

STATE OF GEORGIA

TIER 2 TMDL IMPLEMENTATION PLAN – REVISION 1

Lake Allatoona (Little River Embayment)

Little Noonday Creek (Cobb County)

Rubes Creek (Headwaters to Little River)

Coosa River Basin

April 28, 2006

Local Watershed Governments

Cobb, Cherokee and Fulton Counties and the cities of Kennesaw, Marietta, Mountain Park, Roswell, Alpharetta, Holly Springs, Canton and Woodstock

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.

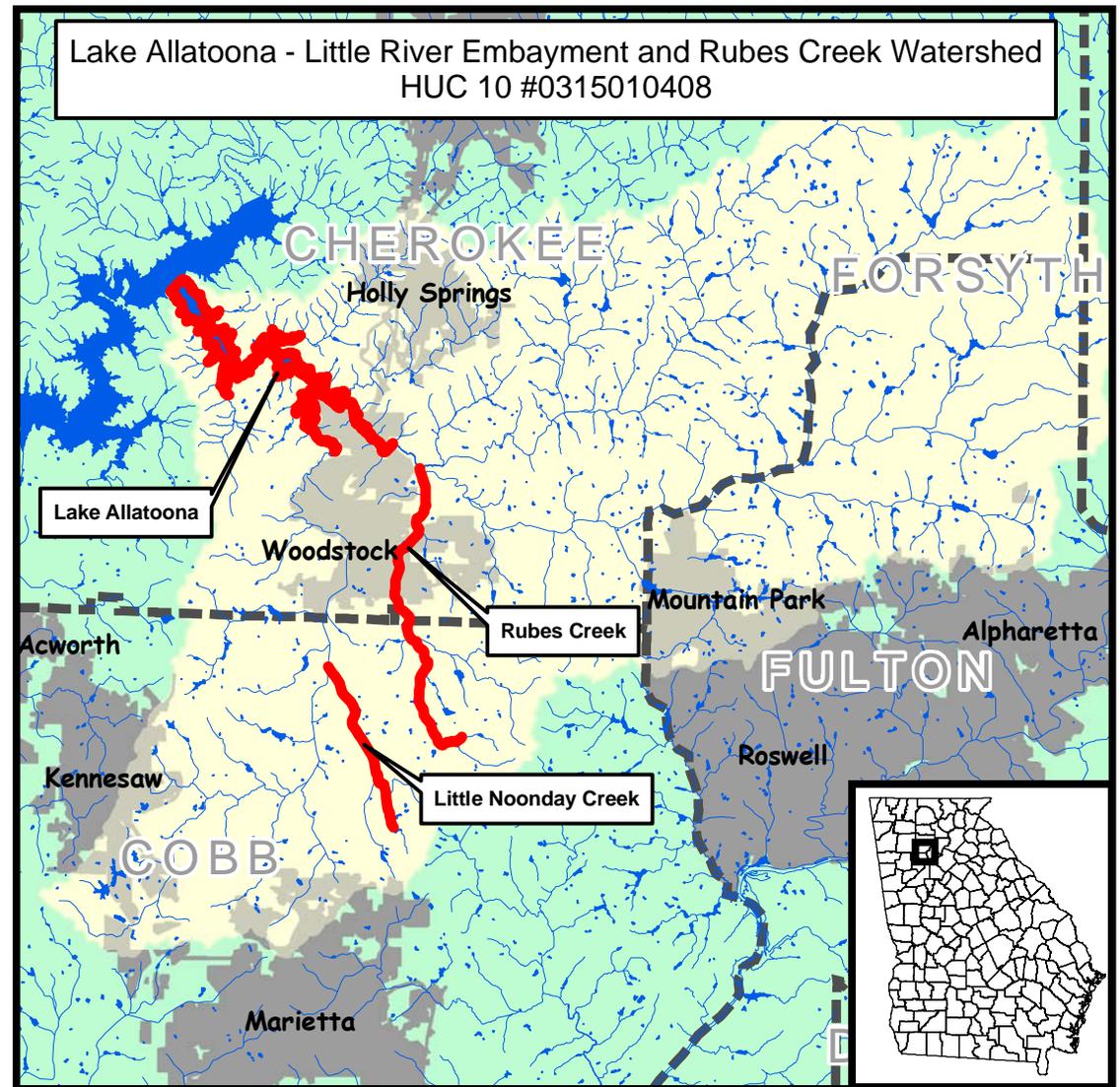


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Lake Allatoona	Little River Embayment	Chlorophyll a	CSA0000028
Lake Allatoona*	Little River Embayment*	Fecal Coliform*	CSA0000099*
Little Noonday Creek	Cobb County	Fecal Coliform	CSA0000120
Rocky Creek*	D/S Garrett Lake (Fulton County)*	Fecal Coliform*	CSA0000119*
Rubes Creek	Headwaters to Little River	Fecal Coliform	CSA0000116

*Plan to be done by EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC10 # 0315010408. 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 Lake Allatoona (Little River Embayment) & Rubes Creek Watersheds (HUC10 #0315010408) are located in the northwest portion of metro Atlanta in Cherokee, Cobb, Fulton and Forsyth Counties. The land area for HUC10 #0315010408 is 137,696 acres. There are two major highways that cross the eastern portion of this HUC10; Interstate 75 and Interstate 575. Based on available ARC 2003 land cover data this area appears to be primarily residential. There are commercial areas scattered throughout this HUC10 with a concentration of commercial areas in the southwestern portion of this HUC10. The forested areas of this HUC10 are located primarily in northeastern portion of the HUC10.

