STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN – REVISION 1
Sharp Mountain Creek (Rock Creek to Etowah River)
Coosa River Basin
April 28, 2006
Local Watershed Governments
Cherokee County and the cities of Ball Ground and Nelson

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.

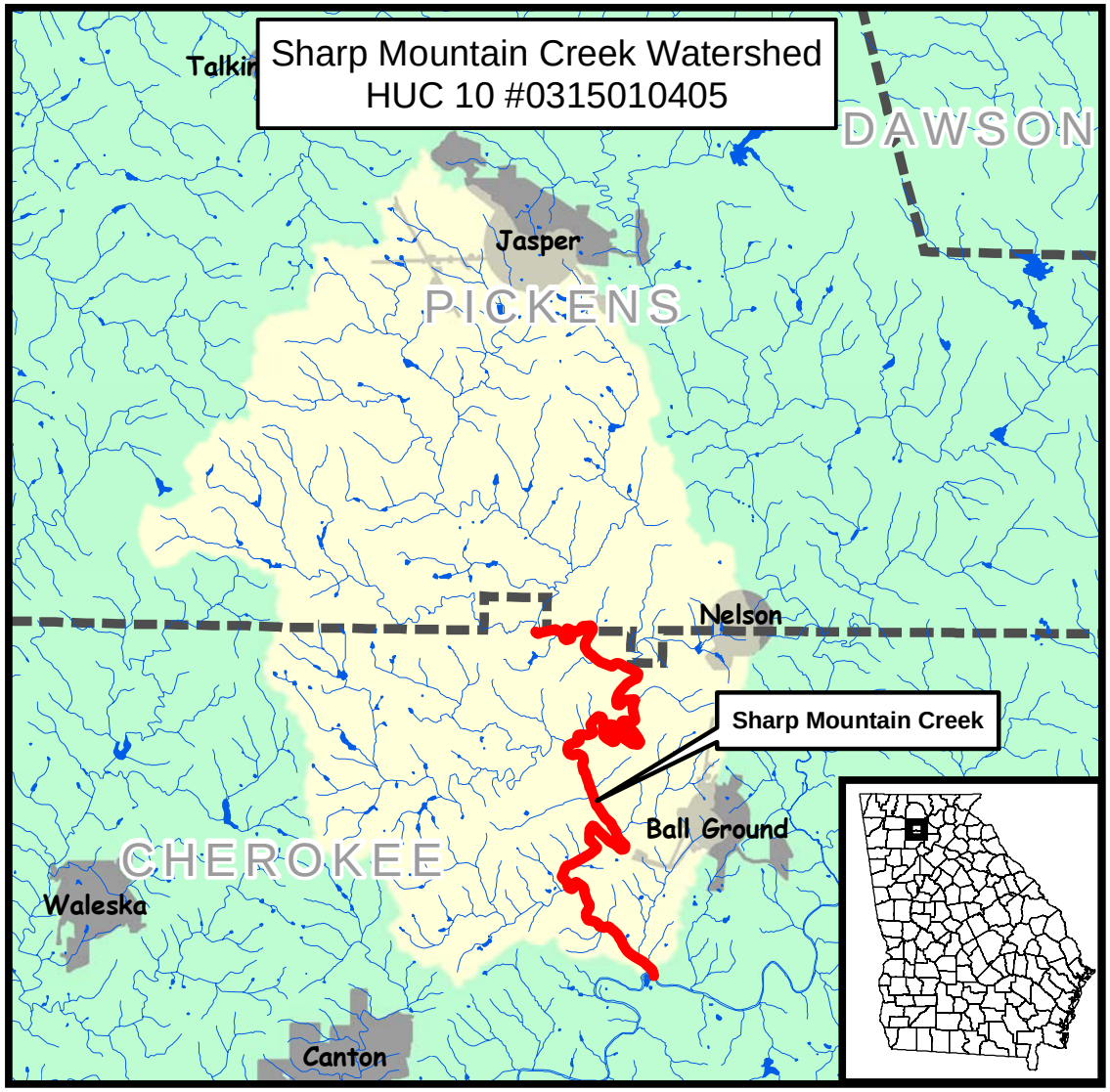


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Sharp Mountain Creek	Rock Creek to Etowah River	Fecal Coliform	CSA0000058

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC10 # 0315010405. 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 that 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 that could influence water quality. See the "Instructions for Completing the Georgia Total Maximum Daily Load (TMDL) Tier 2 Implementation Plan" for more information on what to include.

The Sharp Mountain Creek Watershed (HUC10 #0315010405) is located in the northwest portion of metro Atlanta in Cherokee and Pickens Counties. The land area for HUC10 #0315010405 is 48,271 acres. There is one major highway that crosses the southern portion of this HUC10; Interstate 575. Based on available 2001 land cover data this area appears to be primarily forest/green space. There are areas of low intensity development scattered throughout this HUC10.

The Sharp Mountain Creek (Rock Creek to Etowah River) stream segment identified on Georgia Environmental Protection Division's 303(d) list is the only stream segment in this HUC10 watershed for which ARC has developed an implementation plan. The 303 (d) listed stream segment of the Sharp Mountain Creek begins in Unincorporated Cherokee County near the Pickens County line. The segment flows east into Pickens County for a short distance and then returns to Unincorporated Cherokee County flowing south and finally ends where Sharp Mountain Creek flows into the Etowah River. The Sharp Mountain Creek TMDL segment watershed has the approximately the same land area as the HUC10 watershed. The local governments with interest in the Section 305(b) / Section 303(d) listed stream segment in this HUC10 watershed include Cherokee County and the cities of Ball Ground and Nelson.

We have included below a table describing the land cover for the Sharp Mountain Creek TMDL stream segment watershed. The land cover data used to develop this table is from the 2001 iteration of the GLUT (Georgia Land Use Trends) project land cover data. The land cover data found in the GA EPD's 2004 TMDL document shows that the Sharp Mountain Creek (Rock Creek to Etowah River) stream segment watershed is 48,277 acres while the ARC delineation of the segment watershed shows a land area of 48,267.76 acres. The TMDL data also shows that forested areas make up 77% of the Sharp Mountain Creek TMDL segment watershed. The 2001 data used by ARC shows that Forest/Green Space accounts for 72.75% of the watershed area. The data found in the TMDL shows that Pasture/Hay and Row Crops combined make up 14% of the Sharp Mountain Creek TMDL segment watershed. Whereas the data ARC used shows Agricultural Lands make up 8.89% of the Sharp Mountain Creek TMDL Watershed. The data found in the TMDL shows that Low Intensity Residential accounts for 4.5% of the Sharp Mountain Creek TMDL segment watershed. The data ARC used shows that Low-Intensity Development accounts for 2.87% of the watershed area. The acreage totals found in the below table reflects the watershed boundary ARC has updated. This updated TMDL stream segment watershed boundary will be provided to GA EPD. This table also defines how ARC has aggregated the GLUT land cover codes into simplified groupings similar to those found in the TMDL. Table 2 in the attached visual field survey document (Appendix C) defines the Aggregated GLUT Land Cover Codes.

2001 GLUT Land Cover for Sharp Mountain Creek TMDL Segment Watershed

Land Cover Classification	Area (Acres)	% of Total Area	Aggregated GLUT Land Cover Codes
Forest / Green Space	35,115.25	72.75%	7, 41, 42, 43, 73
Developed, Open Space	4,694.95	9.73%	21
Agricultural Lands	4,290.82	8.89%	80
Transitional & Extractive Lands	2,158.27	4.47%	31, 33, 34
Developed, Low Intensity	1,386.23	2.87%	22
Water / Wetlands	284.78	0.59%	11, 91, 92, 93
Developed, Medium Intensity	246.72	0.51%	23
Utility Swaths	57.05	0.12%	20
Developed, High Intensity	33.70	0.07%	24
Total Acres	**48,267.76**	**100.00%**	

This stream segment is identified as not supporting its designated use (i.e. 303(d) listed) due to 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.

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 GA EPD developed a TMDL for this stream segment in January 2004 that shows an 81% reduction in fecal coliform levels is needed.

Staff from Cherokee County helped to identify the potential sources of fecal coliform in this segment watershed. The following potential fecal coliform sources were identified for the Sharp Mountain Creek segment: wildlife, agriculture / livestock, urban runoff, and septic systems.

This implementation plan was developed with the help of representatives from the Cherokee County Engineering Department, Cherokee County Water & Sewer Authority and the Metropolitan North Georgia Water Planning District. The Atlanta Regional Commission coordinated the public meetings and the input received from local stakeholders and technical advisory staff. Stakeholder comments and requested revisions to the draft plan have been considered in developing this final draft implementation plan.

The monitoring section of this implementation plan recommends that GA EPD continue to monitor this listed stream segment as a part of the state-wide 303(d) monitoring program.

A portion of the affected governments' management measures are based on their NPDES Phase II 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 school age students. Cherokee County participates in the Clean Water Campaign (www.cleanwatercampaign.com). Cherokee County also maintains a website with stormwater related issues (http://stormwater.cherokeega.com/). Storm Drain stenciling programs are also being implemented by Cherokee County.

The purpose of this implementation plan is to reduce or eliminate the sources of fecal coliform bacteria contributing to this stream segment 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 accepted by GA EPD.

