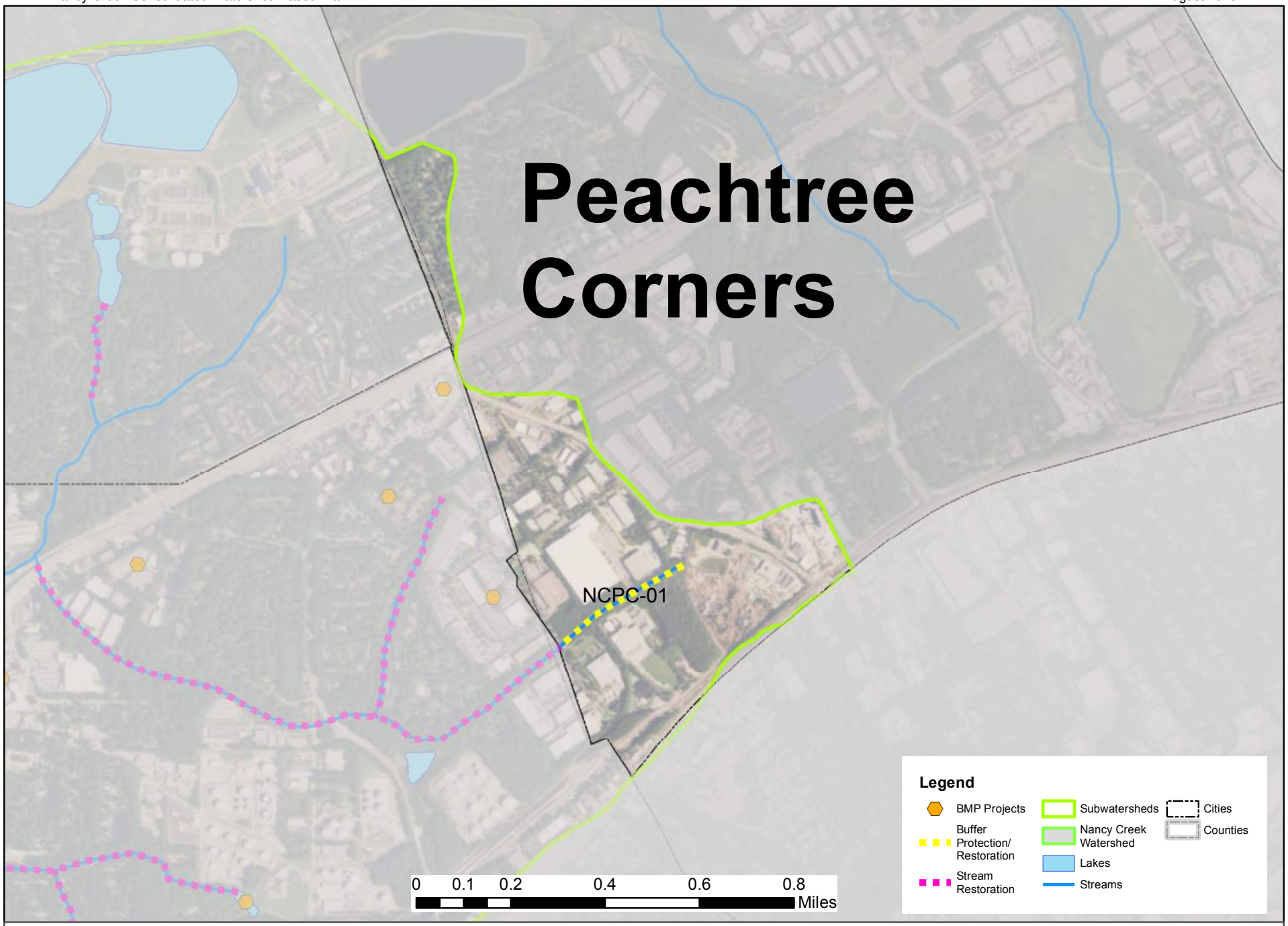


Figure A-6: City of Peachtree Corners Recommended Projects

Table A-6. Peachtree Corners Recommended Projects

Project Type	Project Number	Description
NC-1		
Buffer Protection	NCPC-01	Protect approximately 1,700 feet of an unnamed tributary to Nancy Creek if the area redevelops in the future. Evaluate volunteer removal of limited invasive species within the buffer.