The stream segments identified on Georgia Environmental Protection Division’s 303(d) list in HUC10 #0315010408 for which ARC has developed an implementation plan include: Lake Allatoona (Little River Embayment), Little Noonday Creek (Cobb County), Rubes Creek (Headwaters to Little River). The 303 (d) listed waterbody of Lake Allatoona (Little River Embayment) is located entirely in Cherokee County. The Little Noonday Creek (Cobb County) segment is located entirely in Cobb County. The Rubes Creek (Headwaters to Little River) stream segment begins in Cobb County then flows north into Cherokee County. The Lake Allatoona (Little River Embayment) TMDL segment watershed has the same land area as the HUC10 watershed. The Little Noonday Creek and Rubes Creek stream segment watersheds all have smaller land areas than the entire HUC10 watershed that affect the actual TMDL stream segments. The local governments with interest in the Section 305(b) / Section 303(d) listed stream segments in HUC10 #0315010408 includes: Cobb, Cherokee and Fulton Counties and the cities of Kennesaw, Marietta, Mountain Park, Roswell, Alpharetta, Holly Springs, Canton and Woodstock.

Included below are three tables that describe the land cover for each of the three TMDL stream segment watersheds. The land cover data used to develop these tables are data developed by the Atlanta Regional Commission in 2001 and 2003. These two years were included to illustrate land cover change during that time. As the three tables below indicate the land cover data has not changed significantly since 2001. The acreage totals found in the below tables reflect the watershed boundaries ARC has updated this year. The acreage totals found below differ from those found in the TMDLs because more accurate watershed delineations were made for each stream segment than those used for the development of the TMDLs. These updated TMDL stream segment watershed boundaries will be provided to GA EPD. An additional table has been added to the last page of this document that defines the Aggregated ARC Land Cover Codes.

