

STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN REVISION #1
 Big Creek Watershed
 Chattahoochee River Basin

Fulton County, Forsyth County and the cities of Roswell and Alpharetta

I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.

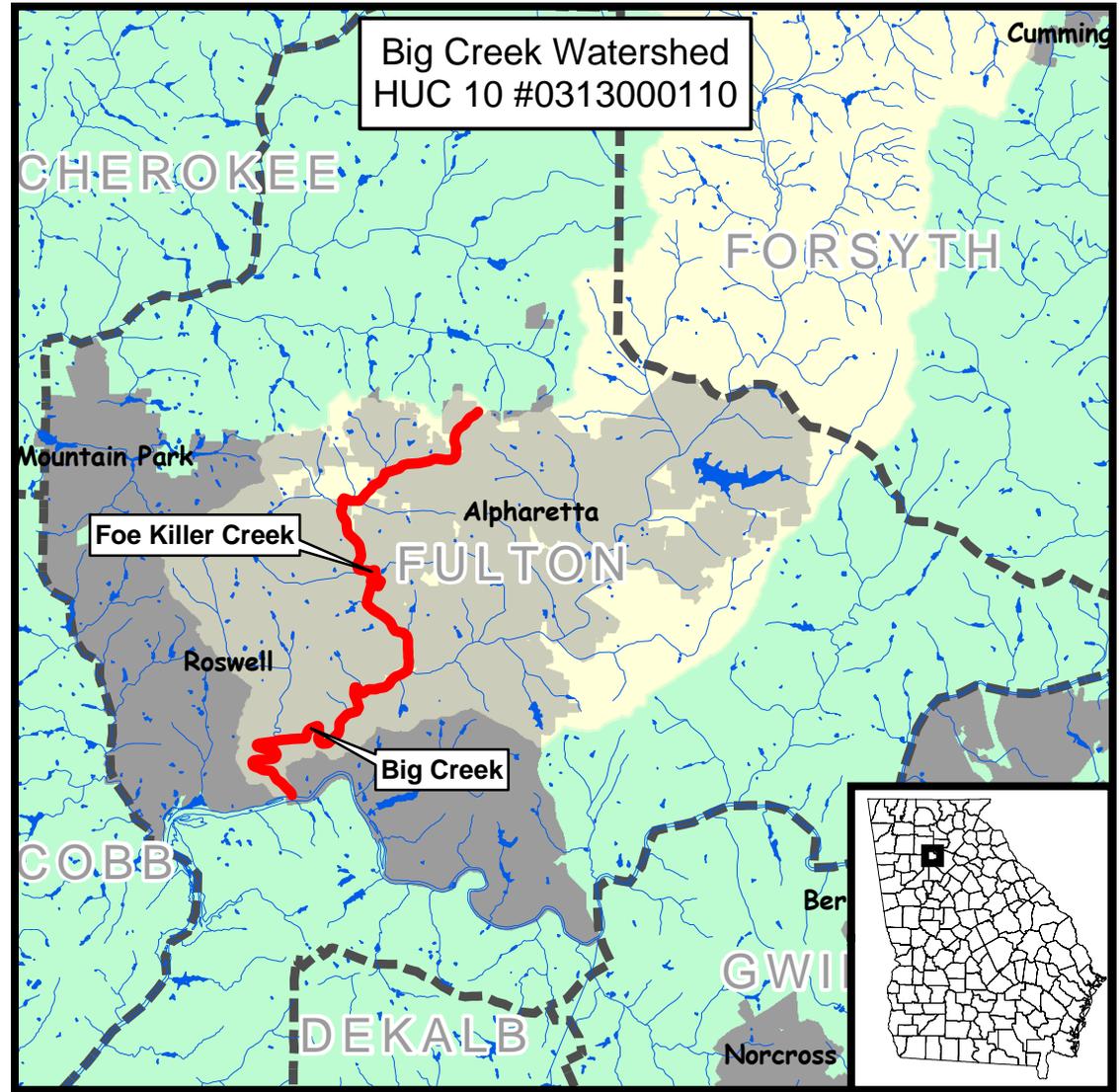


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT
Big Creek	Hwy 400 to Chattahoochee River	Fecal Coliform Bacteria
Foe Killer Creek	Fulton County	Fecal Coliform Bacteria
Hog Waller Creek*	Roswell	Fecal Coliform Bacteria

* Plan will be written by GA EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC10 #0313000110. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features which could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities which could influence water quality. See the instructions for more information on what to include.

The Big Creek Watershed (HUC10 #0313000110) is located in north Fulton and south Forsyth Counties. The land area for HUC10 #0313000110 is 66,377 acres. Georgia 400, a major highway, runs north and south through the length of this HUC10. Based on available ARC 2001 land cover data this area appears to be primarily Forest and Agricultural Lands, especially in the Forsyth County portion of this HUC10. In the Fulton County portion of this HUC10 there are concentrations of Commercial areas but primarily residential areas make up this portion of the HUC10.

The stream segments identified on Georgia Environmental Protection Division's 303(d) list in HUC10 #0313000110 for which ARC has developed an implementation plan include: Big Creek (Hwy 400 to Chattahoochee River) and Foe Killer Creek (Fulton County). The 303 (d) listed stream segment of Big Creek (Hwy 400 to Chattahoochee River) begins in the City of Roswell at Georgia 400 and flows south into the Chattahoochee River. The Foe Killer Creek (Fulton County) segment begins in the City of Alpharetta, then flows south through the City of Roswell and finally flows into Big Creek. The Foe Killer Creek stream segment watershed has a smaller land area than the entire HUC10 watershed that affect the actual TMDL stream segment. The Big Creek stream segment watershed on the other hand has the same drainage area as the entire HUC10. The local governments with interest in the Section 305(b) / Section 303(d) listed stream segments in HUC10 #0313000110 include: Fulton and Forsyth Counties and the cities of Roswell and Alpharetta.

We have included below two tables that describe the land cover for each of the two TMDL stream segment watersheds. The land cover data used to develop these tables is data developed by the Atlanta Regional Commission in 2001. This land cover data has not changed significantly since the TMDL was prepared. The acreage totals found in the below tables reflect the watershed boundaries ARC has updated. These updated TMDL stream segment watershed boundaries will be provided to GA EPD. These tables also define how ARC has aggregated the ARC Land cover codes into simplified groupings similar to those found in the TMDL. An additional table has been added to the last page of this document that defines the Aggregated ARC Land Cover Codes.

ARC 2001 Land Cover for Big Creek TMDL Segment Watershed

Land Cover Classification	Area (Acres)	% of Total Area	Aggregated ARC Land Cover Codes
Medium-Density Residential	18250.20	27.49%	112
Forest/Open Space	13933.67	20.99%	40, 171, 172, 173
Agricultural Lands	10262.59	15.46%	21, 22, 23, 24
Commercial	8969.10	13.51%	12, 15, 121
Low-Density Residential	7421.02	11.18%	111
Transitional & Extractive Lands	2787.87	4.20%	17, 74, 75, 76
High-Density Residential	1922.76	2.90%	113, 119, 117
Water/Wetland	1687.26	2.54%	51, 53, 60
Transportation and Utilities	800.29	1.21%	14, 145
Industrial/Institutional	342.27	0.52%	13
Total Acres	66377.03	100.00%	

ARC 2001 Land Cover for Foe Killer Creek TMDL Segment Watershed

Land Cover Classification	Area (Acres)	% of Total Area	Aggregated ARC Land Cover Codes
Medium-Density Residential	3822.18	49.35%	112
Commercial	1708.96	22.07%	12, 15, 121
Forest/Open Space	690.94	8.92%	40, 171, 172, 173
Low-Density Residential	509.42	6.58%	111
Agricultural Lands	367.60	4.75%	21, 22, 23, 24
Transitional & Extractive Lands	358.22	4.63%	17, 74, 75, 76
High-Density Residential	212.80	2.75%	113, 119, 117
Water/Wetland	51.87	0.67%	51, 53, 60
Transportation and Utilities	22.93	0.30%	14, 145
Total Acres	7744.92	100.00%	

Both stream segments are listed for not meeting water quality standards for fecal coliform. Fecal Coliform bacteria are bacteria found in the intestinal tract of humans and animals. Its presence in streams, rivers, and lakes is an indicator of possible harmful pathogens. The GA Environmental Protection Division has developed the implementation plans for the other stream segment listed on the cover of this document. For information on these implementation plans please contact Mary Gazaway at (404) 675-1745.

For each waterbody on the 303(d) list, the U.S. Clean Water Act requires a TMDL be developed for each pollutant. A TMDL is a calculation of the maximum amount of a pollutant, from both point and non-point sources that a waterbody can receive and still meet water quality standards. The U.S. EPA developed a TMDL for these stream segments in February 2003 that shows a reduction in fecal coliform levels is needed. The required reductions in Fecal Coliform loads are as follows: 39% for Big Creek (Hwy 400 to Chattahoochee River) and 5% for Foe Killer Creek (Fulton County).

Staff from the Fulton County Department of Public Works and the cities of Roswell and Alpharetta helped to identify the potential sources of fecal coliform in these segment watersheds. The following potential fecal coliform sources were identified for the stream segments in HUC10 #0313000110: urban runoff, animal waste, SSOs, illicit connections and leaking/failing septic systems.

This implementation plan was developed with the help of representatives from the Fulton County Public Works, the Metropolitan North Georgia Water Planning District and the cities of Alpharetta and Roswell. The Atlanta Regional Commission coordinated the public meetings and the input received from local stakeholders and technical advisory staff. Comments and requested revisions to the draft plan have been considered in developing this final draft implementation plan.

The GA EPD will be conducting TMDL monitoring in the Chattahoochee River Basin in 2005. This data will be used to list and possibly delist stream segments.

A portion of the affected governments' management measures are based on their NPDES Phase I Municipal Separate Storm Sewer System (MS4) Permit requirements. These programs include: stormwater ordinances, public education & outreach programs, public participation/involvement programs, illicit discharge detection and elimination programs, construction site runoff control, post-construction runoff control and pollution prevention/good housekeeping.