Sharp Mountain Creek

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Sharp Mountain Creek	Rock Creek to Etowah River	14 miles / 48,268 acres	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 not met. See the "Instructions for Completing the Georgia Total Maximum Daily Load (TMDL) Tier 2 Implementation Plan" for the water quality standards. Enter the needed reduction from the TMDL. Describe the sources and causes of each impairment 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)	Pages 16-29 of the Fecal Coliform TMDL document developed by GA EPD dated January 2004 list the following potential sources of fecal coliform: wastewater treatment facilities, Phase I & II MS4 storm water permit holders, confined animal feeding operations, wildlife, agricultural livestock, urban development, leaking septic systems, land application systems and landfills. The 303(d) list identifies the source of the fecal coliform problem as Nonpoint Sources (NP).	81%

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

INVESTIGATE AND EVALUATE the extent and relative contributions from causes or sources of the 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: 1) involvement of stakeholder group; 2) review of land cover data; 3) field surveys; and 4) other pertinent sources of information consulted.

The Atlanta Regional Commission has taken steps to involve local stakeholders (Table 4 & Appendix A) in identifying possible pollution sources. In October 2005 public meetings were held to solicit general stakeholder involvement. Large presentation size maps using 2004 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 reviewed the most recent landuse data available (year 2003) 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 staff 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 2004 aerial imagery. Using guidance documents provided by the State, a field assessment was conducted which included a windshield survey of the watershed. The summary of findings for this visual field survey is as follows. There are two permitted point source discharges in the Sharp Mountain Creek (Rock Creek to Etowah River) watershed. The field survey identified nonpoint sources such as animal waste. Based on the field survey, animal waste from livestock and domestic animals are probably contributing the most to the fecal coliform levels in this TMDL segment. The estimated extent of contribution of this source is ranked as medium and the estimated portion of contribution is high. While no wildlife was seen during the fieldwork the large amount of wildlife habitat (72% forest/open space) in the watershed suggests a presence of wildlife. For this reason wildlife should be included in the list of possible fecal coliform pollution sources. The estimated extent of contribution of this source is ranked as high and the estimated portion of contribution is ranked as medium. Proposed management practices to address fecal coliform have been provided by local governments and are outlined in the 2006 Sharp Mountain Creek (Rock Creek to Etowah River) watershed TMDL implementation plan in tables 5A, 6 and 7.

Combining information provided in the TMDL document, stakeholder knowledge, existing watershed assessments, and the watershed evaluation conducted for this plan, identify the potential sources or causes most likely to contribute to each identified impairment (parameter) in Table 3. If available information is inadequate to estimate the extent and relative contribution of significant potential sources or causes, recommend appropriate management actions (watershed assessments, monitoring, etc.) to determine the potential sources or causes and relative contributions. In Table 3, list the significant potential sources or causes of each impairment. Estimate the geographic extent of each potential source or cause as percent of the contributing watershed area, percent of stream miles affected, or number per square mile and enter the appropriate rating (from the following table) in the column entitled "Rating (A)". Estimate the relative contribution of each major source or cause to the pollutant causing the impairment and enter the appropriate rating (from the following table) in the column entitled "Rating (B)". Calculate a relative impact ratings for each source or cause by multiplying "Rating (A)" by "Rating (B)". Comments on the source of information used to determine the extent or contribution may be entered in the applicable columns in Table 3.

The following table provides guidance for rating the estimated extent and portion of the contribution from each potential source and cause.

Estimated Geographic Extent of the Source or Cause in the Contributing Watershed (Percent of area or stream miles)	**Estimated Contribution of the Source or Cause to the Pollutant Load Causing the Impairment** (Percent of load)	**Rating**
None or negligible (approximately 0-5%)	None or negligible (approximately 0-5%)	0.5
Scattered or low (approximately 5-20%)	Scattered or low (approximately 5-20%)	1
Medium (approximately 20-50%)	Medium (approximately 20-50%)	3
Widespread or high (approximately 50% or more)	Widespread or high (approximately 50% or more)	5
Unknown	Unknown	UNK

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

POTENTIAL SOURCES OR CAUSES	**ESTIMATED EXTENT OF CONTRIBUTION**		**ESTIMATED PORTION OF CONTRIBUTION**		***IMPACT RATING (A X B)***
	Comments	***Rating (A)***	**Comments**	***Rating (B)***	
Wildlife		5		3	15
Agriculture / Livestock		3		5	15
Urban Runoff		1		0.5	0.5
Septic Systems		UNK		UNK	UNK

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 local government agencies were asked about possible sources of pollution as well as any preventative / corrective measures in place or planned for the area. The advisory group members 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. Permit holders and other major businesses were identified and invited to participate in the public meetings. A list of elected officials, parks & recreation departments, NRCS, and County Cooperative Extension Service representatives were also invited to the public meetings.

The next outreach activity was to develop a website for this project (www.atlantaregional.com/cleanerstreams/coosa.html). The website provided a variety of information and access opportunities to the TMDL Implementation Plan process. The website provided a list and map of the TMDL stream segments. The TMDL documents, the 303(d) list and other background information were 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 next step in this process involved holding 2 initial public meetings in October 2005 to educate stakeholders about this process and solicit input. A total of 34 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, sending out numerous e-mails announcing the initial meetings and finally mailing out meeting announcements to local groups (home owner associations, watershed alliances, etc.), businesses, elected officials, Parks & Recreation Departments, NRCS, and the County Cooperative Extension Services.

After input had been received from our local government advisory group and stakeholders a draft implementation plan was developed that incorporated this input. This draft document was made available to all stakeholders for discussion and input at the 2 public meetings held in February 2006. A total of 22 persons attended the public meetings.

The input received during the four public meetings can be summarized as follows. Stakeholders most commonly asked programmatic type questions like what drives the TMDL process and how will these TMDL implementation plans be used. Stakeholders also asked questions about the water quality parameters for which the implementation plans were developed. Another common question asked was how can local governments and GA EPD tell if the problem is corrected. Other questions revolved around who were the stakeholders involved in the process and how were stakeholders identified for this project. The local stakeholders also wanted to know how stakeholders would be involved in the future. Stakeholders asked what was currently being done to educate the public on how to prevent water quality problems. These types of questions were answered in a discussion format at the public meetings with the help of GA EPD staff.

Table 4. STAKEHOLDER ADVISORY GROUP 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	
Eric Wilmarth, City Manager, City of Ballground	PO Box 285	Ballground	GA	30107	(770) 735-2123	ewilmarth@cityofballground.com
Cherokee County Engineer (Geoff Morton)	130 E.Main St, Suite 106	Canton	GA	30114	(678) 493-6057	gmorton@cherokeega.com
Cherokee County Planning Director (Jeff Watkins)					(678) 493-6000	jwatkins@cherokeega.com
Cherokee County WSA (David Kubala)	P.O. Box 1006 391 W. Main St.	Canton	GA	30114	(770) 479-1813	dkubala@ccwsa.com
Cherokee Co. Environmental Health (G. Curtis Barnhart, Jr.)	105 E. Main St	Canton	GA	30114	(770) 479-0444	gcbarnhart@gdph.state.ga.us
Cherokee County Cooperative Extension Service (Todd Hurt)	130 East Main Street Suite 200	Canton	GA	30114 -2784	(770) 479-0419	thurt@uga.edu
Cherokee County Recycling Center (Stan Hall)	470 Blalock Road	Canton	Ga	30115	(770) 517-7650	swhall@cherokeega.com
USDA Natural Resources Conservation Service (Machelle Simons)	717 S WALL ST STE 1	CALHOUN	GA	30701-2649	706) 629-2582	machelle.simons@ga.usda.gov
GA Soil & Water Conservation Commission (Keith Gilmer)	700 East 2nd Avenue Suite J	Rome	GA	30161-3359	(706) 295-6131	kgilmer@gaswcc.org
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, as described in Project Task #1 of the Scope of Services.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Identify and list in Table 5A the significant management measures or activities which have or will be taken in the contributing watershed to address sources or causes of the impairment(s). List significant management measures and activities in Column 1 and responsible organizations in Column 2. Describe the measure or activity in Column 3 and sources of funding or resources in Column 4 (you may wish to adapt the generic language included in the "Standard Language for Management Measures and Activities" to local applications) In Column 5, enter one of the following codes describing the status of the measure or activity: (A) installed and active; (AE) active and **will be** enhanced or expanded; (R) required in the future by law, regulation or permit conditions; (P) currently proposed, but not required; and (N/R) **additional new recommended** or (N/E) **recommended enhanced** management measures and activities. In Column 6 enter the rating of the estimated existing or proposed extent of application of the measure or activity or percentage of individual sources to which the management actions have or will be applied (see the following table). In Column 7 enter a rating of the estimated effectiveness of the management measures and activities (see following table). Effectiveness may be estimated by local experts or derived from tables included in the "Standard Language for Management Measures and Activities".

The following table provides guidance for rating the estimated extent and portion of the contribution for each significant potential source and cause.