ARC 2001 & 2003 Land Cover for Lake Allatoona (Little River Embayment) TMDL Segment Watershed

Land Cover Classification	Land Cover 2001		Land Cover 2003		Land Cover Difference	
	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area
Medium Density Residential	35,257.05	25.61%	37,818.76	27.47%	2,561.71	1.86%
Forest/ Open Space	37,880.94	27.51%	35,888.66	26.06%	-1,992.28	-1.45%
Low Density Residential	24,920.98	18.10%	25,357.62	18.42%	436.65	0.32%
Agricultural Lands	20,496.96	14.89%	18,598.39	13.51%	-1,898.57	-1.38%
Commercial	8,915.17	6.47%	9,388.14	6.82%	472.97	0.34%
Transitional/ Extractive Lands	4,853.86	3.53%	4,728.85	3.43%	-125.01	-0.09%
Water/ Wetlands	2,356.32	1.71%	2,398.99	1.74%	42.68	0.03%
High Density Residential	1,280.19	0.93%	1,682.45	1.22%	402.26	0.29%
Transportation/ Utilities	1,625.59	1.18%	1,674.75	1.22%	49.17	0.04%
Industrial/ Institutional	108.53	0.08%	158.44	0.12%	49.91	0.04%
Total Acres	137,696	100%	137,696	100%		

ARC 2001 & 2003 Land Cover for Little Noonday Creek (Cobb County) TMDL Segment Watershed

Land Cover Classification	Land Cover 2001		Land Cover 2003		Land Cover Difference	
	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area
Medium Density Residential	3,442.76	74.68%	3,448.92	74.82%	6.16	0.13%
Commercial	571.67	12.40%	571.67	12.40%	0.00	0.00%
Forest/ Open Space	280.26	6.08%	283.03	6.14%	2.76	0.06%
High Density Residential	143.68	3.12%	134.77	2.92%	-8.91	-0.19%
Agricultural Lands	78.52	1.70%	78.52	1.70%	0.00	0.00%
Low Density Residential	65.00	1.41%	64.99	1.41%	0.00	0.00%
Water/ Wetlands	22.47	0.49%	22.47	0.49%	0.00	0.00%
Transitional/ Extractive Lands	5.40	0.12%	5.40	0.12%	0.00	0.00%
Total Acres	4,610	100.00%	4,610	100.00%		

ARC 2001 & 2003 Land Cover for Rubes Creek (Headwaters to Little River) TMDL Segment Watershed

Land Cover Classification	Land Cover 2001		Land Cover 2003		Land Cover Difference	
	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area
Agricultural Lands	428.57	4.44%	428.57	4.44%	0.00	0.00%
Commercial	776.16	8.04%	871.30	9.02%	95.15	0.99%
Forest/ Open Space	1,294.16	13.40%	1,203.84	12.46%	-90.32	-0.94%
High Density Residential	97.13	1.01%	172.75	1.79%	75.62	0.78%
Low Density Residential	1,106.35	11.45%	1,093.01	11.32%	-13.34	-0.14%
Medium Density Residential	5,332.55	55.21%	5,409.07	56.00%	76.52	0.79%
Transitional/ Extractive Lands	332.80	3.45%	189.21	1.96%	-143.58	-1.49%
Transportation/ Utilities	15.71	0.16%	15.71	0.16%	0.00	0.00%
Water/ Wetlands	274.80	2.85%	274.81	2.85%	0.00	0.00%
Total Acres	9,658	100.00%	9,658	100.00%		

The Little Noonday Creek (Cobb County) and Rubes Creek (Headwaters to Little River) 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 Lake Allatoona (Little River Embayment) listed waterbody is listed for Chlorophyll a. Chlorophyll a is the green pigment found in living plants and is used as an indicator of algae growth in lakes. Excessive algae growth can cause oxygen depletion problems in water, resulting in fish kills. GA EPD used water quality monitoring data from 2000, 2001, & 2002 to develop this Chlorophyll a TMDL. At the time of sampling the Con Agra / Pilgrim's Pride / Seaboard Farms chicken processing plant was discharging into Blankets Creek (a tributary to the embayment). Table 9 in the January 2004 TMDL document shows that the actual discharge from the ConAgra Poultry Plant during 2000 – 2002 far exceeded the other permitted sources of nutrients in the watershed. GA DNR reported fish kills which occurred in Blankets Creek and these GA DNR fish kill reports were obtained by ARC staff. GA DNR fish kill reports stated that 90-100% of the stream's flow near the headwaters was due to the chicken plant's discharge. The GA DNR fish kill reports further stated that the fish kill was caused by an oxygen depletion problem caused by wastes from the chicken plant. Based on this information ARC Staff believes that this was a contributing pollution source at the time of sampling (2000, 2001, & 2002). As of July 17, 2005 the chicken plant discharge has been connected to the Cherokee County Water and Sewerage Authority's sewer line and will no longer discharge into Blankets Creek.