The affected governments all have public education / outreach programs in place to educate the general public about water quality concerns. These programs include a range of activities such as educational brochures/bill inserts and activities for schools age students. Fulton County and the Cities of Roswell and Alpharetta all participate in the Clean Water Campaign (www.cleanwatercampaign.com). An active Adopt-A-Stream program operates in Fulton County and the cities of Roswell and Alpharetta. Storm Drain stenciling programs are also common throughout the watershed area.

The purpose of this implementation plan is to reduce or eliminate the sources of fecal coliform bacteria contributing to these stream segments in order to meet the fecal coliform water quality standard. The water quality attainment date will be ten years from the time the implementation plan is approved.

Big Creek

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Big Creek	Hwy 400 to Chattahoochee River (Fulton Co.)	5 miles	Fishing/Drinking Water	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	Urban Runoff (UR)	39%

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
 - Field surveys
 - Review of land cover data
 - Evaluation of sources
-

A meeting was held in March 2004 with local city and county staff to review the TMDL segment and discuss potential sources of pollution. In May 2004 public meetings were held to solicit general stakeholder involvement. Large presentation size maps using 2003 aerial imagery were developed for the public meetings as a tool to help locate sources. The stakeholders were asked for their input on any potential sources of pollution in the area. In addition to reviewing aerial imagery ARC staff will review the most recent landuse data available (year 2001) for the area and will be updating the watershed description found in the TMDLs. This process involved first verifying that the correct watershed was used in the development of the TMDL. ARC staff has updated watershed delineations and will provide the updated watershed boundaries to GA EPD.

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The SOURCES SHOULD BE RANKED** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed affected, the stream miles affected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform	Urban Runoff	Entire Reach	Moderate	Nonpoint source / stormwater runoff
Fecal Coliform	SSOs	Sporadically throughout the segment	Moderate	Overflows from sanitary sewer system due to blockages from grease, roots, vandalism / pipe failures
Fecal Coliform	Septic tank systems	Sporadically throughout the segment	Moderate	Leaking / runoff from failing septic tank systems, including faulty drain fields
Fecal Coliform	Animal wastes	Sporadically throughout the segment	Moderate	Nonpoint source - pets and wildlife
Fecal Coliform	Illicit connections	Limited	Small	Improper connections of sanitary sewer flows to the storm drain system

V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

As a first step an initial meeting was held with local government agencies to determine possible sources of pollution as well as any preventative / corrective measures in place or planned for the area. The local government agencies in the advisory group for this segment are listed in Table 4.

The most important part of developing these implementation plans is locating stakeholders in this area. ARC staff searched for stakeholders listed on existing mailing lists (Home Owner Associations, Adopt-A-Stream, Watershed Alliance groups, etc.) to invite to the public meetings. The staff also gathered tax assessment information on landowners who owned more than 50 acres in the county. These stakeholders were considered large landowners and included public, private, and commercial types of property. Businesses listed on EPA's Enforcement & Compliance History Online (ECHO) website (www.epa.gov/echo) that were located in the area were also invited to the public meetings. A list of elected officials, chambers of commerce, parks & recreation departments, NRCS, GA Soil & Water Conservation Commission, and National Park Service representatives were also invited to the public meetings. ARC staff also included schools, libraries, and large apartment complexes in the public meeting mailing list.

The next outreach activity was to develop a website for this project (www.atlantaregional.com/cleanerstreams). The website provided a variety of information and access opportunities for the TMDL Implementation Plan process. The website identified the local government participants, provided a list and map of the TMDL stream segments. The TMDL documents, the 303(d) list and other background information was available on this website. An online sign-up and feed-back form was included on the website so that people could sign up to be a stakeholder. These stakeholder names and other stakeholders can be found in Appendix A. In an effort to provide further detailed information on the TMDL stream segments and their watersheds, an interactive GIS map was developed as a part of the website. This interactive mapping technology allows individuals to zoom in to the area they are interested in and print out maps. The website also included access to a 10-minute video and slide presentation that explains the implementation plan development process and provides online feedback thus creating a virtual stakeholder public meeting and involvement process. This video resource was made available from May 3, 2004 to August 3, 2004. During this three month period a total of 129 visitors accessed the virtual public meeting. It was confirmed that public libraries in the area have high speed internet access and that the virtual public meeting could be viewed on computers at any public library in the metro Atlanta area.

The next step in this process involved holding 4 initial public meetings in May 2004 to educate stakeholders about this process and solicit input. A total of 43 persons attended the public meetings.

Methods used to inform the general public about the implementation plan development process and the public meetings include: having major environmental groups send out meeting notices in their electronic newsletters, distributing press releases, purchasing newspaper advertising space, sending out numerous e-mails announcing the initial meetings and finally mailing out 3500 meeting announcements to local groups (home owner associations, watershed alliances, etc.), businesses, large landowners, elected officials, Chambers of Commerce, Parks & Recreation Departments, NRCS, and the National Park Service.

After input had been received from our local government advisory group and stakeholders a draft implementation plan was developed. This draft document was made available to all stakeholders for discussion and input at the 4 public meetings held in June 2004. A total of 37 persons attended the public meetings.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

Table 4. COMMITTEE MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
GA EPD, Water Protection Branch	4220 International Pkwy, Suite 101	Atlanta	GA	30354	(404) 675-1751	
GA Adopt-A-Stream	4220 International Pkwy, Suite 101	Atlanta	GA	30354	(404) 675-1636	
Georgia Soil and Water Conservation Commission	1500 Klondike Road Suite A109	Conyers	GA	30094	770-761-3020	kshahlaee@gaswcc.org
NRCS (Lawrenceville, GA Office)	750 South Perry St., Suite 410	Lawrenceville	GA	30045	770-963-9288	
Fulton County Public Works (Nick Ammons)	141 Pryor St., S.W., Suite 6001	Atlanta	GA	30303	404-730-7589	
Fulton County Environmental Health Department (Pearl Gordon)	99 Jessie Hill Jr., Dr., Room 101	Atlanta	GA	30303	404-730-1308	
NRCS	678 South Cobb Drive, Suite 150	Marietta	GA	30060	770-792-0594	
Fulton County Cooperative Extension Service	141 Pryor St., Suite 1031	Atlanta	GA	30303	404-730-7000	
Stu Moring / City of Roswell	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	smoring@ci.roswell.ga.us
Charles Richards / City of Roswell	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	crichards@ci.roswell.ga.us
Carter Lucas / City of Roswell	Planning and Zoning 38 Hill Street, Suite G-30	Roswell	GA	30075	(770) 641-3780	clucas@ci.roswell.ga.us
Rebecca McDonough / City of Alpharetta	Engineering and Public Works 1790 Hembree Road	Alpharetta	GA	30004	(678) 297-6200	rmcdonough@alpharetta.ga.us
Steve Dempsey / Forsyth County	Engineering Department 110 East Main St., Suite 120	Cumming	GA	30040	(770) 781-2165	
Scott Morgan / City of Cumming	Dept. of Planning and Zoning 100 Main Street	Cumming	GA	30040	(770) 781-2024	s.morgan@cityofcumming.net
Earl Burrell, Fulton County	Department of Public Works 141 Pryor St., SW, Suite 6001	Atlanta	GA	30303	(404) 730-7462	earl.burrell@co.fulton.ga.us
Metropolitan North Georgia Water Planning District	40 Courtland Street, NE	Atlanta	GA	30303	404-463-3260	

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

Table 5. MANAGEMENT MEASURES AND ACTIVITIES

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
CMOM Program	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	In Development	2005	Very
Emergency Sanitary Sewer Evaluation Study (ESSES)	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Completed in 2001	Completed in 2001	Moderate
Interim Collection System Master Plan	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Completed in 2002	Completed in 2002	Moderate
Survey of Sanitary Sewer	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Begin in 2003	2003	Moderate
Sanitary Sewer Modeling	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Planned for 2005	2005	Very
Flow Monitoring	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1988	Very
Improvements in Wastewater Treatment	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1912	Very
Database and Tracking of Un-sewered Areas	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	2005	Moderate
Permitting of Septic Systems	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	1952	Moderate
Educational Efforts (Pet Waste)	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	1998	Weak
Providing sewer service to Developed Areas by 2030	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1990	Moderate

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Improving Waste Receptacles	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	2003	Weak
Reduction in agricultural land use through conversion to developed property	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	1808	Moderate
Reduction in habitat through development	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	1808	Moderate
IAW O.C.G.A. 290-5-26	Fulton County Environmental Health Department	Rules and regulations for installation and repair of on-site sewage management systems.	Fulton County General Fund	Enforced	June 30, 1980	Moderate
Stormwater Management Ord. (Code Secs. 5-201 to 5-223)	City of Alpharetta	Protects streams by prohibiting illicit discharges, regulating post-development runoff quality & quantity, managing stormwater system. Revised to meet requirements of model ordinances.	General Funds	Active and ongoing	1995 (Revised March 2004)	Moderate
Stormwater Design Manual	City of Alpharetta	Requirement for Stormwater Ordinance. Sets design guidelines and requirements for stormwater systems.	General Funds	Active and ongoing	1995	Moderate
Soil Erosion and Sedimentation Control Ord. (Code Secs. 5-98 to 5-106)	City of Alpharetta	City is designated local issuing authority under MOA w/GA EPD. Requires state E&S buffers in addition to other required buffers.	General Funds	Active and ongoing	1989 (Updated in 2004)	Moderate
Chattahoochee River Protection Ordinance (Code Secs 5-118 to 5-136)	City of Alpharetta	Required under Metropolitan River Protection Act (GA Code 12-5-440 et seq.). Requires 35-foot buffer on flowing streams draining to Chattahoochee	General Funds	Active and ongoing	1985	Weak
Water Supply Watershed Protection (Unified Development Code Section 3.3.12)	City of Alpharetta	Required under GA Part 5 Criteria. Requires 100-foot undisturbed buffer and 150-foot impervious surface setback on perennial streams w/i 7 miles of Roswell Big Creek intake. Development greater than 25% impervious surface must treat first 1.2 in. of rainfall for water quality	General Funds	Active and ongoing	2001	Moderate
Metropolitan North Georgia Water Planning District Model Ordinances	City of Alpharetta	Revised and amended existing ordinances to meet model ordinance requirements. City minimum stream buffer is 50 feet.	General Funds	Active and ongoing	2004	Moderate