Estimated Extent of Application or Percentage of Individual Sources to Which the Management Measure or Activity Has or Will be Applied in the Contributing Watershed	**Estimated Effectiveness or Percent Removal of Constituent** (Percent of load)	**Rating**
None or negligible (approximately 0-5%)	None or negligible (approximately 0-5%)	.5
Scattered or low (approximately 5-20%)	Low to medium (approximately 5-25%)	1
Medium (approximately 20-50%)	Medium to High (approximately 25-75%)	3
Widespread or high (approximately 50% or more)	High (approximately 75% or more)	5
Unknown	Unknown	UNK

Table 5A. MANAGEMENT MEASURES AND ACTIVITIES

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCES OF FUNDING & RESOURCES	STATUS CODE	TARGET DATE	EXTENT RATING (Area, #)	EFFECT. RATING (Reduction)
Federal Clean Water Act, Section 305(b) and 303(d)	USEPA, Georgia DNR/EPD, Local/County Government	The congressional objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 305 (the *National Water Quality Inventory*) requires states to report progress in restoring impaired waters to EPA on a biennial basis. Section 303(d) requires states to identify 'impaired' waters, submit a list to EPA every two years, and develop	Federal, State	current	In place, ongoing		

		TMDLs for these waters.					
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6	Law prohibiting discharge of excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats. Law authorizing Georgia EPD to control water pollution, eliminate phosphate detergents and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit siltation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins.	Federal, State, Local/County Governments	Current	in place, ongoing		
Georgia River Basin Management Planning Act, Georgia Code Section 12-5-521	Georgia DNR/EPD	River Basin Management Plans describe strategies and measures necessary for local governments, businesses, and citizen groups to educate the general public on matters involving the environmental and ecological concerns specific to the river basin; improve water quality and reduce pollution at the source; improve aquatic habitat and reestablish native species of fish; restore and protect wildlife habitat; and provide recreational benefits.	State, Local/County Government	Complete d	1998		
Industrial Storm Water Discharge NPDES Permit	Georgia DNR/EPD	General storm water discharge permit for manufacturing facilities; mining, oil & gas operations; hazardous waste treatment; storage or disposal facilities; recycling centers; steam electric power generating facilities; transportation facilities; domestic sewage or sewage sludge treatment. Requires	State	Active and will be enhance d or expande d	2006		

		implementation of Storm Water Pollution Prevention Plan. May require storm water monitoring program targeting discharges into/near 303(d) listed waters.					
Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	This requires that persons engaged in removing animal manure from livestock/poultry production areas, transporting animal manure on public roadways, or depositing animal manure to a premise other than its point of origin obtain a permit and follow rules to control animal disease, and outlines regulations for transportation, equipment and storage.	State	Current	In place, ongoing		
Georgia Confined Animal Feeding Operations (CAFOs) Permitting Rules Georgia Department of Agriculture CAFO Inspection Programs	Georgia EPD & Department of Agriculture, Farmer	Georgia land application system permits are required for swine or non-swine CAFOs with 301-1000 animal units (defined in Appendix Permit requirements for CAFOs with swine or non-swine with 1001 or more animal units Georgia Department of Agriculture survey of smaller CAFOs to identify potential water quality problems and advise farmers of corrective actions	Federal, State	Ongoing	Rules in 1999, Inspectio n Program in 2005.		
Buffer Incentives	USDA/NRCS	incentives for fencing and restoring buffers	NRCS	current	1996	5	1
Residential Zoning	City of Ballground	R-40 zoning (residential lots with at least 40,000 ft^2) establishes a 3 acre minimum lot size for livestock in the city limits and requires 5000 ft^2 of fenced area for each animal.	General Fund	Enforced		0.5	1
Septic to Sewer Transition Program	City of Ballground	The city recently installed a sewer system and this program is meant to encourage properties served by septic to connect to the sewer system. Everyone in the city pays a base sewer rate whether or not they connect to the sewer system. If the sewer line comes within 300 feet of property line the	General Fund	Enforced	2005	0.5	3

		owner must connect to sewer when their septic system fails. The city has an agreement with the County Environmental Health Department to no longer issue septic repair permits in the city limits. Existing septic customers are not charged a fee to connect to sewer. New construction will be charged a connection fee.					
Wetlands Protection Ordinance	City of Ballground	This ordinance establishes a Wetlands Protection District based on the U.S. Fish and Wildlife Service National Wetlands Inventory Maps. Receiving toxic or hazardous waste or other contaminants is prohibited in these wetlands areas. Hazardous or sanitary waste landfills are also prohibited in wetland areas.	General Fund	Enforced		0.5	1
Water Supply Watershed Protection Ordinance	City of Ballground	Regulates land uses in the city to preserve/protect water supply. Prohibits sanitary landfills in city limits.	General Fund	Enforced		0.5	1
Illicit Discharge & Illegal Connection Ordinance	City of Ballground	Prohibits illicit discharges & illegal connections to the city's storm sewer system. Connection of a line conveying sewage to the storm sewer system is specifically prohibited and inspected for under this ordinance.	General Fund	Enforced		0.5	3
Conservation Subdivision / Open Space Development Ordinance	City of Ballground	Promotes establishment and preservation of green space in the city limits. Requires development of houses be done on less environmentally sensitive areas.	General Fund	Enforced		0.5	1

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	3	3
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	3	3
Phase II MS4 NPDES Permit	Cherokee County	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the “urbanized”, unincorporated portions of the County; however, many of the management practices should have beneficial impacts throughout the County.	General Fund	Enforced	2004	3	3
Industry database	Cherokee County	Create and maintain a database of industrial sites that could contribute to stormwater pollution as part of the Illicit Discharge Detection and Elimination BMPs. The database will be integrated into GIS and outfalls located near industries identified in this database will be prioritized for dry weather screening monitoring locations.	General Fund	In progress, planned	Decembe r 2004	3	1
Dry Weather Screening	Cherokee County	The dry weather screening program will consist of inspecting outfalls and sampling any dry weather flow to	General Fund	In progress, planned	July 2005	3	3

		determine if upstream facilities/connections are discharging non-stormwater flows to the drainage system. This will be a part of the Illicit Discharge Detection and Elimination BMPs.					
Source Tracing and Removal Procedures	Cherokee County	Once an illicit discharge is detected through the dry weather screening program, it will be the responsibility of the County to attempt to trace the source and remove the illicit connection as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	June 2005	3	3
Site Plan Review	Cherokee County	Site plan reviews for land disturbing activities that will disturb more than one (1.0) acres of land or more as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	March 2003	3	1
Inspection Program	Cherokee County	Inspectors conduct several inspections at active construction sites of one (1.0) acres or more as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	June 2004	3	1
Citizen Complaint Database	Cherokee County	The County will create and maintain a database of citizen comments/ concerns regarding stormwater, water quality, and erosion and sedimentation and how each issue was managed/ resolved as part of the Construction Site Stormwater Runoff Control BMPs and the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs..	General Fund	In progress, planned	Decembe r 2004	3	1
BMP Mapping	Cherokee County	The County will develop a GIS database of the location of all BMPs, the type of ownership (residential, commercial, or municipal), and the actual owner contact information as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	Decembe r 2005	3	3

BMP Inspection Program	Cherokee County	MNGWPD requires adoption of its model ordinance for Post Construction Runoff Control. As such , the County will implement a post construction BMP inspection program to monitor the condition of various water quality BMPs and detention ponds within the urbanized area as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	Decembe r 2006	3	3
GA Stormwater Management Manual	Cherokee County	The County will adopt the GA Stormwater Management Manual as its technical design guideline as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	April 2005	3	3
Little River Watershed Model	Cherokee County	The CCWA will develop a computer model for use by engineers to be utilized when designing water quality BMPs within the watershed for all new construction projects as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	March 2004	3	3
Greenspace Program	Cherokee County	The Cherokee County Greenspace Program will promote the permanent protection of land and water (including agricultural and forestry) that is in its undeveloped and/or natural state as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	March 2004	3	3
NOIs	Cherokee County	The County will identify those County facilities that would qualify as industrial activities and prepare and submit a NOI for coverage under the Industrial Stormwater Permit as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	March 2003	3	3

MS4 Inspection Program	Cherokee County	A MS4 inspection and maintenance program will be implemented in the urbanized area and will include identifying components of all major drainage systems and developing a drainage system inspection checklist as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	December 2006	3	3
Flood Management	Cherokee County	Flood Management (CIP) Water Quality analysis programs includes examination of existing levels of water quality impact on the CIP and new and existing flood control projects. A procedure/ checklist will be developed for determine if water quality enhancements are achievable as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	June 2005	3	3
Adopt-A-Mile	Cherokee County	The County currently operates an Adopt-A-Mile program to encourage volunteer groups to pick up trash along major roadways in the County within the urbanized area as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	March 2003	3	1
Roadside Litter Pickup	Cherokee County	The County administers a program to utilize community service labor to pick up roadside trash and debris along arterial and commercial roads within the urbanized area as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	June 2004	3	1
IAW O.C.G.A. 290-5-26	Cherokee County Board of Health	Rules and regulations for installation and repair of on-site sewage management systems.	Cherokee County Board of Health	Enforced	June 30, 1980	3	Effectiveness will vary

The purpose of Table 5B is to initiate and guide a "first-cut" evaluation of the capacity of existing, currently proposed, and future required management measures and activities to achieve the load reductions specified in the TMDL (and meet water quality goals) and where needed, identify potential feasible and effective measures and practices which could be encouraged and supported to further reduce pollutant loadings from significant potential sources. Though completely voluntary, such recommendations would provide an effective local guide to effective management actions to achieve local water quality goals, establish priorities for grant or loan programs (Section 319 (h), EQUIP, SRF), establish eligibility for grants for Tier plans and implementation, and identify priorities for local watershed assessments and protection plans.