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 these waterbodies in January 2004 that shows a reduction in pollutant levels is needed. The required reductions in fecal coliform loads are as follows: 66% for Little Noonday Creek (Cobb County) and 50% for Rubes Creek (Headwaters to Little River). For the Lake Allatoona (Little River Embayment) the needed Chlorophyll a reduction will be determined by GA EPD based on nutrient limits in point source permits and non-point source load allocations.

Staff from Cobb and Cherokee Counties helped to identify the potential sources of fecal coliform and potential causes of the Chlorophyll a problem in these listed waterbodies. The following potential Chlorophyll a sources were identified for the Lake Allatoona (Little River Embayment) TMDL segment: industrial effluent, urban runoff, wastewater treatment plants / sewer spills, domestic animal waste, wildlife, agricultural runoff, lawn / commercial fertilizers, sediment, atmospheric deposition, and septic systems. The following potential fecal coliform sources were identified for the Little Noonday Creek (Cobb County) TMDL segment: urban runoff, animal waste, land disturbing, septic systems, sanitary sewer leaks, and illegal dump/illicit connections. The following potential fecal coliform sources were identified for the Rubes Creek (Headwaters to Little River) TMDL segment: urban runoff, wildlife, domestic animal waste, sanitary sewer leaks, and septic systems.

This implementation plan was developed with the help of representatives from the Cherokee County Engineering Department, Cherokee County Water & Sewer Authority, Fulton County Public Works, Cobb County Water System, the Metropolitan North Georgia Water Planning District and the cities of Kennesaw, Marietta, Mountain Park, Roswell, Alpharetta, Holly Springs, Canton and Woodstock. 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 these listed stream segments 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 I or 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. Cobb, Cherokee and Fulton Counties and the cities of Kennesaw, Marietta, Roswell, Alpharetta, Acworth, and Woodstock participate 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 common throughout the watershed area.

The purpose of this implementation plan is to reduce or eliminate the sources of fecal coliform bacteria and Chlorophyll a contributing to these waterbodies in order to meet the fecal coliform and Chlorophyll a water quality standards. The water quality attainment date will be ten years from the time the implementation plan is accepted by GA EPD.

Lake Allatoona (Little River Embayment)

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Lake Allatoona	Little River Embayment	Lake Area: 950 acres / Watershed Area: 137,696 acres	Drinking Water / Recreation	PS

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
Chlorophyll <i>a</i>	For the months of April through October, the average monthly mid-channel photic zone composite samples shall not exceed the chlorophyll <i>a</i> concentrations of 15 µg/L.	Pages 10-14 of the Chlorophyll <i>a</i> TMDL document dated January 2004 list the following potential sources: wastewater treatment facilities and Phase I & II MS4 storm water permit holders. On page 13 of the TMDL document the following statement is made regarding the nonpoint source runoff potential source: “Due to the lack of rainfall during the summer of 2000-2001, stormwater did not contribute to significant wash off of materials into the streams. The 303(d) list identifies the source of the Chlorophyll <i>a</i> problem as Nonpoint Sources (NP) and Urban Runoff (UR).	NPDES Permits issued to three existing wastewater treatment facilities (Cobb County-Noonday Creek, Fulton County-Little River, and Woodstock-Rubes Creek) limit Total Phosphorus Loadings (lbs/year) to comply with TMDL required reductions. (Numerical limits available from Georgia EPD.)