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Stormwater Structural Control Maintenance	City of Alpharetta	Inspect and maintain 32 City-owned stormwater BMPs: stormceptors and oil/water separators inspected every 6 mos., detention ponds yearly. All cleaned and maintained as needed	General Funds	Active and ongoing	2000	Weak
Maintaining Roadside Drainage Systems	City of Alpharetta	Remove excess sediment and debris from storm inlets, catch, basins, pipes and ditches; maintain vegetation on roadside shoulders and ditches under City Landscape Contract	General Funds	Active and ongoing	2000	Weak
Roadside Litter Removal	City of Alpharetta	Remove litter from right-of-way. Inspections done daily by full-time employees of Engineering/Public Works	General Funds	Active and ongoing	2002	Weak
Illicit Discharge Program	City of Alpharetta	Responds to complaints, including downstream inspection and sampling, locating violator, if possible, and requiring clean-up. Revised to match District Model Ordinance standards	General Funds	Active and ongoing	1995	Moderate
Dry Weather Screening	City of Alpharetta	Under MOA for NPDES Permit requirements. City monitors 9+ outfalls throughout year. Maintains outfall inventory. Investigates detected discharges. Also monitors 20 in-stream locations on Big Creek and its tributaries, investigates if problem appears. Has found illicit connections, leaks through program	General Funds	Active and ongoing	1998	Moderate
Education Programs	City of Alpharetta	City has Environmental Coordinator, works with Regional Clean Water Campaign. Provides educational material to public, businesses, homeowners associations on proper use of pesticides and fertilizers, disposal of toxic materials, participates in stream and river cleanups, has active Adopt-A-Stream and Adopt-A-Mile programs.	General Funds	Active and ongoing	1990	Moderate
Fulton Tributary Buffer Zone Ordinance	Fulton County	Required under Metropolitan River Protection Act (GA Code 12-5-440 et seq.). Requires 35-foot buffer on perennial tributaries to Chattahoochee	General Funds	Active and ongoing		

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Streambank Protection Ordinance	City of Roswell	Requires a 100-foot undisturbed buffer and 150-foot impervious surface setback on all designated streams in the City. Septic Tanks and drainfields are not allowed in the 150-foot buffer.	General Funds	Active and ongoing	June 19, 2000	Very effective in new development areas
Structural Control Measures	City of Roswell	City requires that proposed structural controls be from the Georgia Stormwater Management Manual. Other designs must be specifically approved by the City. City inspects its own facilities, will issue violation notices for private facilities. Owners can enter into a lake and pond partnership with the City and must meet operational, design and inspection requirements.	General Funds	Active and ongoing	Amended, 02/06/2003	Very effective in new development areas
Steep Slopes Ordinance	City of Roswell	Requires additional buffer depth or other protection measures on steep slopes adjacent to streams.	General Funds	Active and ongoing	December 02, 2002	Very effective in new development areas
Street Maintenance	City of Roswell	Transportation sweeps 360 miles of streets annually. Limited number of catch basins cleaned as part of regular street maintenance. Volunteer Adopt-A-Road program picks up litter	General Funds	Active and ongoing	Estimated circa 1980s	Limited (no data to correlate effectiveness)
Illicit Discharge Detection and Elimination	City of Roswell	Sixteen outfalls are screened annually. The areas are chosen using GA EPD criteria and standard forms are used. Random inspections and complaints also reveal violations. City requires elimination of discharge or connection when source is found. Sewer problems are reported to Fulton County, the responsible agency for sewers.	General Funds	Active and ongoing	Estimated 1995 with permit	Very effective
Education	City of Roswell	With the Keep Roswell Beautiful program, provides education to local owners and citizens on pet waste, proper lawn care and maintenance of facilities. Also coordinates volunteer river and stream cleanups, including Adopt-A Stream and River Awareness Day.	General Funds	Active and ongoing	Estimated 1995 with permit	Very effective

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District-Wide Watershed Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	As a part of this watershed management plan MS4 Phase I and Phase II communities will be required to adopt the following ordinances: Post Development Storm Water Management for New Development and Redevelopment, Illicit Discharge and Illegal Connection, and Stream Buffer Protection. As well as establishing municipal Good Housekeeping Practices.	Local Funds	Ongoing	2004 & 2005	Very
Long-Term Wastewater Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	Local wastewater systems will implement a policy on private wastewater systems, develop interim decentralized system plans with concept of merging into larger systems, a grease management program, and numerous sewer system programs (mapping, maintenance programs, Rehab identification and construction program and capacity certification program).	Local Funds	Ongoing	2005	Very

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

Table 6. MONITORING PLAN

PARAMETER(S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
FC	Georgia EPD, Water Protection Branch or local government	Recommended	2004	2005	TMDL Evaluation and Monitoring for 305(b) and 303(d) lists for Georgia

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities which will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Fulton County	Stenciling program	General Public	Ongoing
Fulton County	Utility bill inserts	General Public	Ongoing
Fulton County	Clean Water Campaign	General Public	Ongoing
Fulton County	Community watershed workshops	General Public	Ongoing
Fulton County	Stream clean ups	General Public	Ongoing
Fulton County	Adopt-A-Stream	General Public	Ongoing
Fulton County	Citizens participation program	General Public	Ongoing
Fulton County	Develop & submit print ads/public service announcements/press releases.	General Public	Ongoing
Fulton County	Develop & distribute educational packets to new septic tank permit applicants.	General Public	Ongoing
Fulton County	Conduct workshops at community meetings, reaching homeowners.	General Public	Ongoing
Fulton County	Conduct classroom demonstrations, reaching students.	General Public	Ongoing
Fulton County	Conduct dye testing on septic tanks.	General Public	Ongoing
Fulton County	Perform Fecal Coliform analysis in conjunction with above dye tests and analyze results.	General Public	Ongoing
Fulton County	Copies of <i>The Septic System Owner's Manual</i> by Lloyd Kahn, Blair Allen, & Julie Jones will be placed in every Fulton County Library and will be available for checkout by the general public.	General Public	Ongoing
Fulton County	Grease Abatement Education	Restaurant Operators	Ongoing
Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	Local Governments will participate in a regional public education program such as the Clean Water Campaign, or establish its own program. The program must address water quality issues and the promotion of water conservation.	General Public	2004

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- Accomplishment of management practices or activities - outreach activities
- Installation of BMPs

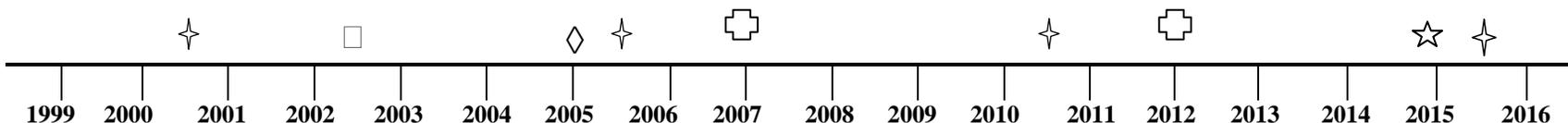
to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
CMOM Program	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Emergency Sanitary Sewer Evaluation Study (ESSES)	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Interim Collection System Master Plan	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Survey of Sanitary Sewer	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Sanitary Sewer Modeling	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Flow Monitoring	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Improvements in Wastewater Treatment	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Database and Tracking of Un-sewered Areas	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Permitting of Septic Systems	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Educational Efforts (Pet Waste)	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Providing sewer service to Developed Areas by 2030	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Improving Waste Receptacles	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Reduction in agricultural land use through conversion to developed property	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Reduction in habitat through development	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
District-Wide Watershed Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area			Refer to the District-wide Watershed Management Plan
Long-Term Wastewater Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area			Refer to the Long-Term Wastewater Management Plan

PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by Georgia EPD.



- Scheduled EPD basin Group Monitoring ✦
- TMDL Completed □
- TMDL Implementation Plan Accepted ◇
- Evaluation of implementation plan/water quality improvement ⊕
- Project Attainment ☆

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TMDL Implementation Plan for Big Creek (Hwy 400 to Chattahoochee River)
HUC10# 0313000110

APPENDIX A

STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Kevin Johns / Parsons	5320 Mill Run Drive	Marietta	GA	30068	770-992-7470	kevin.johns@parsons.com
Ben G. Stratham / Sandy Spring Fulton Clean & Beautiful					770-475-9214	stratham@mindspring.com
Madelene Reamy / Keep SSNF Beautiful	2394 Harrington Drive	Decatur	GA	30033	404-318-1720	mreamy@mindspring.com
Alice Champagne / Upper Chattahoochee Riverkeeper	916 Joseph Lowery Blvd	Atlanta	GA	30318	404-352-9828	achampagne@ucriverkeeper.org
Bill Bierbaum / Martins Landing Homeowners Board	185 Southwind Circle	Roswell	GA	30076	770-998-4663	bill@bierbaum.com
Camille Scent	1345 Parkmont Dr.	Roswell	GA	30076		earthdancing@earthlink.net
Diana Weber	950 Jones Road	Roswell	GA	30075	770-643-1621	diweber@hotmail.com
Andrea Pinabell / Stormwater Management Inc.	430 Lindbergh Drive #F3	Atlanta	GA	30305	404-846-5785	andreap@stormwaterinc.com
Ben R. Jordan / The Coca-Cola Company	P.O. Box 1734	Atlanta	GA	30301		bjordan@na.ko.com
Bruce W. Thurlby / Archaea Solutions, Inc.	100 Lloyd Avenue, Suite D	Tyrone	GA	30290	770-487-5303	bruce.thurlby@archaseasolutions.com
Bryan Barrett / USDA	355 East Hancock Ave	Athens	GA	30601	706-546-2039	bryan.barrett@ga.usda.gov
Buddy Belflower / USDA/NRCS	734 Crescent Dr	Gainesville	GA	30501	770-536-6981	buddy.belflower@ga.usda.gov
Chad Knudsen / Ecological Solutions					770-998-7848	chadknudsen@ecologicalsolutions.net
Chrissy Marlowe / GA DCA	225 West Broad St.	Athens	GA	30601	706-425-3077	cmarlowe@dca.state.ga.us
Chuck Budinger / Corporate Env. Risk Management	2116 Monroe Drive, Suite 110	Atlanta	GA	30324	678-999-0173	cbudinger@cerm.com
David Smith	740 Hunterhill Court	Roswell	GA	30075	770-641-3096	davidsmith@ecologicalsolutions.net
David Smith / Ecological Solutions	630 Colonial Park Drive, Suite 200	Roswell	GA	30075	770-998-7848	davidsmith@ecologicalsolutions.net
Duncan Cottrell / Adopt-A-Stream Coordinator / Upper Etowah River Alliance					770-735-2778	duncancottrell@yahoo.com
Geneva Nelson / Foundation for Global Community	899 Chippendale Lane	Norcross	GA	30093	770-564-2730	genevaan@yahoo.com
Jason Barringer	2446 Fallview Terrace	East Point	GA	30344		forrain2@hotmail.com