Sandy Springs Recommended Projects

The City of Sandy Springs projects are from the Nancy Creek Watershed Improvement Plan (WIP) (January 2010). There are 74 recommended projects which include:

- 15 stream restoration projects
- 4 new BMP projects
- 55 BMP retrofit projects

Additional information on these projects can be found in the City's WIP.

The projects are illustrated in Figure A-7 and listed in Table A-7.

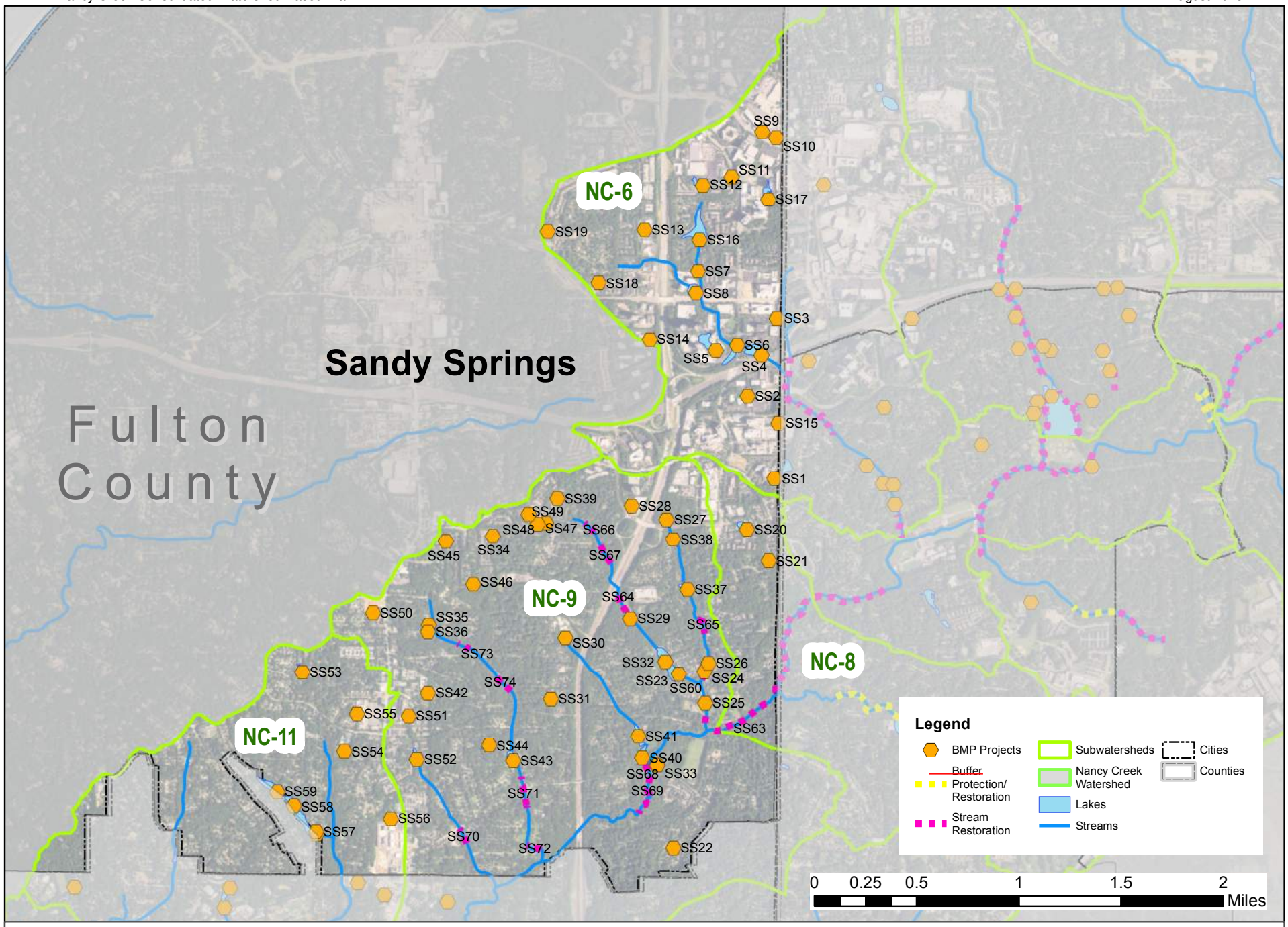


Figure A-7: City of Sandy Springs Recommended Projects

Table A-7. Sandy Springs Recommended Projects

Project Type	Project Number	Description
NC-6		
BMP Retrofit	SS1	Retrofit an existing dry pond into a micropool extended detention pond. A portion of the pond is in City of Atlanta. (City project number: 17 0016 LL167-BMP-1)
BMP Retrofit	SS2	Retrofit an existing wet pond to provide additional channel protection volume above the permanent pool elevation. (City project number: 17 0017 LL084-BMP-1)
BMP Retrofit	SS3	Retrofit an existing dry pond into an extended detention pond to enhance channel protection. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0017 LL093-BMP-1)
BMP Retrofit	SS4	Retrofit existing wet pond to provide additional channel protection volume above the permanent pool elevation. This BMP is online and difficult to permit. (City project number: 17 0017 LL096-BMP-1)
BMP Retrofit	SS5	Retrofit existing wet pond to provide additional channel protection volume. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 0017 LL1053-BMP-1)
BMP Retrofit	SS6	Retrofit existing wet pond to provide additional channel protection volume. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 0017 LL1053-BMP-2 former project: NC-AO-BMP-9)
BMP Retrofit	SS7	Retrofit existing wet pond into a wet extended detention pond. Redesign the outlet control structure and build a

Project Type	Project Number	Description
		sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0018 LL097-BMP-1)
BMP Retrofit	SS8	Retrofit existing wet pond. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 0018 LL101-BMP-1)
BMP Retrofit	SS9	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, increase the BMPs footprint, and build a sediment forebay. (City project number: 17 0019 LL121-BMP-1)
BMP Retrofit	SS10	Retrofit existing dry pond into a dry extended detention basin to provide channel protection. Redesign the outlet control structure. (City project number: 17 0019 LL121-BMP-2)
BMP Retrofit	SS11	Retrofit existing dry pond into a dry extended detention basin to provide channel protection. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0019 LL130-BMP-1)