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. ARC staff developed a list of potential sources of pollution causing the chlorophyll a violation based on information GA EPD provided. The following is a list of excerpts from the background information on Chlorophyll a that was provided by GA EPD:

- Nitrate is very mobile and may seep into streams, lakes, and estuaries from groundwater enriched by animal or human wastes and commercial fertilizers.
- High concentrations of ammonium or nitrate can enhance the growth of algae and aquatic plants, in a manner similar to enriched phosphorous.
- Sediments, especially fine sediments from topsoils, often carry high concentrations of nutrients like Phosphorous, Nitrogen, and soil organic matter.
- Urban runoff can also contain nutrients, organic matter, and bacteria associated with pet wastes.

Based on this background information, management measures to control sediment, pet waste and urban runoff have been included in this TMDL implementation plan to address the Chlorophyll a problem. This includes management measures that local governments have developed to address fecal coliform problems and erosion and sedimentation.

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 also 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 and a foot survey where access was allowed. The summary of findings for this visual field survey is as follows. There are ten permitted point source discharges in the Lake Allatoona (Little River Embayment) watershed. The field survey identified potential nonpoint sources such as urban runoff, animal waste, and sewer spills. Based on field observations, the overall affects of urban runoff is probably contributing the most to the Chlorophyll a levels in this TMDL segment. This includes the possible effects of fertilizer from homeowner's lawns and golf courses, as well as the cumulative effect from wildlife, domestic animals and livestock. The estimated extent of contribution of this source is ranked as medium and the entire segment

is affected. Based on the record of sewer spills in the watershed, problems associated with sewer spills have a low estimated extent of contribution affecting a medium portion of the stream segment. Proposed management practices to address the chlorophyll a problem have been provided by local governments and are outlined in the 2006 Lake Allatoona (Little River Embayment) watershed TMDL implementation plan in tables 5A, 6 and 7. In addition to the steps taken by the Atlanta Regional Commission, Cobb County also conducts the following to identify possible sources of pollution.

The Cobb County portion of the Lake Allatoona (Little River Embayment) TMDL segment watershed has manhole covers and sanitary pipe creek crossings at regular enough intervals to ensure overlapping visual field inspections by Cobb County at any given manhole or crossing point. Each basin is scheduled to be sanitary sewer inspected every 18-24 months by the Cobb County Inflow and Infiltration department. Every quarter, Cobb's Stream Monitoring Program maintains sites along the segment for assessing water quality every quarter, including fecal coliform.

Cobb County has programs in place for investigating potential sources of pollution. These programs are described below.

1. General urban runoff is fecal tested by Cobb County Water System's Stream monitoring program and sampling is done for all pertinent biological and chemical data. The Cobb Board of Health regulates septic tanks and maintains a nuisance ordinance against unwarranted waste. The National Resources Conservation Service maintains incentives for the restoration of fencing to protect stream buffers, thereby enhancing urban runoff water quality.
2. Monitoring for sanitary sewer leaks is by the aforementioned Cobb Water's Stream Monitoring Program, Cobb Water Engineering's Inflow and Infiltration department's stream walks at sewer stream crossings and manholes. Cobb's Water Protection group also maintains a restaurant grease trap program, prohibiting all county restaurants from discharging grease to septic tanks, and requiring all county restaurants to pump their traps quarterly so as to keep sewer line grease at a minimal and less of a factor in blocking lines and causing sanitary sewer overflows. Cobb Water's Engineering also maintains a manhole raising program in low lying areas in order to place sewer caps above the latest FEMA flood plain levels, curtailing overflow contamination. Cobb Water's System maintenance also maintains a foam root control program for sewer lines.
3. Monitoring for illicit connections and illegal dumping is through the efforts of Cobb's Stream Monitoring Program, Cobb's Water Quality Section and Cobb County. The Cobb County Illicit Discharge ordinance prohibits illicit/illegal discharges to the storm drainage system with monitoring by all sections of the water system.
4. Animal waste from farm animals, birds, and pets is regulated through restrictive stream buffers enforced by Cobb Community Development and by Cobb Board of Health's nuisance ordinance, as well as addressed through the USDA's NRCS's incentives for maintaining fences and buffers. The USDA also sponsors a program in cooperation with Cobb Stormwater to remove beavers from areas where their dams raise water levels to sanitary sewer cap manholes. Monitoring is accomplished under general fecal monitoring through the aforementioned stream monitoring and NPDES fecal monitoring programs.
5. Land disturbing activities' contribution is addressed through Cobb Community Development's Erosion and Sediment Control restrictions, regulatory BMPs and buffer ordinance as well as the NRCS buffer incentives.