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Kevin Johnson / The Trust for Public land	1447 Peachtree Street Suite 601	Atlanta	GA	30309	404.873.7306	kevin.johnson@tpl.org
Kimberly Aji / Jordan Jones and Goulding	6801 Governors Lake Parkway	Norcross	GA	30071	6783330232	kaji@jjg.com
Linda MacGregor / McKenzie MacGregor Incorporated	3455 Lawrenceville Suwanee Road, Suite A	Suwanee	GA	30024	678-546-9450	lmacgregor@mckmacg.com
Max Walker	941 Pine Roc Drive	Stone Mountain	GA	30083	770/469/4786	MAXWALKER@mindspring.com
Rose Mary Seymour / UGA - Griffin Campus	1109 Experiment St	Griffin	GA	30223	770 229-3214	rseymour@griffin.uga.edu

APPENDIX B
UPDATES TO THIS PLAN

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.

Foe Killer Creek

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Foe Killer Creek	Fulton County	7 miles	Fishing	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	Urban Runoff (UR)	5%

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
 - Field surveys
 - Review of land cover data
 - Evaluation of sources
-

ARC staff has reviewed the most recent landuse data available (year 2001) for the area and will be updating the watershed description found in the TMDLs. This process involved first verifying that the correct watershed was used in the development of the TMDL. ARC staff has updated watershed delineations and will provide the updated watershed boundaries to GA EPD.

ARC has conducted a visual field survey on this stream segment due to limited recent stream walk information. The visual field survey is attached. As a part of this visual field survey we reviewed existing point source data provided by GA EPD as well as reviewing 2003 aerial imagery. Using guidance documents provided by the State, a field assessment was conducted which included a windshield survey of the area adjacent to the stream and a foot survey where access was allowed. The summary of findings for this visual field survey is as follows. There is one permitted point source discharges in the Foe Killer Creek watershed. The field survey and background investigation identified non-point sources such as sanitary sewer overflow or line failure, septic system failure, and animal waste. These are the most likely potential sources of fecal coliform pollution in and around the TMDL segment. Proposed management practices to address fecal coliform have been provided by local governments and are outlined in the 2004 Foe Killer Creek TMDL Implementation Plan in tables 5, 6 and 7. Sanitary sewer overflows are considered a large source of fecal coliform bacteria affecting this entire TMDL segment. Leaking or failing septic tank systems and illicit connections of sanitary sewers are also considered large sources affecting sporadic areas of the Foe Killer Creek TMDL segment. Animal waste from wildlife, horse farms, or domestic animals is considered a moderate source of fecal coliform bacteria affecting this entire TMDL segment. Illicit sewer connections and urban runoff are identified as small to negligible sources of fecal coliform in the Foe Killer Creek TMDL segment watershed.

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The *SOURCES SHOULD BE RANKED*** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed affected, the stream miles affected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform	SSOs	40 %	Large	Overflows from sanitary sewer system due to blockages from grease, roots, vandalism / pipe failures
Fecal Coliform	Septic tank systems	30 %	Large	Leaking / runoff from failing septic tank systems, including faulty drain fields
Fecal Coliform	Animal wastes	15 %	Moderate	Nonpoint source - pets and wildlife
Fecal Coliform	Illicit connections	10 %	Small	Improper connections of sanitary sewer flows to the storm drain system
Fecal Coliform	Urban Runoff	5 %	Negligible	Nonpoint source / stormwater runoff

V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities, which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

As a first step an initial meeting was held with local government agencies to determine possible sources of pollution as well as any preventative / corrective measures in place or planned for the area. The local government agencies in the advisory group for this segment are listed in Table 4.

The most important part of developing these implementation plans is locating stakeholders in this area. ARC staff searched for stakeholders listed on existing mailing lists (Home Owner Associations, Adopt-A-Stream, Watershed Alliance groups, etc.) to invite to the public meetings. The staff also gathered tax assessment information on landowners who owned more than 50 acres in the county. These stakeholders were considered large landowners and included public, private, and commercial types of property. Businesses listed on EPA's Enforcement & Compliance History Online (ECHO) website (www.epa.gov/echo) that were located in the area were also invited to the public meetings. A list of elected officials, chambers of commerce, parks & recreation departments, NRCS, GA Soil & Water Conservation Commission, and National Park Service representatives were also invited to the public meetings. ARC staff also included schools, libraries, and large apartment complexes in the public meeting mailing list.

The next outreach activity was to develop a website for this project (www.atlantaregional.com/cleanerstreams). The website provided a variety of information and access opportunities for the TMDL Implementation Plan process. The website identified the local government participants, provided a list and map of the TMDL stream segments. The TMDL documents, the 303(d) list and other background information was available on this website. An online sign-up and feed-back form was included on the website so that people could sign up to be a stakeholder. These stakeholder names and other stakeholders can be found in Appendix A. In an effort to provide further detailed information on the TMDL stream segments and their watersheds, an interactive GIS map was developed as a part of the website. This interactive mapping technology allows individuals to zoom in to the area they are interested in and print out maps. The website also included access to a 10-minute video and slide presentation that explains the implementation plan development process and provides online feedback thus creating a virtual stakeholder public meeting and involvement process. This video resource was made available from May 3, 2004 to August 3, 2004. During this three month period a total of 129 visitors accessed the virtual public meeting. It was confirmed that public libraries in the area have high speed internet access and that the virtual public meeting could be viewed on computers at any public library in the metro Atlanta area.

The next step in this process involved holding 4 initial public meetings in May 2004 to educate stakeholders about this process and solicit input. A total of 43 persons attended the public meetings.

Methods used to inform the general public about the implementation plan development process and the public meetings include: having major environmental groups send out meeting notices in their electronic newsletters, distributing press releases, purchasing newspaper advertising space, sending out numerous e-mails announcing the initial meetings and finally mailing out 3500 meeting announcements to local groups (home owner associations, watershed alliances, etc.), businesses, large landowners, elected officials, Chambers of Commerce, Parks & Recreation Departments, NRCS, and the National Park Service.

After input had been received from our local government advisory group and stakeholders a draft implementation plan was developed. This draft document was made available to all stakeholders for discussion and input at the 4 public meetings held in June 2004. A total of 37 persons attended the public meetings.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

Table 4. COMMITTEE MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
GA EPD, Water Protection Branch	4220 International Pkwy, Suite 101	Atlanta	GA	30354	(404) 675-1751	
GA Adopt-A-Stream	4220 International Pkwy, Suite 101	Atlanta	GA	30354	(404) 675-1636	
Georgia Soil and Water Conservation Commission	1500 Klondike Road Suite A109	Conyers	GA	30094	770-761-3020	kshahlaee@gaswcc.org
Fulton County Public Works (Nick Ammons)	141 Pryor St., S.W., Suite 6001	Atlanta	GA	30303	404-730-7589	
Fulton County Environmental Health Department (Pearl Gordon)	99 Jessie Hill Jr., Dr., Room 101	Atlanta	GA	30303	404-730-1308	
Fulton County Cooperative Extension Service	141 Pryor St., Suite 1031	Atlanta	GA	30303	404-730-7000	
Stu Moring / City of Roswell	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	smoring@ci.roswell.ga.us
Charles Richards / City of Roswell	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	crichards@ci.roswell.ga.us
Carter Lucas / City of Roswell	Planning and Zoning 38 Hill Street, Suite G-30	Roswell	GA	30075	(770) 641-3780	clucas@ci.roswell.ga.us
Rebecca McDonough / City of Alpharetta	Engineering and Public Works 1790 Hembree Road	Alpharetta	GA	30004	(678) 297-6200	rmcdonough@alpharetta.ga.us
Steve Dempsey / Forsyth County	Engineering Department 110 East Main St., Suite 120	Cumming	GA	30040	(770) 781-2165	
Scott Morgan / City of Cumming	Dept. of Planning and Zoning 100 Main Street	Cumming	GA	30040	(770) 781-2024	s.morgan@cityofcumming.net
Earl Burrell, Fulton County	Department of Public Works 141 Pryor St., SW, Suite 6001	Atlanta	GA	30303	(404) 730-7462	earl.burrell@co.fulton.ga.us
NRCS (Marietta, GA Office)	678 South Cobb Drive, Suite 150	Marietta	GA	30060	770-792-0647	
Metropolitan North Georgia Water Planning District	40 Courtland Street, NE	Atlanta	GA	30303	404-463-3260	

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

Table 5. MANAGEMENT MEASURES AND ACTIVITIES

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
CMOM Program	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	In Development	2005	Very
Emergency Sanitary Sewer Evaluation Study (ESSES)	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Completed in 2001	Completed in 2001	Moderate
Interim Collection System Master Plan	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Completed in 2002	Completed in 2002	Moderate
Survey of Sanitary Sewer	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Begin in 2003	2003	Moderate
Sanitary Sewer Modeling	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Planned for 2005	2005	Very
Flow Monitoring	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1988	Very
Improvements in Wastewater Treatment	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1912	Very
Database and Tracking of Un-sewered Areas	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	2005	Moderate
Permitting of Septic Systems	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	1952	Moderate
Educational Efforts (Pet Waste)	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	1998	Weak
Providing sewer service to Developed Areas by 2030	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	1990	Moderate