In Columns 1 and 2 of Table 5B, enter each significant potential source and its' corresponding impact ratings from Table 3. Review Table 5A and list significant management practices and activities applicable to each significant cause or source. Evaluate and compare the estimated extent and relative contribution of each significant cause or source with the extent and effectiveness of the applicable management measures and in conjunction with appropriate local stakeholders or organizations, make a best current determination of whether the existing or proposed management practices would achieve the load reductions needed to achieve the TMDL. Summarize conclusions and rationale in Column 4. If more information is needed to adequately determine the significant sources or causes and their relative contributions so note and recommend management actions needed to adequately identify sources such as monitoring, watershed assessments, or Tier 1 implementation plans in the last column. If the current, proposed and required management measures are judged inadequate to achieve the needed load reductions for significant sources, recommend, in consultation with the advisory groups, additional management activities, programs, and measures which would effectively reduce pollutant loads from the source. List such measures in the final column and list as a recommended activity in the milestones (Table 8).

TABLE 5B: EVALUATION OF MANAGEMENT MEASURES AND ACTIVITIES APPLIED TO SPECIFIC SOURCES OR CAUSES

SIGNIFICANT POTENTIAL SOURCE (S) OR CAUSE(S) (From Table 3)	**IMPACT RATING** (From Table 3)	**EXISTING, CURRENTLY PROPOSED, OR REQUIRED MANAGEMENT MEASURES OR ENHANCEMENTS APPLICABLE TO EACH SIGNIFICANT SOURCE** (From Table 5A)	**EVALUATION: WILL THE ESTIMATED EXTENT OF APPLICATION AND EFFECTIVENESS OF EXISTING, CURRENTLY PROPOSED, AND REQUIRED MANAGEMENT MEASURES BE ADEQUATE TO ACHIEVE THE SOURCE REDUCTION SPECIFIED BY THE TMDL?**	**IF MANAGEMENT MEASURES ARE ESTIMATED TO BE INSUFFICIENT, RECOMMEND ADDITIONAL MANAGEMENT MEASURES AND ACTIVITIES WHICH COULD EFFECTIVELY REDUCE LOADS FROM SIGNIFICANT SOURCES**
Wildlife	15	None	Management of wild animal wastes in wooded areas and urban stream corridors may not be feasible, but there are several management practices that may be applied to control waterfowl and domestic animal wastes.	Further monitoring is recommended. Should study show that contributions from non-human sources occasionally exceed 200/100ml (geometric mean), submit data to EPD requesting a change in the fecal coliform standard to levels compliant with "natural conditions" for the segment. Should waterfowl be a significant contributor, consider measures to discourage waterfowl occupancy.
Agriculture / Livestock	15	Residential Zoning (City of Ballground)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division		

		Buffer Incentives		
		Georgia Confined Animal Feeding Operations (CAFOs) Permitting Rules Georgia Department of Agriculture CAFO Inspection Programs		
Urban Runoff	0.5	Conservation Subdivision / Open Space Development Ordinance (City of Ballground)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Wetlands Protection Ordinance (City of Ballground)		
		Water Supply Watershed Protection Ordinance (City of Ballground)		
		Illicit Discharge & Illegal Connection Ordinance (City of Ballground)		
		District-Wide Watershed Management Plan		
		Phase II MS4 NPDES Permit (Cherokee County)		
		Dry Weather Screening (Cherokee County)		
		GA Stormwater Management Manual (Cherokee County)		
		Industry database (Cherokee County)		
		Source Tracing and Removal Procedures (Cherokee County)		
		Citizen Complaint Database (Cherokee County)		
		BMP Mapping (Cherokee County)		
		BMP Inspection Program (Cherokee County)		
		District-Wide Watershed Management Plan		
		Little River Watershed Model (Cherokee County)		
		Greenspace Program (Cherokee County)		
		MS4 Inspection Program (Cherokee County)		
		Flood Management (Cherokee County)		
		Adopt-A-Mile (Cherokee County)		
		Roadside Litter Pickup (Cherokee County)		
		Federal Clean Water Act, Section 305(b) and 303(d)		
		Georgia Water Quality Control Act (OCGA 12-5-20)		

		Georgia River Basin Management Planning Act, Georgia Code Section 12-5-521		
		Industrial Storm Water Discharge NPDES Permit		
Septic Systems	UNK	Septic to Sewer Transition Program (City of Ballground)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Long-Term Wastewater Management Plan		
		IAW O.C.G.A. 290-5-26		

VII. MONITORING PLAN

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

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	2006	2007	TMDL Evaluation / Monitoring data for Georgia's 305(b)/303(d) List

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities, including those described in the Scope of Services that will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILTY	DESCRIPTION	AUDIENCE	DATE
Cherokee County	Library of stormwater educational materials as part of Public Education and Outreach on Stormwater Impacts BMPs.	General public	March 2004
Cherokee County	Stormwater management web page as part of Public Education and Outreach on Stormwater Impacts BMPs and the Illicit Discharge and Elimination BMPs. (http://stormwater.cherokeega.com/)	General public	June 2004
Cherokee County	Public school environmental library as part of Public Education and Outreach on Stormwater Impacts BMPs.	School System Officials	August 2004
Cherokee County	Create a stakeholder advisory group to assist political leaders and County staff with developing stormwater program policies and ordinances as part of Public Involvement and Participation BMPs	Community Stakeholders	April 2004
Cherokee County Recycling Center	Storm drain stenciling program	General Public	Ongoing

IX. MILESTONES/ MEASURES OF PROGESS OF BMPs AND OUTREACH

This table will be used to periodically track and report progress of significant management practices and activities identified or recommended in Tables 5A, 5B, and other sections of this plan, including outreach, additional monitoring and assessments, and the enhancement or installation of management measures and activities. Identify and list significant planned or recommended activities and the target date of accomplishment. Provide room to 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

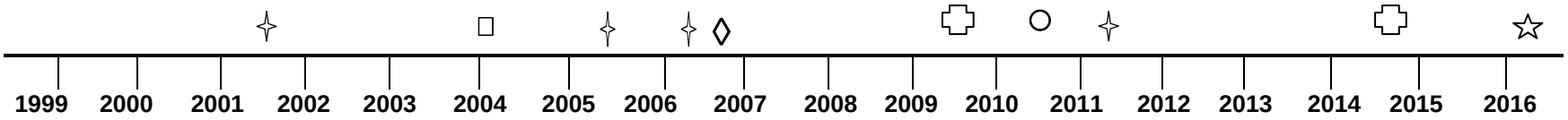
MANAGEMENT MEASURE OR ACTIVITY	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Federal Clean Water Act, Section 305(b) and 303(d)	USEPA, Georgia DNR/EPD, Local/County Government	current	In place, ongoing	
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6	Current	in place, ongoing	
Georgia River Basin Management Planning Act, Georgia Code Section 12-5-521	Georgia DNR/EPD	Completed	1998	
Industrial Storm Water Discharge NPDES Permit	Georgia DNR/EPD	Active and will be enhanced or expanded	2006	
Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division	Georgia Department of Agriculture	Current	In place, ongoing	
Georgia Confined Animal Feeding Operations (CAFOs) Permitting Rules Georgia Department of Agriculture CAFO Inspection Programs	Georgia EPD & Department of Agriculture, Farmer	Ongoing	Rules in 1999, Inspection Program in 2005.	

Buffer Incentives	USDA/NRCS	current	1996	
Phase II MS4 NPDES Permit	Cherokee County	Enforced	2004	Refer to MS4 Annual Report
Industry database	Cherokee County	In progress, planned	December 2004	Refer to MS4 Annual Report
Dry Weather Screening	Cherokee County	In progress, planned	July 2005	Refer to MS4 Annual Report
Source Tracing and Removal Procedures	Cherokee County	In progress, planned	June 2005	Refer to MS4 Annual Report
Site Plan Review	Cherokee County	In progress, planned	March 2003	Refer to MS4 Annual Report
Inspection Program	Cherokee County	In progress, planned	June 2004	Refer to MS4 Annual Report
Citizen Complaint Database	Cherokee County	In progress, planned	December 2004	Refer to MS4 Annual Report
BMP Mapping	Cherokee County	In progress, planned	December 2005	Refer to MS4 Annual Report
BMP Inspection Program	Cherokee County	In progress, planned	December 2006	Refer to MS4 Annual Report
GA Stormwater Management Manual	Cherokee County	In progress, planned	April 2005	Refer to MS4 Annual Report
Little River Watershed Model	Cherokee County	In progress, planned	March 2004	Refer to MS4 Annual Report
Greenspace Program	Cherokee County	In progress, planned	March 2004	Refer to MS4 Annual Report
NOIs	Cherokee County	In progress, planned	March 2003	Refer to MS4 Annual Report
MS4 Inspection Program	Cherokee County	In progress, planned	December 2006	Refer to MS4 Annual Report
Flood Management	Cherokee County	In	June 2005	Refer to MS4 Annual Report

		progress, planned		
Adopt-A-Mile	Cherokee County	In progress, planned	March 2003	Refer to MS4 Annual Report
Roadside Litter Pickup	Cherokee County	In progress, planned	June 2004	Refer to MS4 Annual Report
IAW O.C.G.A. 290-5-26	Cherokee County Board of Health	Enforced	June 30, 1980	Continue the process of reviewing the installation and repair of septic systems.
Residential Zoning	City of Ballground	Enforced		Continue enforcement of the zoning requirements as part of the plan review process.
Septic to Sewer Transition Program	City of Ballground	Enforced	2005	Encourage homes currently served by septic to connect to sewer system. When a septic system fails the homeowner will be forced to connect to the sewer instead of repairing the system if the property is within 300 feet of the sewer line.
Wetlands Protection Ordinance	City of Ballground	Enforced		Continue to prohibit receiving toxic or hazardous waste or other contaminants as well as prohibiting hazardous or sanitary waste landfills in wetland areas.
Water Supply Watershed Protection Ordinance	City of Ballground	Enforced		Continue to regulate land uses in the city limits to preserve/protect water supply to include prohibiting sanitary landfills in the city limits.
Illicit Discharge & Illegal Connection Ordinance	City of Ballground	Enforced		Inspect for connection of lines conveying sewage to the storm sewer system.
Conservation Subdivision / Open Space Development Ordinance	City of Ballground	Enforced		Review development plans for conservation subdivisions and continue to require that houses be developed on less environmentally sensitive areas.
District-Wide Watershed Management Plan	Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area		2004 & 2005	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		2005	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
Revised TMDL Implementation Plan Accepted
Plan Status Evaluation Report
Plan Update or Revision, if Necessary
Project Attainment for Plans Prepared in 2006