There are other jurisdictions besides Cobb County working on identifying and eliminating potential pollution sources. Cherokee County and the cities Alpharetta and Canton have dry weather screening programs in place to detect and investigate illicit connections to their MS4. Fulton County is developing a CMOM program to manage and maintain their sanitary sewer system. The City of Kennesaw has a wet weather screening program in place. The City of Roswell and Woodstock both have an illicit discharge detection and elimination program.

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)	
Industrial Effluent*	See below	3	See below	5	15
Urban Runoff		3		5	15
Wastewater Treatment Plants / Sewer Spills		1		3	3
Domestic Animal Waste		1		1	1
Wildlife		1		1	1
Agricultural Runoff		1		1	1
Lawn / Commercial Fertilizers		1		1	1
Sediment		UNK		UNK	UNK
Atmospheric Deposition		UNK		UNK	UNK
Septic Systems		UNK		UNK	UNK

* At the time of sampling the Con Agra / Pilgrim's Pride / Seaboard Farms chicken processing plant was discharging into Blankets Creek (a tributary to the embayment). Numerous fish kills occurred in the creek. GA DNR fish kill reports were obtained by ARC staff. GA DNR fish kill reports stated that 90-100% of the stream's flow near the headwaters was due to the chicken plant's discharge. The GA DNR fish kill reports further stated that the fish kill was caused by an oxygen depletion problem caused by wastes from the chicken plant. Based on this information ARC Staff believes that this was a contributing pollution source at the time of sampling (2000, 2001, & 2002). As of July 17, 2005 the chicken plant discharge has been connected to the Cherokee County Water and Sewerage Authority's sewer line and will no longer discharge into Blankets Creek.

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	
Georgia Soil and Water Conservation Commission	1500 Klondike Road Suite A109	Conyers	GA	30094	770-761-3020	
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	
Fulton County Cooperative Extension Service	141 Pryor St., Suite 1031	Atlanta	GA	30303	404-730-7000	
City of Alpharetta (Rebecca Shelton)	Engineering and Public Works 1790 Hembree Road	Alpharetta	GA	30004	(678) 297-6200	rshelton@alpharetta.ga.us
Metropolitan North Georgia Water Planning District	40 Courtland Street, NE	Atlanta	GA	30303	404-463-3260	
City of Canton, Engineer (Richard Rogers)	151 Elizabeth Street	Canton	GA	30114	(770) 704-1520	richard.rogers@canton-georgia.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) 493-6107	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
Bill Higgins/Cobb Water	680 South Cobb Drive	Marietta	Ga	30060	770 419 6435	William.Higgins@cobbcounty.org
Rob Hosack/Cobb Community Development	191 Lawrence Street	Marietta	Ga.	30090	770 528 2125	
Valerie Picard/USDA Natural Resources Conservation Service	678 South Cobb Drive	Marietta	Ga.	30060	770 792 0594	
Tom Cambell/Cobb Board of Health	3830 South Cobb Drive	Smyrna	Ga	30080	770 435 7815	
Sally Bethea/Upper Chattahoochee River Keeper	3 Puritan Mill 916 Joseph Lowery Blvd.	Atlanta	GA	30318	(404)352-9828	
Jennifer McCoy/Cobb County Adopt-A-Stream	662 South Cobb Drive	Marietta	GA	30060	(770)528-1480	Jennifer.McCoy@cobbcounty.org
City of Holy Springs, City Engineer (Dan Rothwell)	PO Box 990	Holly Springs	GA	30142	(770) 345-5536	drothwell@hollyspringsga.net
City of Kennesaw Public Works (Steve Turner)	3080 Moon Station Road	Kennesaw	GA	30144	(770) 421-8582	sturner@kennesaw-ga.gov
City of Kennesaw, Public Works Director (Woodson L. McFarlin Jr.)	3080 Moon Station Road	Kennesaw	GA	30144	(770) 421-8582	wmcfarlin@kennesaw-ga.gov
City of Marietta Public Works	205 Lawrence Street	Marietta	GA	30060	770-794-5650	
City of Mountain Park, Mayor (Jim Wright)	118 Lakeshore Drive	Mountain Park	GA	30075	(770) 993-4231	mayorwright@charter.net
City of Roswell (Stu Moring)	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	smoring@ci.roswell.ga.us
City of Roswell (Kim Zimmerman Shorter)	Environment & Public Works 38 Hill Street, Suite G-60	Roswell	GA	30075	(770) 641-3715	kshorter@ci.roswell.ga.us
City of Roswell (Carter Lucas)	Planning and Zoning 38 Hill Street, Suite G-30	Roswell	GA	30075	(770) 641-3780	clucas@ci.roswell.ga.us
City of Woodstock, City Manager (Jim Gleason)	103 Arnold Mill Road	Woodstock	GA	30188	(770) 592-6001	jgleason@ci.woodstock.ga.us
City of Woodstock, Public Works Director (Jarvice Middleton)	103 Arnold Mill Road	Woodstock	GA	30188	(770) 592-6038	jmiddleton@ci.woodstock.ga.us
City of Woodstock, Engineer (Jose Anez)	103 Arnold Mill Road	Woodstock	GA	30188	678-409-4335)	janez@ci.woodstock.ga.us