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Improving Waste Receptacles	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	2003	Weak
Reduction in agricultural land use through conversion to developed property	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	1808	Moderate
Reduction in habitat through development	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	1808	Moderate
IAW O.C.G.A. 290-5-26	Fulton County Environmental Health Department	Rules and regulations for installation and repair of on-site sewage management systems.	Fulton County General Fund	Enforced	June 30, 1980	Moderate
Stormwater Management Ord. (Code Secs. 5-201 to 5-223)	City of Alpharetta	Protects streams by prohibiting illicit discharges, regulating post-development runoff quality & quantity, managing stormwater system. Revised to meet requirements of model ordinances.	General Funds	Active and ongoing	1995 (Revised March 2004)	Moderate
Stormwater Design Manual	City of Alpharetta	Requirement for Stormwater Ordinance. Sets design guidelines and requirements for stormwater systems.	General Funds	Active and ongoing	1995	Moderate
Soil Erosion and Sedimentation Control Ord. (Code Secs.5-98 to 5-106)	City of Alpharetta	City is designated local issuing authority under MOA w/GA EPD. Requires state E&S buffers in addition to other required buffers.	General Funds	Active and ongoing	1989 (Updated in 2004)	Moderate
Chattahoochee River Protection Ordinance (Code Secs 5-118 to 5-136)	City of Alpharetta	Required under Metropolitan River Protection Act (GA Code 12-5-440 et seq.). Requires 35-foot buffer on flowing streams draining to Chattahoochee	General Funds	Active and ongoing	1985	Weak
Water Supply Watershed Protection (Unified Development Code Section 3.3.12)	City of Alpharetta	Required under GA Part 5 Criteria. Requires 100-foot undisturbed buffer and 150-foot impervious surface setback on perennial streams w/i 7 miles of Roswell Big Creek intake. Development greater than 25% impervious surface must treat first 1.2 in. of rainfall for water quality	General Funds	Active and ongoing	2001	Moderate
Metropolitan North Georgia Water Planning District Model Ordinances	City of Alpharetta	Revised and amended existing ordinances to meet model ordinance requirements. City minimum stream buffer is 50 feet.	General Funds	Active and ongoing	2004	Moderate

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Stormwater Structural Control Maintenance	City of Alpharetta	Inspect and maintain 32 City-owned stormwater BMPs: stormceptors and oil/water separators inspected every 6 mos., detention ponds yearly. All cleaned and maintained as needed	General Funds	Active and ongoing	2000	Weak
Maintaining Roadside Drainage Systems	City of Alpharetta	Remove excess sediment and debris from storm inlets, catch, basins, pipes and ditches; maintain vegetation on roadside shoulders and ditches under City Landscape Contract	General Funds	Active and ongoing	2000	Weak
Roadside Litter Removal	City of Alpharetta	Remove litter from right-of-way. Inspections done daily by full-time employees of Engineering/Public Works	General Funds	Active and ongoing	2002	Weak
Illicit Discharge Program	City of Alpharetta	Responds to complaints, including downstream inspection and sampling, locating violator, if possible, and requiring clean-up. Revised to match District Model Ordinance standards	General Funds	Active and ongoing	1995	Moderate
Dry Weather Screening	City of Alpharetta	Under MOA for NPDES Permit requirements. City monitors 9+ outfalls throughout year. Maintains outfall inventory. Investigates detected discharges. Also monitors 20 in-stream locations on Big Creek and its tributaries, investigates if problem appears. Has found illicit connections, leaks through program	General Funds	Active and ongoing	1998	Moderate
Education Programs	City of Alpharetta	City has Environmental Coordinator, works with Regional Clean Water Campaign. Provides educational material to public, businesses, homeowners associations on proper use of pesticides and fertilizers, disposal of toxic materials, participates in stream and river cleanups, has active Adopt-A-Stream and Adopt-A-Mile programs.	General Funds	Active and ongoing	1990	Moderate
Fulton Tributary Buffer Zone Ordinance	Fulton County	Required under Metropolitan River Protection Act (GA Code 12-5-440 et seq.). Requires 35-foot buffer on perennial tributaries to Chattahoochee	General Funds	Active and ongoing		

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Streambank Protection Ordinance	City of Roswell	Requires a 100-foot undisturbed buffer and 150-foot impervious surface setback on all designated streams in the City. Septic Tanks and drainfields are not allowed in the 150-foot buffer.	General Funds	Active and ongoing	June 19, 2000	Very effective in new development areas
Structural Control Measures	City of Roswell	City requires that proposed structural controls be from the Georgia Stormwater Management Manual. Other designs must be specifically approved by the City. City inspects its own facilities, will issue violation notices for private facilities. Owners can enter into a lake and pond partnership with the City and must meet operational, design and inspection requirements.	General Funds	Active and ongoing	Amended, 02/06/2003	Very effective in new development areas
Steep Slopes Ordinance	City of Roswell	Requires additional buffer depth or other protection measures on steep slopes adjacent to streams.	General Funds	Active and ongoing	December 02, 2002	Very effective in new development areas
Street Maintenance	City of Roswell	Transportation sweeps 360 miles of streets annually. Limited number of catch basins cleaned as part of regular street maintenance. Volunteer Adopt-A-Road program picks up litter	General Funds	Active and ongoing	Estimated circa 1980s	Limited (no data to correlate effectiveness)
Illicit Discharge Detection and Elimination	City of Roswell	Sixteen outfalls are screened annually. The areas are chosen using GA EPD criteria and standard forms are used. Random inspections and complaints also reveal violations. City requires elimination of discharge or connection when source is found. Sewer problems are reported to Fulton County, the responsible agency for sewers.	General Funds	Active and ongoing	Estimated 1995 with permit	Very effective
Education	City of Roswell	With the Keep Roswell Beautiful program, provides education to local owners and citizens on pet waste, proper lawn care and maintenance of facilities. Also coordinates volunteer river and stream cleanups, including Adopt-A Stream and River Awareness Day.	General Funds	Active and ongoing	Estimated 1995 with permit	Very effective

District-Wide Watershed Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	As a part of this watershed management plan MS4 Phase I and Phase II communities will be required to adopt the following ordinances: Post Development Storm Water Management for New Development and Redevelopment, Illicit Discharge and Illegal Connection, and Stream Buffer Protection. As well as establishing municipal Good Housekeeping Practices.	Local Funds	Ongoing	2004 & 2005	Very
Long-Term Wastewater Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	Local wastewater systems will implement a policy on private wastewater systems, develop interim decentralized system plans with concept of merging into larger systems, a grease management program, and numerous sewer system programs (mapping, maintenance programs, Rehab identification and construction program and capacity certification program).	Local Funds	Ongoing	2005	Very

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

Table 6. MONITORING PLAN

PARAMETER(S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
FC	Georgia EPD, Water Protection Branch or local government	Recommended	2004	2005	TMDL Evaluation and Monitoring for 305(b) and 303(d) lists for Georgia

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities, which will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Fulton County	Stenciling program	General Public	Ongoing
Fulton County	Utility bill inserts	General Public	Ongoing
Fulton County	Clean Water Campaign	General Public	Ongoing
Fulton County	Community watershed workshops	General Public	Ongoing
Fulton County	Stream clean ups	General Public	Ongoing
Fulton County	Adopt-A-Stream	General Public	Ongoing
Fulton County	Citizens participation program	General Public	Ongoing
Fulton County	Develop & submit print ads/public service announcements/press releases.	General Public	Ongoing
Fulton County	Develop & distribute educational packets to new septic tank permit applicants.	General Public	Ongoing
Fulton County	Conduct workshops at community meetings, reaching homeowners.	General Public	Ongoing
Fulton County	Conduct classroom demonstrations, reaching students.	General Public	Ongoing
Fulton County	Conduct dye testing on septic tanks.	General Public	Ongoing
Fulton County	Perform Fecal Coliform analysis in conjunction with above dye tests and analyze results.	General Public	Ongoing
Fulton County	Copies of <i>The Septic System Owner's Manual</i> by Lloyd Kahn, Blair Allen, & Julie Jones will be placed in every Fulton County Library and will be available for checkout by the general public.	General Public	Ongoing
Fulton County	Grease Abatement Education	Restaurant Operators	Ongoing
Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	Local Governments will participate in a regional public education program such as the Clean Water Campaign, or establish its own program. The program must address water quality issues and the promotion of water conservation.	General Public	2004

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- Accomplishment of management practices or activities - outreach activities
- Installation of BMPs

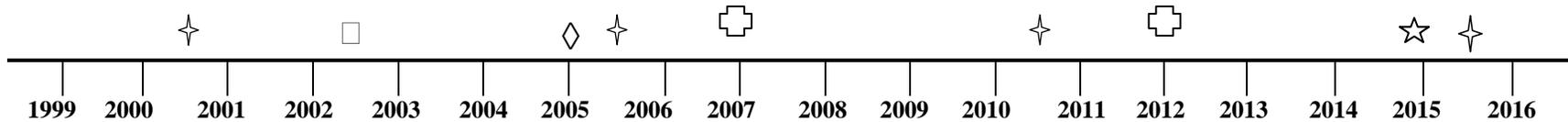
to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
CMOM Program	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Emergency Sanitary Sewer Evaluation Study (ESSES)	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Interim Collection System Master Plan	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Survey of Sanitary Sewer	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Sanitary Sewer Modeling	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Flow Monitoring	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Improvements in Wastewater Treatment	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Database and Tracking of Un-sewered Areas	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Permitting of Septic Systems	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Educational Efforts (Pet Waste)	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Providing sewer service to Developed Areas by 2030	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Improving Waste Receptacles	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Reduction in agricultural land use through conversion to developed property	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
Reduction in habitat through development	Fulton County			Refer to Fulton County Watershed Protection Plan (June 2002)
District-Wide Watershed Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area			Refer to the District-wide Watershed Management Plan
Long-Term Wastewater Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area			Refer to the Long-Term Wastewater Management Plan

PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by Georgia EPD.



- Scheduled EPD basin Group Monitoring 
- TMDL Completed 
- TMDL Implementation Plan Accepted 
- Evaluation of implementation plan/water quality improvement 
- Project Attainment 

Prepared By:	Matt Harper		
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Date Submitted to EPD:	August 30, 2004	Revision:	#1

The preparation of this report was financed in part through a grant from the U.S. Environmental Protection Agency under the provisions of Section 106 or Section 604(b) of the Federal Water Pollution Control Act, as amended.