Prepared By:	Matt Harper				
Agency:	Atlanta Regional Commission				
Address:	40 Courtland Street, NE				
City:	Atlanta	ST:	GA	ZIP:	30303
E-mail:	Mharper@atlantaregional.com				
Date Submitted to EPD:	March 31, 2006			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 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
A & B Poultry Co.	1020 Scenic View Drive	Jasper	GA	30143		
American Sports & Rec	3939 Royal Drive, NW, Suite 101	Kennesaw	GA	30144		
Anderson, W B Feed & Poultry	8650 Main Street	Woodstock	GA	30188		
Angi Bruton / Bay Marine, Inc	2394 North Cobb Parkway	Kennesaw	GA	30152	770-427-3578	angi@baymarineboats.com
April Ingle / Georgia River Network	126 S. Milledge Ave., Suite E3	Athens	GA	30601	706-549-4508	ingle@garivers.org
Aris Georgakakos / Georgia Water Resources Institute, Georgia Tech	790 Atlantic Drive	Atlanta	GA	30332-0355	404-894-2240	ageorgak@ce.gatech.edu
Bill Higgins / Cobb County Water System, Stormwater Management	680 South Cobb Drive	Marietta	GA	30066	770-419-6434	bhiggins@cobbcounty.org
Bingham Trading, Inc	2627 Sandy Plains Road	Marietta	GA	30066		
Bob Sutton / LAPA	194 Evelyn Street	Marietta	GA	30064	770-422-3094	RSU194@aol.com
Bradshaw Farms Golf Course	3030 Bradshaw Club Drive	Woodstock	GA	30188		
Brown Poultry Farms	4494 Conns Creek Road	Ball Ground	GA	30107		
Buchanan Livestock, Inc	1168 S. Main Street	Jasper	GA	30143		
Burt's Cattle Poultry	3553 Sweetwater Juno Road	Dawsonville	GA	30534		
Candace Stoughton / Nature Conservancy	1330 West Peachtree Street, Suite 410	Atlanta	GA	30309	404-253-7250	cstoughton@tnc.org
Canterbury Golf Club	500 Cambridge Drive	Marietta	GA	30066-2512		
Cherokee Golf Center	635 Molly Lane	Woodstock	GA	30189		
Cherokee Recreation and Parks Authority	7545 Main Street, Building 200	Woodstock	GA	30188	770-924-7768	
Conagra Poultry	1335 Canton Road	Marietta	GA	30066		
Crooked Creek Golf Club	3430 Highway 9 North	Alpharetta	GA	30004		
Curt Gervich / UGA	PO Box 287	Acworth	GA	30101	678-758-0781	curt@etowahhcp.org

Etowah HCP						
David Kubala / CCWSA	PO Box 5000	Canton	GA	30114	770-479-1813	dkubala@earthlink.net
David Radcliffe / UGA	Crop & Soil Sciences Dept., UGA	Athens	GA	30602	706-542-0897	dradclif@uga.edu
Diane Minick / Env. Impact Assessment & Upper Etowah River Alliance – Chair	317 N. Brook Drive	Canton	GA	30114	678-493-9574	dianeminick@msn.com
Dobson Poultry Farms	6295 Yellow Creek Road	Ball Ground	GA	30107		
Don Stevens / CCWSA	391 West Main Street	Canton	GA	30114	770-479-9302	
Duncan Cottrell / Upper Etowah River Alliance	171 Meridian Street	Canton	GA	30114	770-720-6269	duncancottrell@yahoo.com
Eagle Watch Golf Course	3055 Eagle Watch Drive	Woodstock	GA	30189		
Ed Mullinax / LAPA, City of Catersville Water	PO Box 1671	Cartersville	GA	30120	770-607-6296	emullinax@cityofcatersville.org
Gene Cornelison / Cherokee County	1712 Hornage Road	Ball Ground	GA	30107	770-735-3387	
Geoff Morton / Cherokee County	130 East Main Street, Suite 106	Canton	GA	30114	678-493-6057	gmorton@cherokeega.com
Geoffrey Sarra / City of Alpharetta	1790 Upper Hembree Road	Alpharetta	GA	30004	678-297-6200	gsarra@alpharetta.ga.us
Hilda Hatzell / Interested Citizen	98 Brookhaven Drive	Marietta	GA	30066		
Jeff Riley / CCWSA	1979 Hammond Woods Circle	Marietta	GA	30008	404-932-0745	jeffriley191@hotmail.com
Jim Lanier / Aquascape Environmental	605 B. Mauldin	Woodstock	GA	30188	678-445-0077	muddog@mindspring.com
Jimmy Gisi / Cobb County PRCA	1792 County Services Pkwy	Marietta	GA	30008		
John Seafert / Georgia Adopt-A-Stream	430 Morgan Falls Chaseq	Canton	GA	30114	770-592-0942	jseufert@adelphia.net
Jonathon Davis / US Army Corp of Engineers	PO Box 487	Cartersville	GA	30120-0487		
Jose Anez / City of Woodstock	103 Arnold Mill Road	Woodstock	GA	30188	678-409-4335	janez@ci.woodstock.ga.us
Katie Knowles / Corp of Engineers – Allatoona Lake	1138 State Route Spur 20, SE	Cartersville	GA	30121	678-721-6738	
Katie Owens / Coosa River Basin Initiative	408 Broad Street	Rome	GA	30161	706-232-2724	keady@coosa.org
Kimberly Sanders / Fulton County	141 Pryor Street, Suite 5001	Atlanta	GA	30303	404-730-8035	Kimberly.sanders@co.fulton.ga.us

L & W Poultry Farms	476 Alpine Farm	Talking Rock	GA	30175		
Little River Grill	6979 Bells Ferry Road	Canton	GA	30114		
Little River Landing	6986 Bells Ferry Road	Canton	GA	30114		
Lori Forrester / CCWSA	1957 Authority Drive	Woodstock	GA	30188	770-591-7156	brenaucrew@hotmail.com
M & H Poultry	155 Marsha Drive	Canton	GA	30014		
Manor Golf & Country Club	16000 Hopewell Road	Alpharetta	GA	30004		
Mark Hipp / City of Acworth	4402 Acworth Industrial Drive	Acworth	GA	30101	770-975-0679	mhipp@acworth.org
Martha Kent	1642 Scott Road	Canton	GA	30115		
Martin Poultry, Inc	4710 McCoy Circle	Cumming	GA	30028		
Marty Williams / Georgia Lakes Society	171 Sumter Drive	Marietta	GA	30066		gls@georgialakes.org
Mary Gazaway / GA EPD	2 Martin Luther King Jr. Drive, Suite 1152 East Tower	Atlanta	GA	30334	404-675-1745	
Mike Tuller / Cobb County	191 Lawrence Street	Marietta	GA	30060	770-528-2199	Michael.tuller@cobbcounty.org
Nanette Nelson / UGA WQ Training	Ecology UGA	Athens	GA	30602	706-542-4329	nanette@uga.edu
Nick Ammons / Fulton County	141 Pryor Street	Atlanta	GA	30303	404-730-4000	
Phyllis Lea / Lake Sovereign HOA	571 East Shore Drive	Canton	GA	30114	770-345-4904	pplea@comcast.net
Pilgrim Poultry	654 Univeter Road	Canton	GA	30115		
Richard Rogers / City Canton	151 Elizabeth Street	Canton	GA	30114	770-704-1500	richard.rogers@canton-georgia.com
Ron Papaleoni / LAPA	4793 Cooks Ct	Acworth	GA	30101	678-776-6331	rpapaleoni@acworthcablenet.net
Roy Taylor / Cherokee Homeowners	360 E. Marietta Street	Canton	GA	30114	770-720-4669	wrldpeas@mindspring.com
Rusty Simpson / Cobb County Parks	1792 County Services Pkwy	Marietta	GA	30008	770-528-8840	rusty..simpson@cobbcounty.org
Shadburn Poultry Farm	3495 Hurt Bridge Road	Cumming	GA	30040		
Sharon Smith / Fulton County	141 Pryor Street, Suite 5001	Atlanta	GA	30303	404-730-8006	sharon.smith@co.fulton.ga.us
Smith A C	28 Alan Thomas Road	Cumming	GA	30028		
Stan Hall / Cherokee County	470 Blalock Road	Canton	GA	30115	770-517-7650	recycling@cherokeega.com
Steve Turner / City of Kennesaw	Moon Station Road	Kennesaw	GA		404-392-1156	sturner@kennesaw-ga.us
Teresa Crisp / Parsons	5390 Triangle Pkwy, Suite 100	Norcross	GA	30092	678-969-2462	teresa.crisp@parsons.com
Three Kings Golf Center	4190 Jiles Road, NW	Kennesaw	GA	30144		