BMP Retrofit	SS12	Retrofit existing wet pond into a wet extended detention pond. Redesign the outlet control structure, dredge to increase storage, and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0019 LL132-BMP-1)
BMP Retrofit	SS13	Retrofit existing dry pond into a micropool extended detention pond. Redesign the outlet control structure and expand the BMP's footprint. This BMP is online and difficult to permit. (City project number: 17 0036 LL071-BMP-1)
BMP Retrofit	SS14	Retrofit an existing dry pond into an extended detention pond. Redesign the outlet control structure, expand BMPs

Project Type	Project Number	Description
		footprint, and build a sediment forebay. (City project number: 17 0037 LL045-BMP-1)
BMP Retrofit	SS15	Retrofit an existing dry pond into an extended detention pond. A portion of the pond is in Brookhaven. Redesign the outlet control structure. (City project number: 17 00160002063-BMP-1)
BMP Retrofit	SS16	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 00180002001-BMP-1)
BMP Retrofit	SS17	Retrofit existing wet pond. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 00180009013-BMP-1)
BMP Retrofit	SS18	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00360002047-BMP-1)
BMP Retrofit	SS19	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00710007025-BMP-1)
NC-8		
BMP Retrofit	SS20	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, expand footprint, and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0015 LL097-BMP-1)

Project Type	Project Number	Description
BMP Retrofit	S21	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, expand footprint, and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0015 LL109-BMP-1)
NC-9		
BMP Retrofit	S22	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0013 LL089-BMP-1)
BMP Retrofit	SS23	Retrofit existing wet pond. Redesign the outlet control structure to provide full water quality and channel protection. (City project number: 17 0014 LL104-BMP-1)
BMP Retrofit	SS24	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0014 LL110-BMP-1)
BMP Retrofit	SS25	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0014 LL140-BMP-1 former project: NC-AJ-BMP-7)
BMP Retrofit	SS26	Retrofit existing wet pond. Redesign the outlet control structure, expand the pond footprint, and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0014 LL149-BMP-1)
New BMP	SS27	Build a new shallow wetland. This BMP is online and difficult to permit. (City project number: 17 0016 LL171-BMP-1 former project: NC-AJ-BMP-5)