APPENDIX A
STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Andrea Pinabell / Stormwater Management Inc.	430 Lindbergh Drive #F3	Atlanta	GA	30305	404-846-5785	andreap@stormwaterinc.com
Ben R. Jordan / The Coca-Cola Company	P.O. Box 1734	Atlanta	GA	30301		bjordan@na.ko.com
Bruce W. Thurlby / Archaea Solutions, Inc.	100 Lloyd Avenue, Suite D	Tyrone	GA	30290	770-487-5303	bruce.thurlby@archaseasolutions.com
Bryan Barrett / USDA	355 East Hancock Ave	Athens	GA	30601	706-546-2039	bryan.barrett@ga.usda.gov
Buddy Belflower / USDA/NRCS	734 Crescent Dr	Gainesville	GA	30501	770-536-6981	buddy.belflower@ga.usda.gov
Chad Knudsen / Ecological Solutions					770-998-7848	chadknudsen@ecologicalsolutions.net
Chrissy Marlowe / GA DCA	225 West Broad St.	Athens	GA	30601	706-425-3077	cmarlowe@dca.state.ga.us
Chuck Budinger / Corporate Env. Risk Management	2116 Monroe Drive, Suite 110	Atlanta	GA	30324	678-999-0173	cbudinger@cerm.com
David Smith	740 Hunterhill Court	Roswell	GA	30075	770-641-3096	davidsmith@ecologicalsolutions.net
David Smith / Ecological Solutions	630 Colonial Park Drive, Suite 200	Roswell	GA	30075	770-998-7848	davidsmith@ecologicalsolutions.net
Duncan Cottrell / Adopt-A-Stream Coordinator / Upper Etowah River Alliance					770-735-2778	duncancottrell@yahoo.com
Geneva Nelson / Foundation for Global Community	899 Chippendale Lane	Norcross	GA	30093	770-564-2730	genevaan@yahoo.com
Jason Barringer	2446 Fallview Terrace	East Point	GA	30344		forrain2@hotmail.com
Kevin Johnson / The Trust for Public Land	1447 Peachtree Street Suite 601	Atlanta	GA	30309	404.873.7306	kevin.johnson@tpl.org
Kimberly Ajy / Jordan Jones and Goulding	6801 Governors Lake Parkway	Norcross	GA	30071	6783330232	kajy@jjg.com
Linda MacGregor / McKenzie MacGregor Incorporated	3455 Lawrenceville Suwanee Road, Suite A	Suwanee	GA	30024	678-546-9450	lmacgregor@mckmacg.com
Max Walker	941 Pine Roc Drive	Stone Mountain	GA	30083	770/469/4786	MAXWALKER@mindspring.com
Rose Mary Seymour / UGA - Griffin Campus	1109 Experiment St	Griffin	GA	30223	770 229-3214	rseymour@griffin.uga.edu
Patti Cook / Hiram High School	702 Ballentine Dr	Hiram	GA	30141	7704431182	pcook@paulding.k12.ga.us

TMDL Implementation Plan for Foe Killer Creek
HUC10# 0313000110

Rodney Warner	210 Boundary Tree Dr.	Ellenwood	GA	30294		
Pam Caird					770-751-9716	pjcaird@aol.com
Robyn Stalson					770-454-6526	rstalson@bellsouth.net
Kevin Johns / Parsons	5320 Mill Run Drive	Marietta	GA	30068	770-992-7470	kevin.johns@parsons.com
Ben G. Stratham / Sandy Spring Fulton Clean & Beautiful					770-475-9214	stratham@mindspring.com
Madelene Reamy / Keep SSNF Beautiful	2394 Harrington Drive	Decatur	GA	30033	404-318-1720	mreamy@mindspring.com
Earnie W. Cortis	2686 Farmstead	Smyrna	GA		770-436-8873	uniproinc@aol.com
Alice Champagne / Upper Chattahoochee Riverkeeper	916 Joseph Lowery Blvd	Atlanta	GA	30318	404-352-9828	achampagne@ucriverkeeper.org

APPENDIX B
UPDATES TO THIS PLAN

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.

APPENDIX C
VISUAL FIELD SURVEY
For
Foe Killer Creek TMDL Segment
(Fulton County)
In the
Chattahoochee River Basin
July 2004

Visual Field Survey
For
Foe Killer Creek TMDL Segment
(Fulton County)
In the
Chattahoochee River Basin

July 2004

Prepared by the Atlanta Regional Commission with the support of the Environmental Protection Division of the Georgia Department of Natural Resources

The preparation of this report was financed in part through a grant from the United States Environmental Protection Agency under the provisions of Section 106 of the Federal Water Pollution Control Act, as amended.

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1.0 INTRODUCTION

1.1 Location

Foe Killer Creek is located in the northern portion of the Atlanta Metropolitan region in the City of Alpharetta and in unincorporated Fulton County. While the TMDL stream segment is located within both the City and County, the majority of the watershed lies in the City of Alpharetta. The segment begins approximately $\frac{3}{4}$ mile upstream of the crossing on Mayfield Road and ends at its confluence with Big Creek.

1.2 Watershed Description

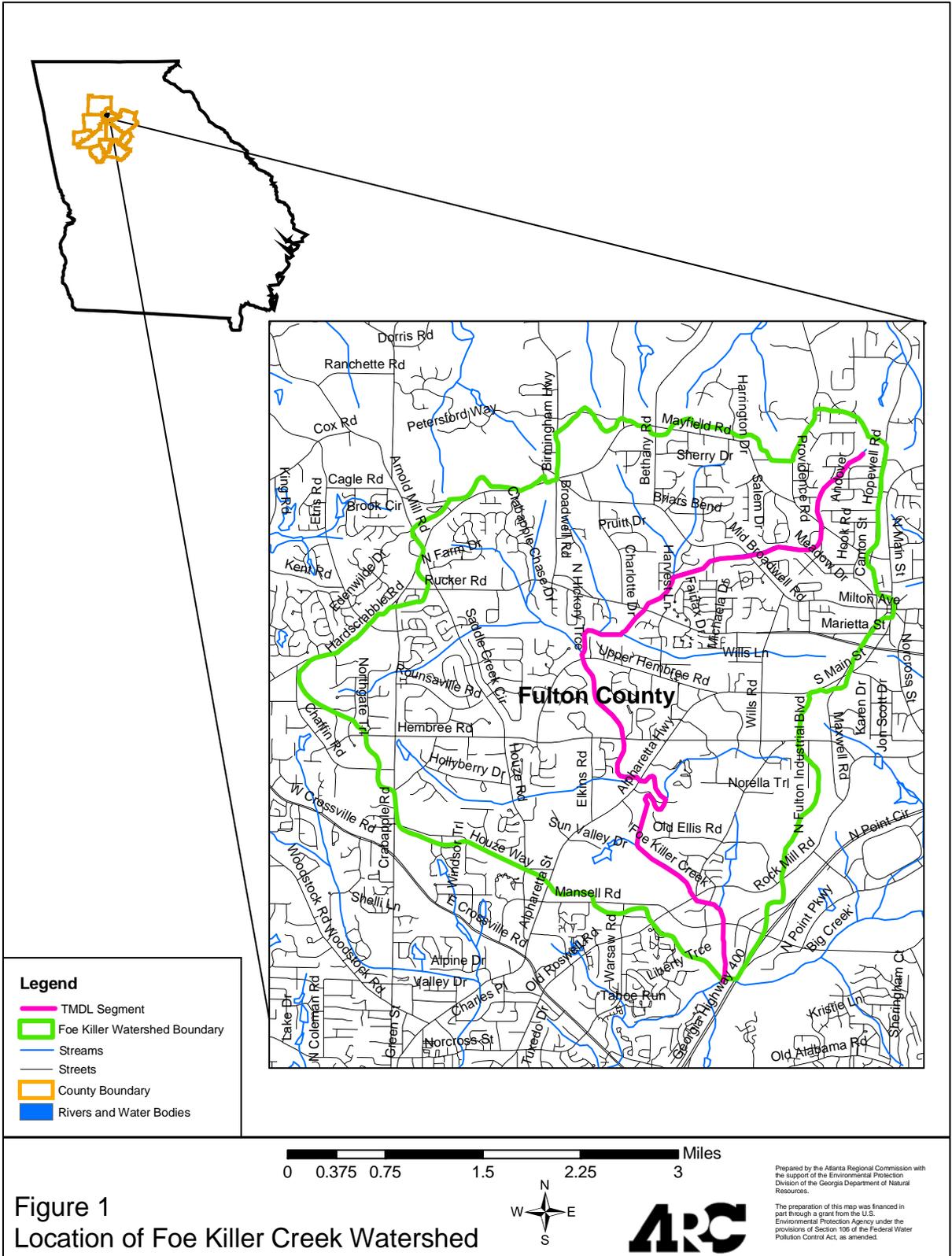
The Foe Killer Creek TMDL segment watershed is comprised of 7745 acres of land within Fulton County and is located within a portion of HUC 12 – 031300011004 of HUC 10 – 0313000110. Based on the ARC 2001 Land Cover, mapping of the watershed shows that land cover within the watershed is 49% medium density residential and over 20% commercial. The percentages of land cover are presented below in Table 1. Table 2 outlines how ARC’s land cover categories have been aggregated into the categories used for this project. A map showing land use in the watershed is included as Figure 2.