Toni Pelliccia / CDM	2030 Powers Ferry Road, Suite 325	Atlanta	GA	30339	770-952-8643	PellicciaA@cdm.com
Towne Lake Hills Golf Club	1003 Towne Lake Hills East	Woodstock	GA	30189		
Trophy Club of Atlanta	15135 Hopewell Road	Alpharetta	GA	30004		
Tyson Foods, Inc.	169 Highway 9 S	Dawsonville	GA	30534		
United Poultry Corp.	2320 Old North Lane	Alpharetta	GA	30004		
Valerie Pickard / USDA-NRCS	678 S. Cobb Drive, Suite 150	Marietta	GA	30066	770-792-0594	valerie.pickard@ga.usda.gov
Vic Jones / CH2M Hill	115 Perimeter Ctr. NE Suite 700	Atlanta	GA	30346	770-604-9281	Vjones2@ch2m.com
Vulcan Materials Company – Southeast Division	1272 Duncan Road, NW	Kennesaw	GA	30144		
White Columns Golf Club	300 White Columns Drive	Alpharetta	GA	30004		
Woodmont Golf Club	3105 Gaddis Road	Canton	GA	30115		
Woody McFarlin / City of Kennesaw	3080 Moon Station Road	Kennesaw	GA	30114	770-421-8582	wmcfarlin@kennesaw-ga.gov
Yellow Creek Poultry Farm	4745 Hurt Bridge Road	Cumming	GA	30040		

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

Sharp Mountain Creek TMDL Segment
(Rock Creek to Etowah River)

In the

Coosa River Basin

March 1, 2006

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Visual Field Survey

For

Sharp Mountain Creek TMDL Segment
(Rock Creek to Etowah River)

In the

Coosa River Basin

March 1, 2006

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

The Sharp Mountain Creek TMDL stream segment is located in the northern portion of the Atlanta Metropolitan region in Cherokee County with just a small portion of the segment in Pickens County. The stream segment is listed for not meeting the State water quality standards for fecal coliform. The listed portion of the stream is 14 miles long. As shown in Figure 1, the TMDL segment begins at its confluence with Rock Creek just inside the Cherokee County boundary and flows south until reaching the Etowah River.

1.2 Watershed Description

The Sharp Mountain Creek TMDL segment watershed is comprised of 48,267.76 acres of land. The Sharp Mountain Creek watershed is located within HUC 10 – 0315010405. Mapping of the watershed and review of the 2001 iteration of the GLUT (Georgia Land Use Trends) project land cover data shows that land cover within the watershed seems to be predominantly forest/open space, which accounts for over 70% of the area. The percentages of land cover are presented below in Table 1. Table 2 outlines GLUT's land cover codes that have been aggregated into the categories used for this project. A map showing land cover in the watershed is included as Figure 2.

Table 1. Watershed Land Cover (Source: 2001 GLUT Land Cover)

Land Cover Classification	Area (Acres)	% of Total Area	Aggregated GLUT Land Cover Codes
Forest / Green Space	35,115.25	72.75%	7, 41, 42, 43, 73
Developed, Open Space	4,694.95	9.73%	21
Agricultural Lands	4,290.82	8.89%	80
Transitional & Extractive Lands	2,158.27	4.47%	31, 33, 34
Developed, Low Intensity	1,386.23	2.87%	22
Water / Wetlands	284.78	0.59%	11, 91, 92, 93
Developed, Medium Intensity	246.72	0.51%	23
Utility Swaths	57.05	0.12%	20
Developed, High Intensity	33.70	0.07%	24
Total Acres	**48,267.76**	**100.00%**	

Table 2. TMDL Watershed Land Cover Matrix (Aggregated 2001 GLUT Land Cover Categories)

Aggregated Category	Description of Original USGS Categories	USGS Land Cover Code
Agricultural Lands	Ag and Pasture	80
Developed, Open Space	Developed, Open Space	21
Developed, Low Intensity	Developed, Low Intensity	22
Developed, Medium Intensity	Developed, Medium Intensity	23
Developed, High Intensity	High Density Residential	24
Forest / Green Space	Beaches / Dunes / Mud Deciduous Forest Evergreen Forest Mixed Forest Golf Courses	7 41 42 43 73
Transitional & Extractive Lands	Clearcut, Sparse Quarries / Strip Mines Rock Outcrop	31 33 34
Water / Wetlands	Open Water Forested Wetland Coastal Marsh Non-Forested Wetland	11 91 92 93
Utility Swaths	Utility Swaths	20