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 <i>National Water Quality Inventory</i>) 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 TMDLs for these waters.	Federal, State	current	In place, ongoing		
Georgia Water Quality Control Act (OCGA 12-	Georgia Rules and Regulations for Water Quality	Law prohibiting discharge of excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public	Federal, State, Local/County Governments	Current	in place, ongoing		

5-20)	Control, Chapter 391-3-6	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.					
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	Completed	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 implementation of Storm Water Pollution Prevention Plan. May require storm water monitoring program targeting discharges into/near 303(d) listed waters.	State	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	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		

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	3	Effectiveness will vary
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)	0.5	3
Stormwater Design Manual	City of Alpharetta	Requirement for Stormwater Ordinance. Sets design guidelines and requirements for stormwater systems.	General Funds	Active & ongoing	1995	0.5	3
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)	0.5	1
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	0.5	5
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	0.5	3
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	0.5	1
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 & ongoing	2002	0.5	1
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	0.5	3
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	0.5	3

Phase II MS4 NPDES Permit	City of Canton	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the “urbanized” portions of the City; however, many of the management practices should have beneficial impacts throughout the City.	General Fund	Enforced	2004	0.5	3
Industry Database	City of Canton	The City will create and maintain a database of industrial and commercial sites that could contribute to stormwater pollution, which will serve to establish potential pollutants to monitor in the City’s stream network as part of the Illicit Detection and Elimination System BMPs.	General Fund	In progress , planned	December 2005	0.5	1
Dry Weather Screening	City of Canton	The City will establish a dry weather screening program that will seek to ensure that illicit discharges are not being conducted or allowed to continue into the City’s MS4 as part of the Illicit Detection and Elimination System BMPs.	General Fund	In progress , planned	December 2005	0.5	3
Stormwater Information System	City of Canton	The City will create and maintain a database of citizen comments/ inquires/ complaints and how each issue was managed as resolved as part of the Illicit Detection and Elimination System BMPs.	General Fund	In progress , planned	March 2004	0.5	1
E&S Record Keeping	City of Canton	The City will maintain a compliance database of erosion and sedimentation violations for construction activities as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress , planned	March 2004	0.5	1
E&S Inspector Training	City of Canton	The City currently is an issuing authority with the EPD. As such, it will continue to operate an erosion and sedimentation control program that is in compliance with all applicable state laws. This includes training for all City E&S Inspectors and Code Enforcement Officials. This BMP is part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress , planned	March 2004	0.5	1
E&S Program Enforcement	City of Canton	The City currently utilizes an enhanced permitting program where code enforcement officials in the Building Department do erosion control inspections as part of their regular duties. This BMP is part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress , planned	March 2003	0.5	1
Inspections	City of Canton	The City will implement a post construction BMP inspection as part of the stormwater management in New Development and Redevelopment BMPs.	General Fund	In progress ,planned	May 2004	0.5	1
CIP Retrofit Program	City of Canton	The City will develop a procedure for evaluating potential water quality concerns in new CIP project designs as	General Fund	In progress	December 2005	0.5	3