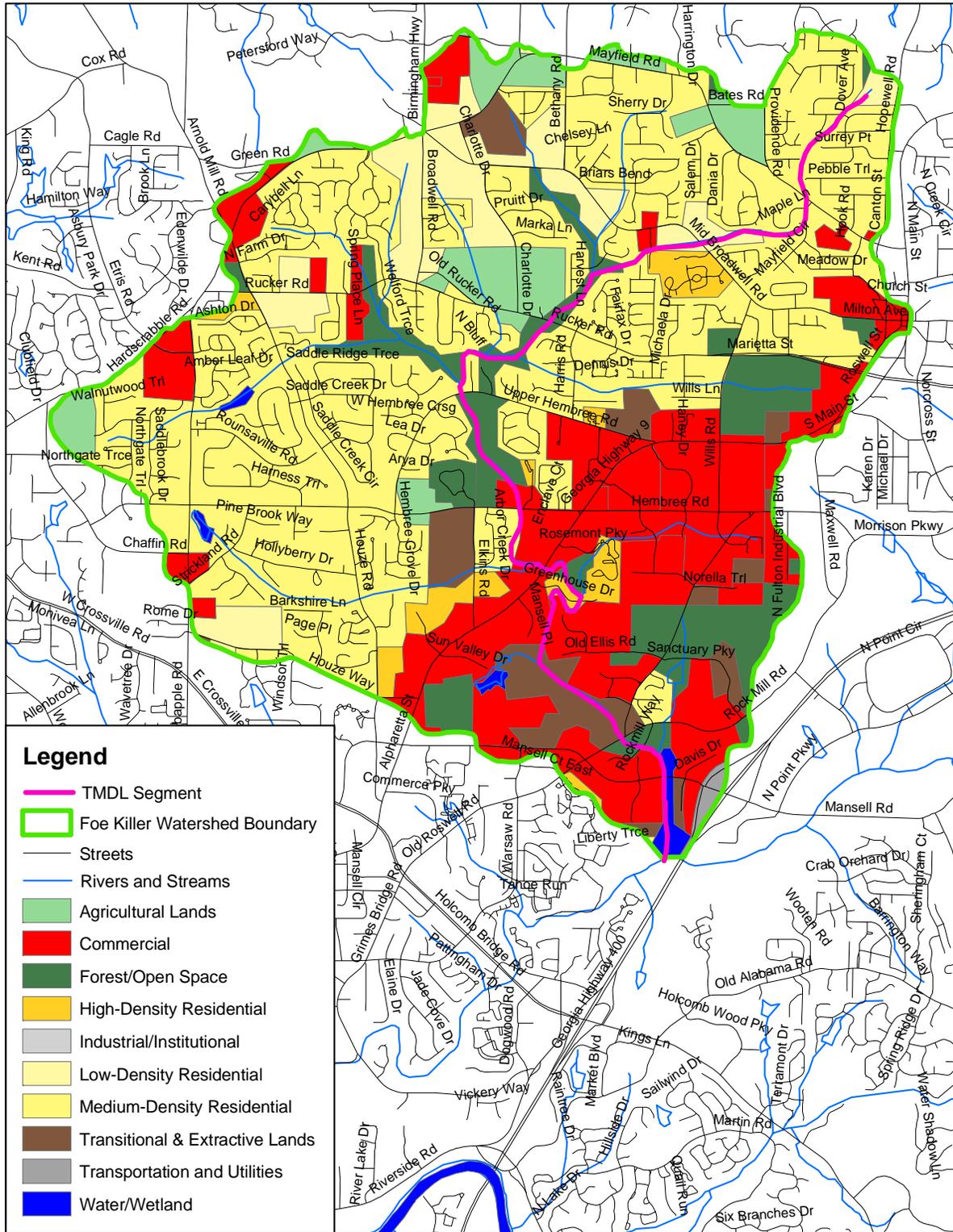
Table 1. Watershed Land Cover

Land Cover Classification	Area (Acres)	% of Total Area	Aggregated ARC Land Cover Codes
Medium-Density Residential	3822.18	49.35%	112
Commercial	1708.96	22.07%	12, 15, 121
Forest/Open Space	690.94	8.92%	40, 171, 172, 173
Low-Density Residential	509.42	6.58%	111
Agricultural Lands	367.60	4.75%	21, 22, 23, 24
Transitional & Extractive Lands	358.22	4.63%	17, 74, 75, 76
High-Density Residential	212.80	2.75%	113, 119, 117
Water/Wetland	51.87	0.67%	51, 53, 60
Transportation and Utilities	22.93	0.30%	14, 145
Total Acres	7744.92	100.00%	

Table 2. TMDL Watershed Land Cover Matrix (Aggregated ARC Land Cover Categories)

Aggregated Category	Description of Original ARC Categories	ARC Land Cover Code
<i>Commercial</i>	Commercial and Services	12
	Industrial and Commercial Complexes	15
	Intensive Institutional	121
<i>Industrial/Institutional</i>	Industrial	13
<i>Transportation & Utilities</i>	Transportation, Communication & Utilities	14
	Limited Access Highways	145
<i>Agricultural Lands</i>	Agriculture-Cropland and Pasture	21
	Agriculture-Orchards, Vineyards and Nurseries	22
	Agriculture-Confined Feeding Operations	23
	Agriculture-Other	24
<i>Forest / Open Space</i>	Forest	40
	Golf Courses	171
	Cemeteries	172
	Parks	173
<i>Water / Wetlands</i>	Rivers	51
	Reservoirs, Lakes, and Ponds	53
	Wetlands	60
<i>Transitional & Extractive Lands</i>	Other Urban	17
	Bare Exposed Rocks	74
	Quarries, Gravel Pits, and Strip Mineds	75
	Transitional Areas	76
<i>Low-Density Residential</i>	Low Density Single Family Residential	111
<i>Medium-Density Residential</i>	Medium Density Single Family Residential	112
<i>High-Density Residential</i>	High Density Residential	113
	Multifamily Residential	117
	Mobile Home Parks	119





Legend

- TMDL Segment
- Foe Killer Watershed Boundary
- Streets
- Rivers and Streams
- Agricultural Lands
- Commercial
- Forest/Open Space
- High-Density Residential
- Industrial/Institutional
- Low-Density Residential
- Medium-Density Residential
- Transitional & Extractive Lands
- Transportation and Utilities
- Water/Wetland

Figure 2
ARC 2001 Land Cover for
Foe Killer Creek Watershed

0 0.5 1 1.5 2 Miles



Prepared by the Atlanta Regional Commission with the support of the Environmental Protection Division of the Georgia Department of Natural Resources.
 The preparation of this map was financed in part through a grant from the U.S. Environmental Protection Agency under the provisions of Section 106 of the Federal Water Pollution Control Act, as amended.

2.0 METHODOLOGY

Prior to beginning the field study, data from the 2001 ARC Source Water Assessment Project were studied to determine the locations of any known point sources and potential individual sources of pollution in relation to the area of interest. Known potential individual sources of pollution located in the Foe Killer Creek TMDL segment watershed are shown in Figure 3. Additionally, aerial photos were compiled and used to further evaluate land use along the stream prior to the beginning of field observations.

Using guidance documents provided by the state, a field assessment of the watershed was conducted. The initial step was a windshield survey of the watershed area adjacent to the Foe Killer Creek TMDL stream segment. There are 12 paved roads crossing the Foe Killer Creek TMDL segment. All of these road crossings were visited as part of the windshield survey. Following completion of the windshield survey, a foot survey of the stream segment was performed where access permitted. The purpose of the stream segment walk was to identify and observe possible sources of pollution. Observations were documented and captured in photographs of the stream channel and its surroundings.

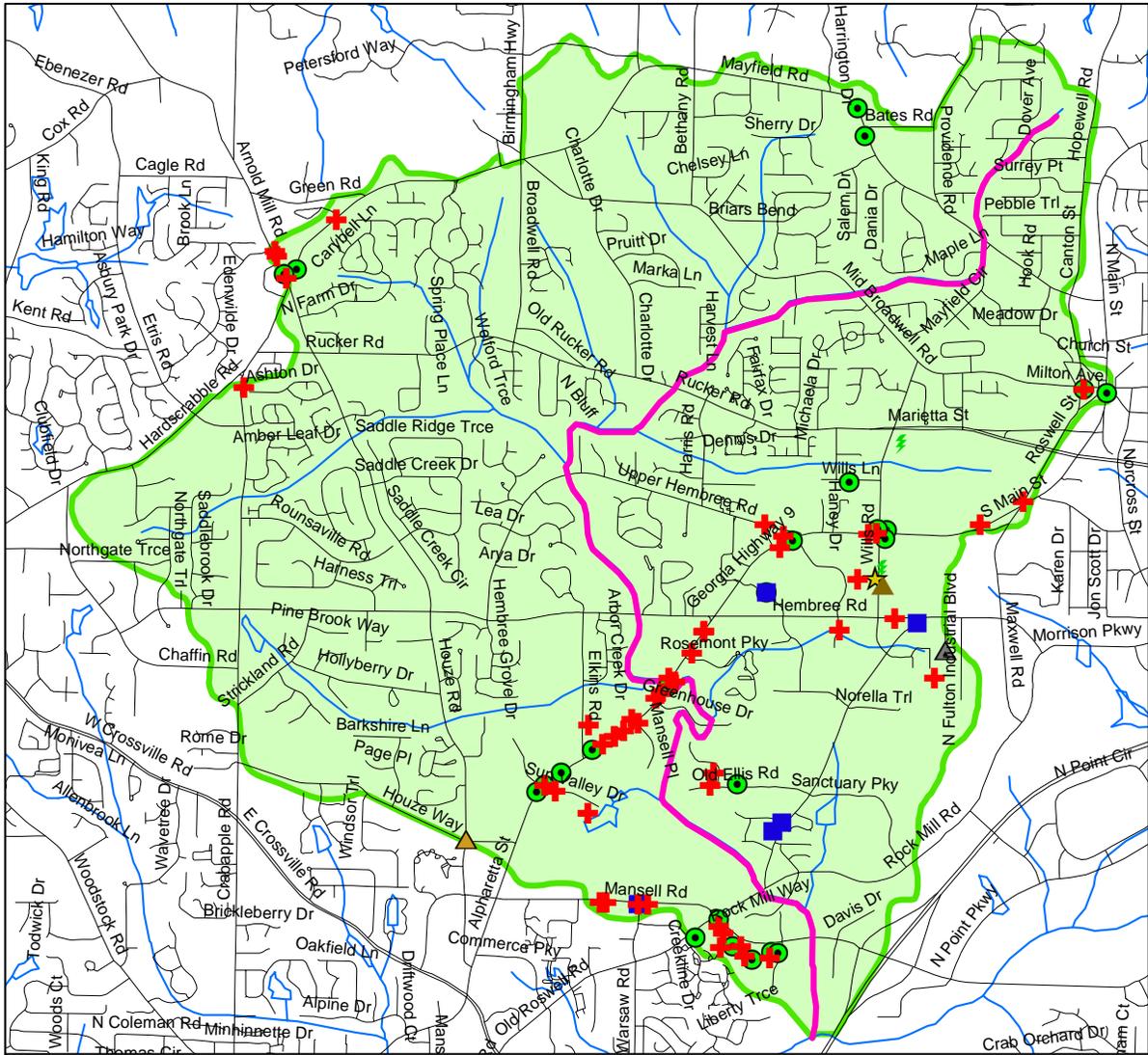
3.0 FIELD FINDINGS

3.1 General Characteristics

The field findings discussed here are the results of the visual survey performed largely on foot throughout the designated segment on June 28, 2004. The land cover in the area was verified in addition to careful observations of the current conditions in the stream and its surroundings. A map of included images taken during the visual field survey is shown as Figure 4.