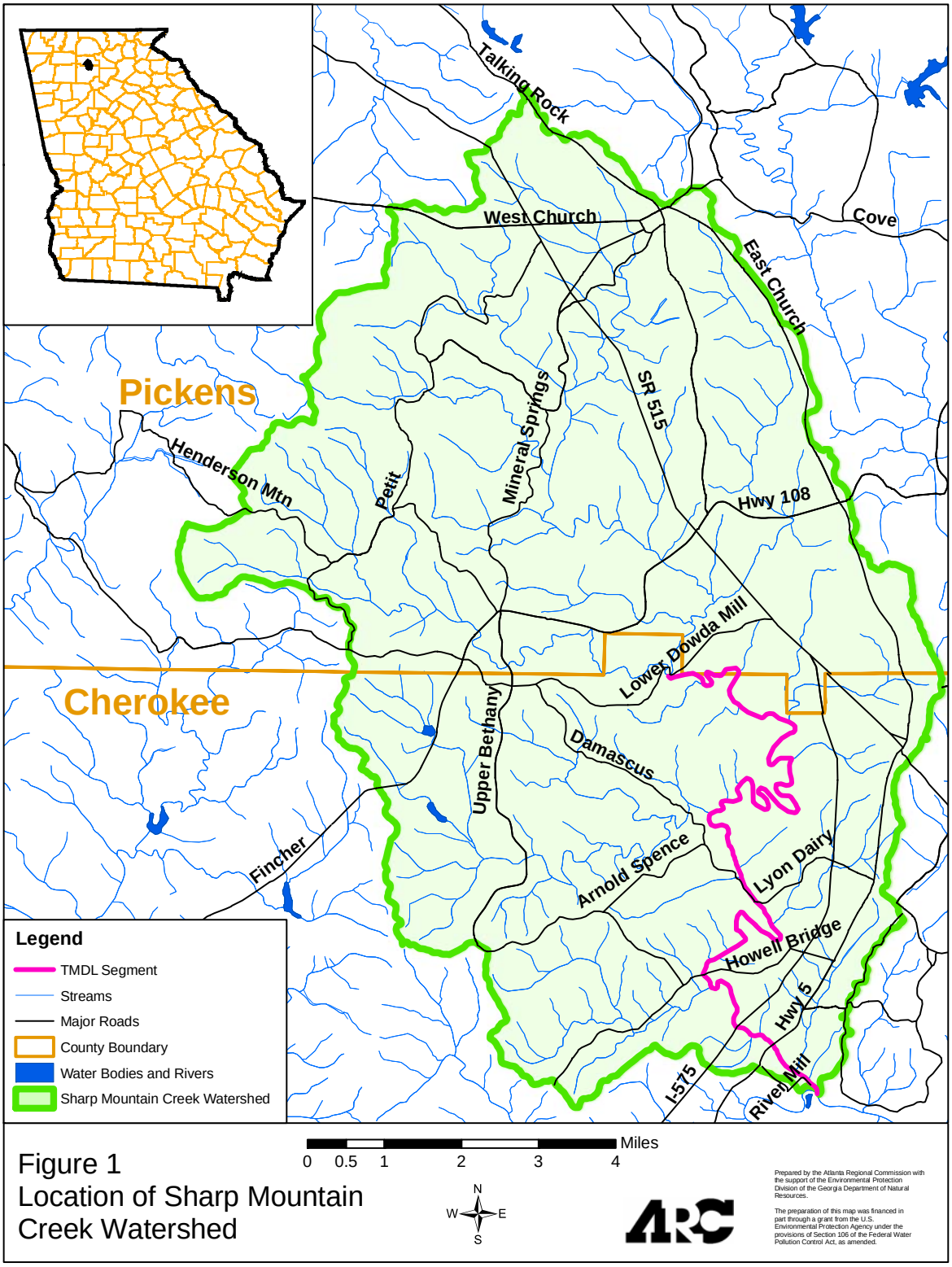


Figure 1
Location of Sharp Mountain Creek Watershed

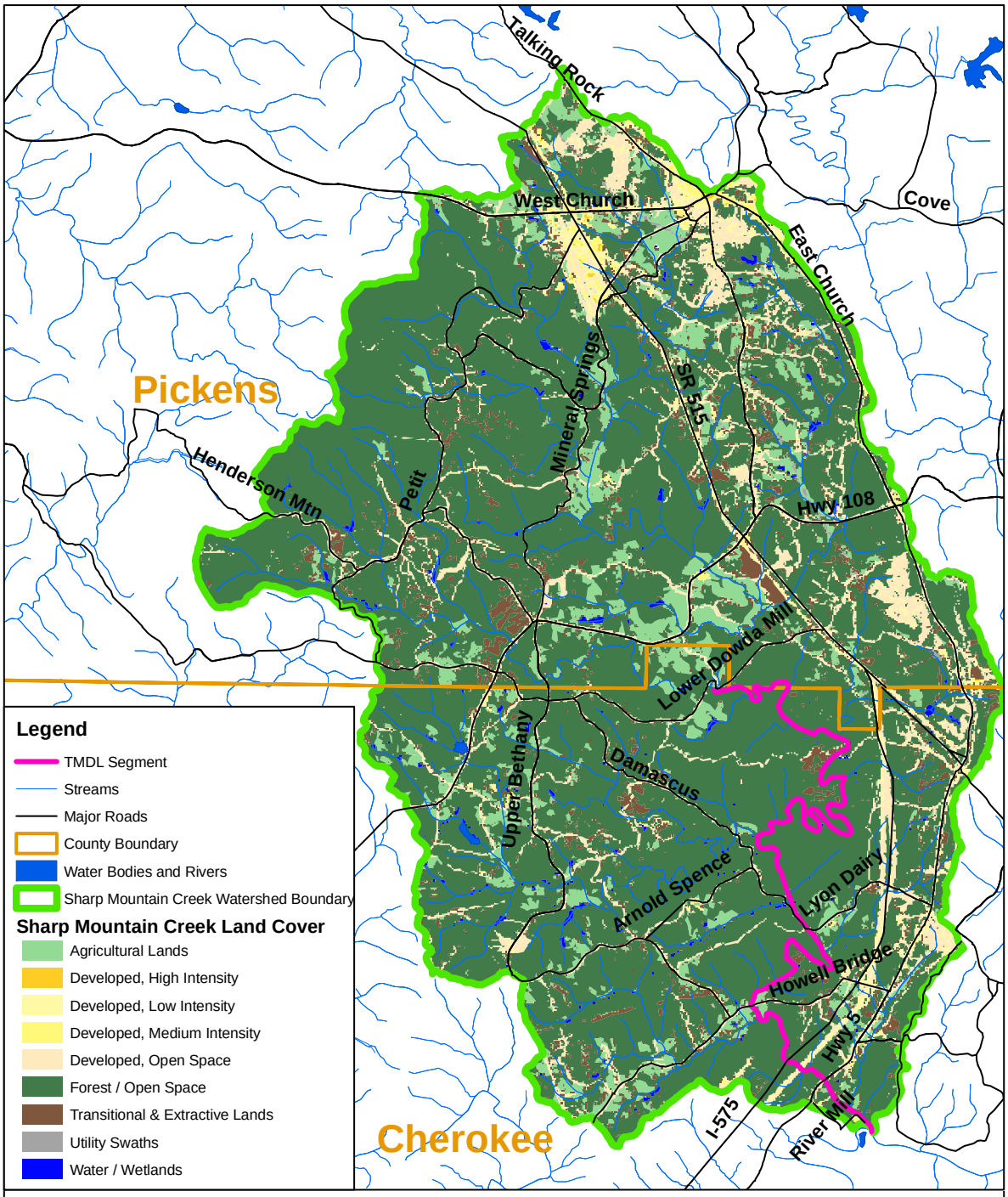


Figure 2
2001 GLUT Land Cover for
Sharp Mountain Creek Watershed

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 as well as data provided by GAEPD 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 Sharp Mountain Creek watershed are shown in Figure 3. Additionally, 2004 aerial photos were compiled and used to further evaluate land use along the stream prior to the beginning of field observations.

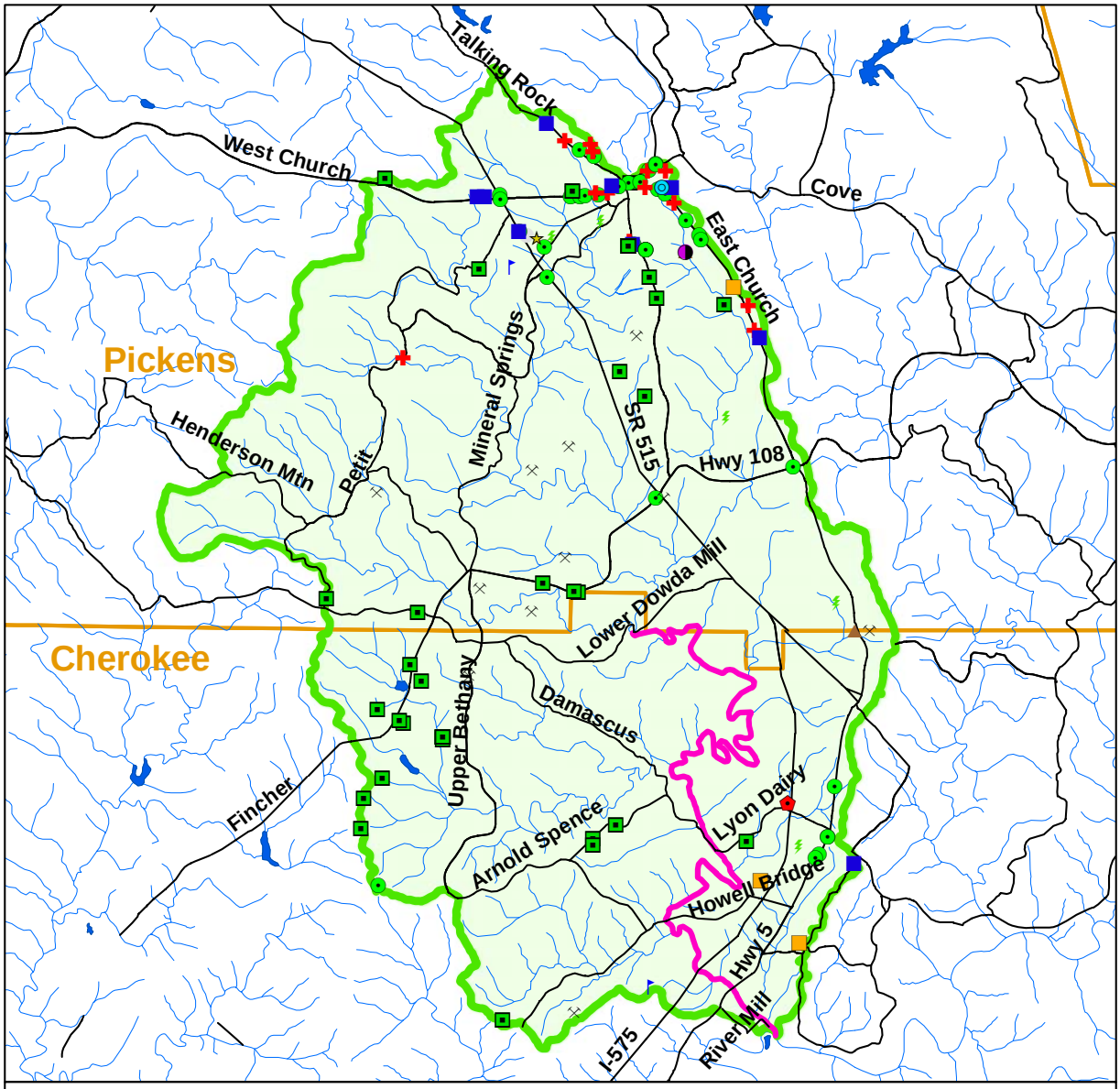
Using guidance documents provided by the state, a field assessment of the watershed was conducted on June 29 – 30, 2005. A windshield survey was conducted of the entire Sharp Mountain Creek watershed. The land cover in the area was verified in addition to careful observations of the current conditions. The purpose of the field survey was to identify and observe possible sources of pollution. Observations were documented and captured in photographs. A map of included images taken during the visual field survey is shown as Figure 4.

3.0 FIELD FINDINGS

3.1 General Characteristics

The field findings discussed here are the results of the visual field survey. The land cover in the area was verified in addition to careful observations of the current conditions in the stream and its surroundings.

The Sharp Mountain Creek TMDL stream segment is consistently bordered by a wide vegetative buffer that is wooded with thick brush. There are three pastures adjacent to the stream where the stream is only protected by a thin buffer that is lightly wooded with light to moderate brush. There are two industrial sites adjacent to the creek that provide little to no vegetative buffer (Figure 5). Four bridges correspond to four street crossings, as shown in Figure 1. General photographs of the stream condition at these access points to the segment are shown below in Figures 6 - 10.



Legend

SWAP

POLLUTANT_

- Agriculture
- Airports
- Asphalt Plants
- Electric Substations
- Fuel Facilities
- Hazardous Waste Facilities
- Junk/Scrap/Salvage Yards
- Landfills
- Large Industries Which Utilize Hazardous Chemicals
- Mining
- NPDES Permit Holders
- Recycling Centers
- Wastewater Treatment Facilities
- Water Treatment Plants
- TMDL Segment
- Streams
- Major Roads
- County Boundary
- Water Bodies and Rivers
- Sharp Mountain Creek Watershed

Miles

0 0.5 1 2 3 4

N W E S

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

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.