Project Type	Project Number	Description
BMP Retrofit	SS28	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. (City project number: LL141-BMP-1)
New BMP	SS29	Build a new wet pond. This BMP is online and difficult to permit. (City project number: 17 0039 LL066-BMP-1)
BMP Retrofit	SS308	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0039 LL078-BMP-1)
BMP Retrofit	SS31	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure. (City project number: 17 0040 LL072-BMP-1)
BMP Retrofit	SS32	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 0040 LL161-BMP-1)
New BMP	SS33	Build a new shallow wetland to include a forebay at the inlet, micropool at the outlet, and shallow marsh areas for storage. (City project number: 17 0041 LL036-BMP-1)
BMP Retrofit	SS34	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure. (City project number: 17 0068 LL078-BMP-1)
BMP Retrofit	SS35	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, expand the BMP footprint, and build a sediment forebay. (City project number: 17 0092 LL071-BMP-1)

Project Type	Project Number	Description
BMP Retrofit	SS36	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 0092 LL071-BMP-2)
BMP Retrofit	SS37	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 00150004003-BMP-1)
BMP Retrofit	SS38	Retrofit an existing wet pond into a wet extended detention pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 00150006013-BMP-1)
BMP Retrofit	SS39	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, increase the BMP footprint, and build a sediment forebay. (City project number: 17 00380001117-BMP-1)
BMP Retrofit	SS40	Retrofit existing wet pond. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 00400003002-BMP-1)
BMP Retrofit	SS41	Retrofit existing wet pond. Redesign the outlet control structure, expand the BMP footprint, and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 00400003003-BMP-1)
BMP Retrofit	SS42	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure. (City project number: 17 00670001082-BMP-1)

Project Type	Project Number	Description
BMP Retrofit	SS43	Retrofit existing wet pond. Redesign the outlet control structure. (City project number: 17 00670006005-BMP-1)
BMP Retrofit	SS44	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00670007009-BMP-1)
BMP Retrofit	SS45	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, expand the BMP footprint, and build a sediment forebay. (City project number: 17 00680006002-BMP-1)
BMP Retrofit	SS46	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure, expand the BMP footprint, and build a sediment forebay. (City project number: 17 00680008022-BMP-1)
BMP Retrofit	SS47	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure and increase dam height to increase capacity. (City project number: 17 00690005022-BMP-1)
BMP Retrofit	SS48	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure. (City project number: 17 00690005022-BMP-2)
New BMP	SS49	Construct a new micropool extended detention pond. (City project number: 17 00690005022-BMP-3)
BMP Retrofit	SS50	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00920001035-BMP-1)

Project Type	Project Number	Description
BMP Retrofit	SS51	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure. (City project number: 17 00930004071-BMP-1)
BMP Retrofit	SS52	Retrofit existing dry pond into a wet extended detention pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. (City project number: 17 00930004075-BMP-1)
BMP Retrofit	SS53	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 01200001067-BMP-1)
BMP Retrofit	SS54	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00930006125-BMP-1)
BMP Retrofit	SS55	Retrofit an existing dry pond into a micropool extended detention pond. Redesign the outlet control structure and expand BMP footprint. (City project number: 17 00930006131-BMP-1)
BMP Retrofit	SS56	Retrofit an existing dry pond into a dry extended detention pond. Redesign the outlet control structure and build a sediment forebay. (City project number: 17 00940001092-BMP-1)
BMP Retrofit	SS57	Retrofit existing wet pond. Redesign the outlet control structure. This BMP is online and difficult to permit. (City project number: 17 01190005040-BMP-1)
BMP Retrofit	SS58	Retrofit existing wet pond. Redesign the outlet control structure. This BMP is online and difficult to permit.

Project Type	Project Number	Description
		Ownership of BMP under review. (City project number: 17 01190006048-BMP-1)
BMP Retrofit	SS59	Retrofit existing wet pond. Redesign the outlet control structure and build a sediment forebay. This BMP is online and difficult to permit. Ownership of BMP under review. (City project number: 17 01190007026-BMP-1)
Stream Restoration	SS60	Restore approximately 300 feet of stream. Level 4 restoration to stabilize the steep, eroding banks. (City project number: 17 0014 LL119-STREAM-1 former project ID NC-AJ-BMP-7)
Stream Restoration	SS61	Restore approximately 60 feet of stream. Level 4 restoration to stabilize the incised area below a knickpoint. (City project number: 17 0014 LL104-STREAM-1)
Stream Restoration	SS62	Restore approximately 800 feet of stream. Level 3 restoration to create a floodprone area in the existing eroded channel. (City project number: 17 0014 LL146-STREAM-1)
Stream Restoration	SS63	Restore approximately 1,500 feet of stream. Level 3 restoration to slope and stabilize banks and vegetate stream buffer. (City project number: 17 0014 LL151-STREAM-1)
Stream Restoration	SS64	Restore approximately 600 feet of stream. Level 2 restoration to reconnect the floodplain either in the existing or new channel. (City project number: 17 0039 LL055-STREAM-1)
Stream Restoration	SS65	Restore approximately 350 feet of stream. Level 2 restoration to reconnect the floodplain either in the existing or new channel. (City project number: 17 00150007004-STREAM-1)