At the top of the TMDL segment, Foe Killer Creek is a small, narrow stream flowing through neighborhoods and some farmland. The stream widens slightly as it flows downstream. In the area around Hembree Road, the land cover changes significantly and the remainder of the segment flows through largely commercial and higher density residential areas.

From Hembree Road downstream to the confluence with Big Creek, the Foe Killer Creek TMDL segment is a wider stream with greater flow. There is a vegetative buffer in most areas made up typically of woods with varying amounts of ground cover and brush.



- Legend**
- AG - Agriculture
 - AIR - Airports
 - ASP - Asphalt Plants
 - SUB - Electric Substations
 - FUEL - Fuel Facilities
 - GTS - Garbage Transfer Stations
 - SOG, LOG, CEOG, OR HAZ - Hazardous Waste Facilities
 - JUNK - Junk/Scrap/Salvage Yards
 - LAS - LAS Permit Holders
 - LF - Landfills
 - LIFCATS - Large Industries Which Have Federal Categorical Standards
 - LIUHC - Large Industries Which Utilize Hazardous Waste
 - LS - Lift Stations
 - MAR - Marinas
 - MINE - Mining
 - NPDES - NPDES Permit Holders
 - PIPE - Pipeline Crossing Stream
 - REC - Recycling Centers
 - WWTF - Wastewater Treatment Facilities
 - WP - Water Treatment Plants
 - TMDL Segment
 - Counties
 - Rivers and Water Bodies
 - Streets
 - Streams
 - Foe Killer Watershed Boundary

Figure 3
Foe Killer Creek Watershed
Potential Individual Sources of Pollution
Identified in ARC's 2001 Source Water
Assessment Project



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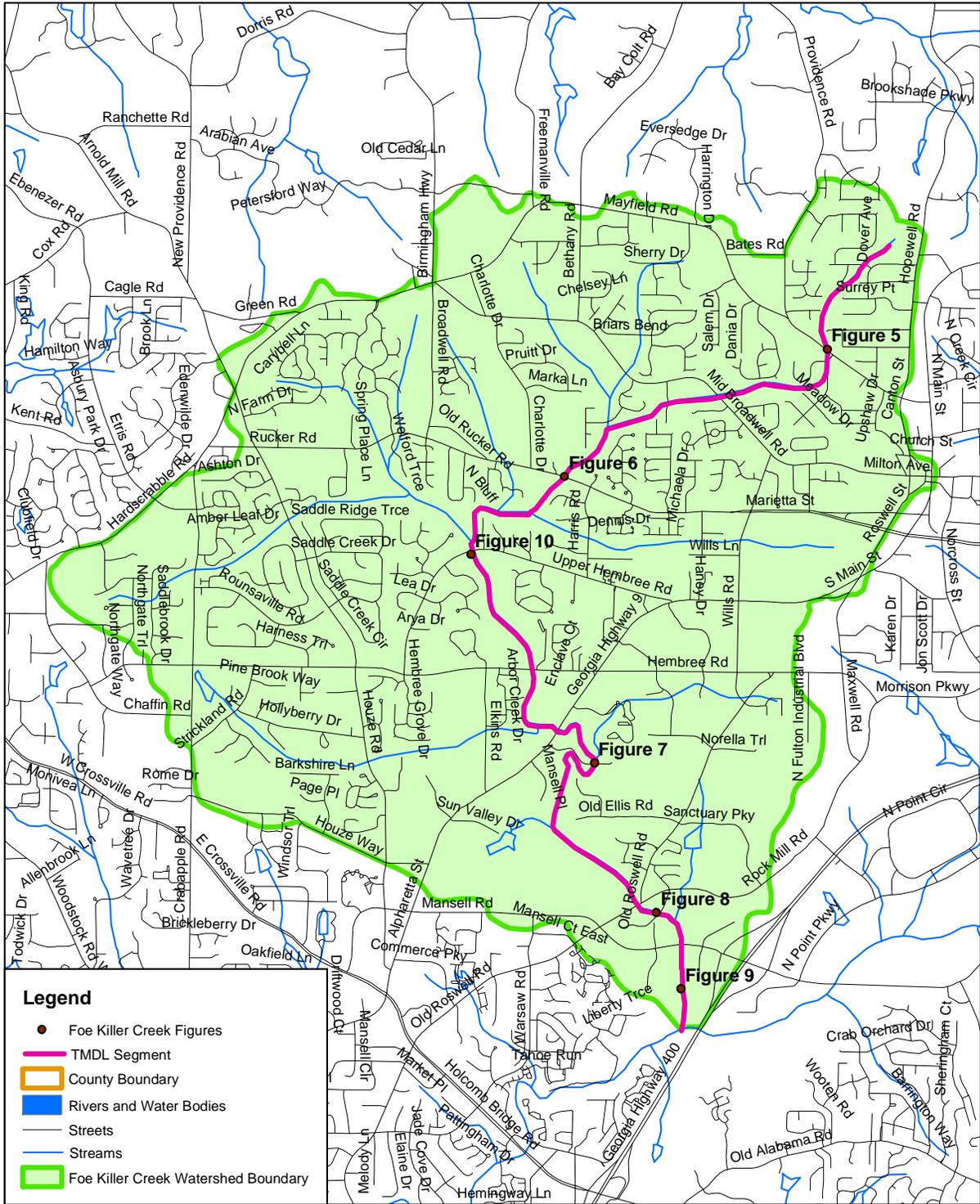


Figure 4
Location of Images Taken
During Visual Field Survey

0 0.150.3 0.6 0.9 1.2 Miles



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Figure 5. Upstream side of culvert at Mayfield Road (looking downstream)



Figure 6. Looking upstream from Rucker Road



Figure 7. Looking upstream from Greenhouse Drive



Figure 8. Looking upstream from Rockmill Way



Figure 9. Near confluence stream exhibits backwater characteristics (looking across)

The stream bed and banks are littered occasionally with small pieces of trash such as cans and bottles. There was more litter in the lower sections of the stream segment than upstream portions. In the majority of the segment, the water often appeared cloudy and somewhat opaque, even in faster moving sections. This cloudiness is likely due in part to the rainfall events which occurred the day before and the morning of the visual field survey.

Potential sources affecting the overall health of Foe Killer Creek are discussed in the Point Source and Non-point Source sections.

3.2 Point Sources

There is one permitted point source discharge in the Foe Killer Creek TMDL segment watershed. This source is a concrete manufacturer identified in the legend as NPDES – NPDES Permit Holders and shown on the map in Figure 3.

3.3 Non-Point Sources

The majority of the watershed is sewered but there may be isolated homes or areas served by septic systems.

Evidence of the presence of wildlife was observed in the streambed as well as in areas adjacent to the stream. There were deer tracks throughout the lower section of the TMDL stream segment and raccoon tracks were common in the lower portion of the TMDL segment. Few fish were observed throughout the TMDL segment. Adjacent to the stream crossing on Upper Hembree Road there is horse pasture,

shown in Figure 10. No horses were observed at the time of the visual survey. However, the side of the pasture which borders the stream has a fence and tree line which should not allow direct access to the stream by horses.



Figure 10. Horse pasture on downstream side of Upper Hembree Rd.

3.4 Other Potential Individual Sources of Pollution

Data obtained from the 2001 ARC Source Water Assessment Project show potential individual sources of pollution in the Foe Killer Creek TMDL segment watershed (Figure 3). In Figure 3 the red crosses symbolize hazardous waste facilities. Examples of the types of businesses categorized as hazardous waste facilities include dry cleaners, vehicle maintenance faculties, and leather manufacturing facilities. This data was used as a part of the Source Water Assessment Project for Metro Atlanta and the data source was US EPA's Resource Conservation and Recovery Information System (RCRIS). A brief review of these data types shows little or no potential influence on fecal coliform levels in this TMDL stream segment.

4.0 RANKS ASSIGNED TO POLLUTION SOURCES

Sanitary sewer overflows are considered a large source of fecal coliform bacteria affecting this entire TMDL segment. Leaking or failing septic tank systems and illicit connections of sanitary sewers are also considered large sources affecting sporadic areas of the Foe Killer Creek TMDL segment. Animal waste from wildlife, horse farms, or domestic animals is considered a moderate source of fecal coliform bacteria affecting this entire TMDL segment. Illicit sewer connections and urban runoff are identified as small to negligible sources of fecal coliform in the Foe Killer Creek TMDL segment watershed.

5.0 SUMMARY OF FINDINGS

There is one permitted point source discharges in the Foe Killer Creek watershed. The field survey and background investigation identified non-point sources such as sanitary sewer overflow or line failure, septic system failure, and animal waste. These are the most likely potential sources of fecal coliform pollution in and around the TMDL segment. Proposed management practices to address fecal coliform have been provided by local governments and are outlined in the 2004 Foe Killer Creek TMDL Implementation Plan in tables 5, 6 and 7.

6.0 STAKEHOLDER INVOLVEMENT

City of Alpharetta Public Works staff accompanied ARC staff during this stream survey. Results have been made available and discussed with local government representatives.

TMDL Watershed Land Cover Matrix (Aggregated ARC Land Cover Categories)

Aggregated Category	Description of Original ARC Categories	ARC Land Cover Code
<i>Commercial</i>	Commercial and Services	12
	Industrial and Commercial Complexes	15
	Intensive Institutional	121
<i>Industrial/Institutional</i>	Industrial	13
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	Agriculture-Orchards, Vineyards and Nurseries	22
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	Bare Exposed Rocks	74
	Quarries, Gravel Pits, and Strip Mined	75
	Transitional Areas	76
<i>Low-Density Residential</i>	Low Density Single Family Residential	111
<i>Medium-Density Residential</i>	Medium Density Single Family Residential	112
<i>High-Density Residential</i>	High Density Residential	113
	Multifamily Residential	117
	Mobile Home Parks	119