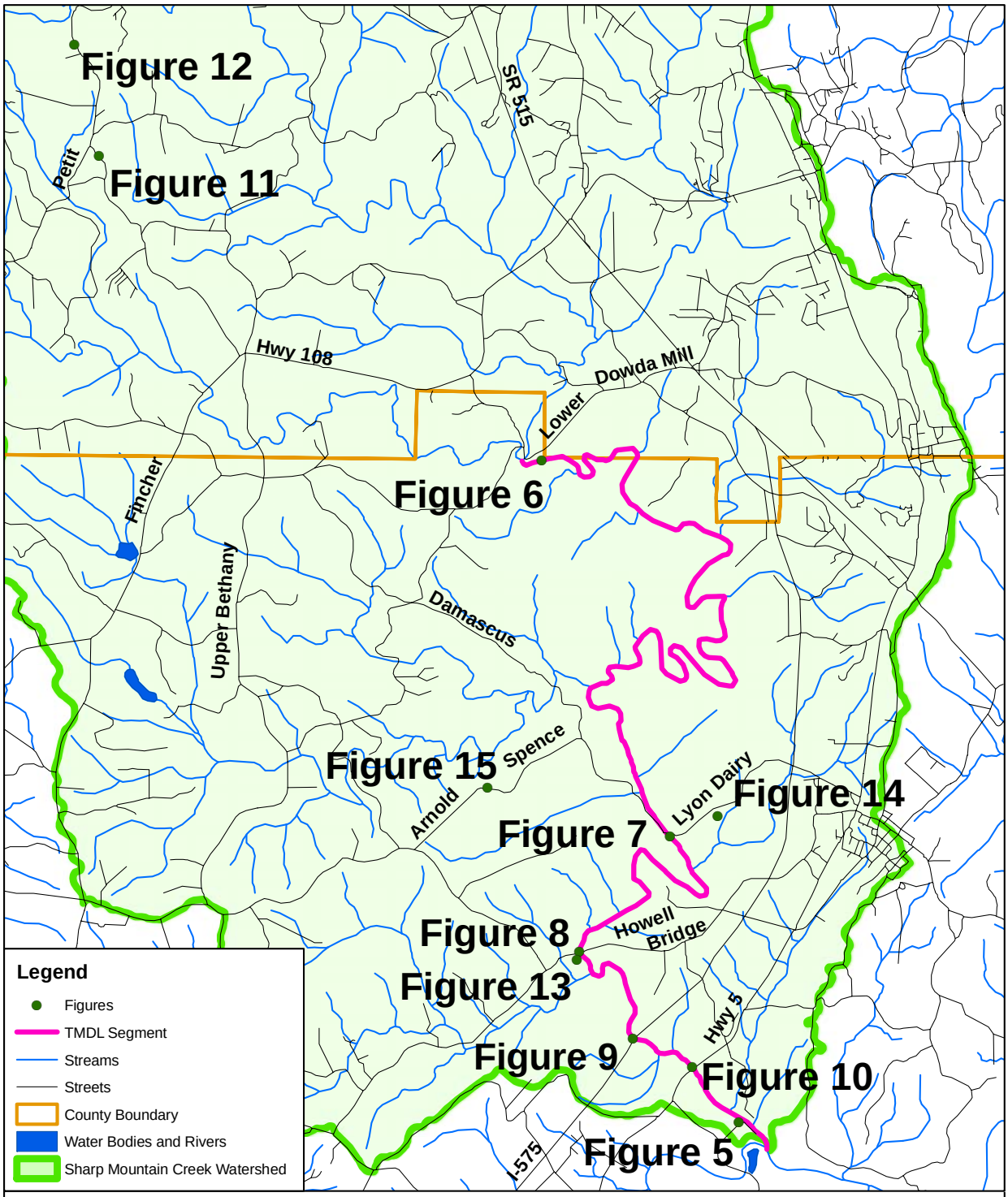


Figure 4
Location of Images Taken
During Field Survey

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.

Figure 5. Section of a concrete and gravel industrial site adjacent to the creek on River Mill Road

Figure 6. South of Lower Dowda Mill Road (looking downstream)

Figure 7. Sharp Mountain Creek at Lyon Dairy Road (looking downstream)

Figure 8. Sharp Mountain Creek at Howell Bridge Road (looking upstream)

Figure 9. Sharp Mountain Creek off I-575 bridge (looking upstream)

Figure 10. Sharp Mountain Creek at Highway 5 (looking upstream)

The water often appeared cloudy and somewhat opaque, even in faster moving sections. The uniform color of the water in this TMDL segment can most-likely be linked to rain showers that occurred on 3 out of 4 days prior to the field survey. Potential sources affecting the overall health of Sharp Mountain Creek are discussed in the Point Source and Non-point Source sections.

3.2 Point Sources

There are two permitted point source discharges in the Sharp Mountain Creek TMDL segment watershed. They include Jasper Water Pollution Control Plant (WPCP) and Georgia Marble Company, neither of which discharge directly into Sharp Mountain Creek or are near the TMDL segment. GA EPD data identifies Polecat Branch as the receiving water for Jasper WPCP and Spence Creek as the receiving water for the Georgia Marble Company.

3.3 Non-Point Sources

The visual field survey revealed potential non-point sources of pollutants that may affect Sharp Mountain Creek. The Cherokee County sewer line data was also reviewed and the watershed in Cherokee County appears to have very little sewer service area in the watershed and therefore the homes in the Cherokee County portion of the watershed are mainly served by septic systems. The exception to this is the City of Ball Ground which has a small portion of the city limits sewered. The rest of the watershed appears to be served by septic systems. Although the watershed has a rural character there are several subdivisions under development, especially in the northern half of the watershed. Suburban-type subdivisions are being built in the mountains and feature long, winding cul-de-sacs and are occasionally gated communities, as well (Figure 11).

Figure 11. Jordan's Crossing is a large subdivision under construction on Henderson Mountain Road that features long, winding cul-de-sacs.

It appears that there is an abundance of wildlife habitat in the watershed due to the abundance of forest and open space surrounding the creek and throughout the watershed.

Domestic animals were observed throughout the watershed. Horses and cows were a frequent occurrence throughout the watershed. Goats were observed on Pettit Road (Figure 12) and a Llama farm is located on Henderson Mountain Road. Cows and

horse stables were observed adjacent to the TMDL segment on Howell Bridge Road (Figure 13).

Figure 12. Goats on Pettit Road

Figure 13. Pasture and stables adjacent to Sharp Mountain Creek on Howell Bridge Road

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 Sharp Mountain Creek TMDL segment watershed (Figure 3). No individual sources of pollution were observed directly adjacent to the stream segment.

There are 42 agricultural sites in the watershed that are categorized as poultry in the 2001 ARC Source Water Assessment Project data. These sites are represented by a green square in Figure 3. The University of Georgia Extension Service recommends best management practices (BMP) for poultry producers because improper litter and manure application cause water contamination in the forms of algal blooms, fish kills and eutrophication. Poultry producer BMPs recommend applications such as stacking litter on a restrictive, non-leaking surface at least 100 feet from a well or surface water and adopting a rate at which to spread litter on fields that meets crop nutrient requirement. Chicken houses are a potential pollutant source because of the possibility that poultry farms have not adopted the recommended best management practices.

Identification of the status (operational or not operational) of the chicken houses was attempted as part of the visual field survey; however, there was limited access to many sites. Several chicken houses were observed to be no longer in operation or questionable as to whether it was still operating. There is one chicken house adjacent to the TMDL segment on Lyon Dairy Road; however, it is no longer in operation (Figure 14). There are three chicken houses that are adjacent to nearby tributaries, one of which is not operational. The majority of the operational chicken houses within the watershed are big business farms, including Tyson's and Pilgrim's Pride (Figure 15).

Figure 14. Chicken houses adjacent to the creek on Lyon Dairy Road are no longer in operation.

Figure 15. Pilgrim's Pride chicken houses on Arnold Spence Road are operational

4.0 RANKS ASSIGNED TO POLLUTION SOURCES

Based on field observations, animal waste from livestock and domestic animals are believed to be a major contribution to the fecal coliform levels in this TMDL segment. The magnitude of this source is ranked as moderate and the entire segment is affected. Also the large amount of wildlife habitat (72% forest/open space) in the watershed suggests a presence of wildlife. For this reason wildlife should be included in the list of possible fecal coliform pollution sources. The magnitude of this source is also ranked as moderate and the entire segment is affected.

5.0 SUMMARY OF FINDINGS

There are two permitted point source discharges in the Sharp Mountain Creek watershed; however, the closest facility is almost two miles away from the TMDL segment and the severity in which they may affect the TMDL segment is undetermined. The field survey identified non-point sources such as animal waste. Based on the field survey, animal waste is the most likely potential source of pollution in and around the stream segment. Proposed management practices to address fecal coliform will be provided by local governments and are outlined in the 2006 Sharp Mountain Creek TMDL implementation plan.

6.0 STAKEHOLDER INVOLVEMENT

Results have been made available and discussed with local government representatives. Also, two stakeholder meetings were held on October 11th at R.T. Jones Memorial Library in Canton, Georgia and at Gritters Library in Marietta, Georgia. Commentary about the field study reports was requested from stakeholders; however, no feedback was received.