Project Type	Project Number	Description
Stream Restoration	SS66	Restore approximately 350 feet of stream. Level 3 restoration to slope and stabilize banks and vegetate stream buffer. (City project number: 17 00380002058-STREAM-1)
Stream Restoration	SS67	Restore approximately 600 feet of stream. Level 3 restoration to slope and stabilize banks, especially the right bank, and vegetate stream buffer. (City project number: 17 00390002045-STREAM-1)
Stream Restoration	SS68	Restore approximately 350 feet of stream. Level 3 restoration to slope and stabilize the highly incised banks. Vegetate stream buffers with adjacent property owners. (City project number: 17 00400003002-STREAM-1)
Stream Restoration	SS69	Restore approximately 1,400 feet of stream. Level 3 restoration to slope and stabilize highly incised banks and sedimentation. (City project number: 17 00410002036-STREAM-1)
Stream Restoration	SS70	Restore approximately 600 feet of stream. Level 2 and 3 restoration to slope and stabilize eroding banks and large scour pool. Portions of bank are armored. (City project number: 17 00660001011-STREAM-2)
Stream Restoration	SS71	Restore approximately 800 feet of stream. Level 3 restoration to slope and stabilize highly incised banks with fallen trees. (City project number: 17 00660004021-STREAM-1)
Stream Restoration	SS72	Restore approximately 500 feet of stream. Level 2 restoration to reconnect the floodplain either in the existing or new channel. Large buffer on left bank allows for new channel. (City project number:17 00660006039-STREAM-1)

Project Type	Project Number	Description
Stream Restoration	SS73	Restore approximately 350 feet of stream. Level 4 restoration to stabilize the steep, eroding banks. (City project number: 17 00670001009-STREAM-1)
Stream Restoration	SS74	Restore approximately 600 feet of stream. Level 4 restoration to stabilize the steep, eroding banks. (City project number: 17 00670001068-STREAM-1)

Appendix B: Plan Amendment Form

Submitting Jurisdiction: _____

Recommended Project Title: _____

Project Location (specific address or location description): _____

_____

Project Overview (Type, Benefits, Etc.): _____

_____

_____

Project Timing (anticipated): _____

_____

Project Contact Person Name: _____

Project Contact Phone Number/ Email: _____

_____

Project Location Map Enclosed (Yes/No): _____

When completed email this form to the Nancy Creek Watershed Representatives.

Appendix C: Annual Watershed Meeting Template

I. Introductions

II. Watershed Overview (sampling data and/or habitat data)

III. Public Education Overview (activities last year)

IV. Review of Completed Projects

V. Review of Planned Projects

VI. Watershed Overview (sampling data and/or habitat data)

VII. Review of Plan Amendments/ Discussion of Recommended Amendments

VIII. Future Organizational Leadership Discussion

IX. Other Watershed-Wide Issues or Concerns

References

[i] *Revised Total Maximum Daily Load Evaluation for Seventy-Nine Stream Segments in the Chattahoochee River Bain for Fecal Coliform*. Georgia EPD. November 2008.
[ii] *Impacts of Impervious Cover on Aquatic Systems*. CWP (2003).
[iii] Caraco, D. 2013. *Watershed Treatment Model (WTM) 2013 Documentation*. Center for Watershed Protection, Ellicott City, MD.
[iv] Schueler, T. 1987. *Controlling urban runoff: a practical manual for planning and designing urban BMPs.* Metropolitan Washington Council of Governments. Washington, DC.
[v] Winer. 2000. *The National Pollutant Removal Performance Database, version 2.*
[vi] *Restoration of Aquatic Ecosystems Science, Technology, and Public Policy Committee on Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy Water Science and Technology Board Commission on Geosciences, Environment, and Resources.* National Research Council. 1992.
[vii] https://gefa.georgia.gov/current-loan-rates
[viii] Measuring Effectiveness of Best Management Practices. Chesapeake and Atlantic Coastal Bays Trust Fund.