		part of the stormwater management in New Development and Redevelopment BMPs.		, planned			
GA Stormwater Manual	City of Canton	The City will adopt the Georgia Stormwater Management Manual as its technical design guideline as part of the stormwater management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	September 2004	0.5	3
Drainage System Maintenance	City of Canton	The City will continue a process that they have been implementing for the last several years that involves jet-rodding and vacuuming of the drainage system. This is part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	March 2003	0.5	1
MS4 Inspection Program	City of Canton	A MS4 inspection and maintenance program will be implemented that includes identifying the components of all major drainage systems in the City and developing an inspection procedure/ checklist for inspecting these drainage systems as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.	General Fund	In progress, planned	December 2006	0.5	3
BMP Demonstration Project	City of Canton	The City will construct an underground stormwater treatment device at a city-owned facility. This project will provide water quality treatment per the Georgia Stormwater Management Manual. The City will conduct public demonstrations for developers, contractors, engineers and neighboring municipalities.	General Fund	In progress, planned	September 2005	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	5	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	5	3
Chicken Plant Discharge Connection to Sewer System	Cherokee County Water and Sewerage Authority	Remove chicken plant discharge from Blankets Creek, which is a tributary to the Little River Embayment, and connect chicken plant discharge to sewer system.	Local funds	Complete	July 17, 2005	3	5

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	5	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	December 2004	5	1
Dry Weather Screening	Cherokee County	The dry weather screening program will consist of inspecting outfalls and sampling any dry weather flow to 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.	General Fund	In progress , planned	July 2005	5	3
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	5	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	5	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	5	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	December 2004	5	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	General Fund	In progress ,planned	December 2005	5	1

		information as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.					
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	December 2006	5	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	5	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	5	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	5	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	5	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	5	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	General Fund	In progress , planned	June 2005	5	3

		developed for determine if water quality enhancements are achievable as part of the Pollution Prevention/ Good Housekeeping for Municipal Operations BMPs.					
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	5	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	5	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
Stream Monitoring/Dry Weather Screening	Cobb Water System, Cobb Marietta Water Authority	Water quality sampling/illicit discharge detection, dry weather screening, NPDES fecal sites	Cobb	current	1976	3	3
Fecal Coliform Monitoring Program	Cobb Water System	Fecal coliform sampling	Cobb	current	2002	3	3
Pet Waste Management Program	Cobb Water, Cobb Parks and Recreation, Keep Cobb Beautiful	Measures to control pet waste from being washed into creeks at County Park locations	Cobb	proposed	Pending	3	3
Inflow and Infiltration stream walks	Cobb Water System Engineering	Infrastructure inspections and repair	Cobb	current	1988	3	3
County Ordinances	Cobb Community Development	Ordinances to protect stream bank buffers, control erosion, stop illicit discharges	Cobb	current	1977-illicit discharge, 1999-stream buffer, 1990-erosion control	3	3
Nuisance Ordinance	Cobb Board of Health	Required removal of health nuisances, maintenance and installation of septic tanks	Cobb	current	1988	3	3

Clean Water Campaign	Atlanta Regional Commission, Cobb Water System, Environmental Protection Division	Campaign to improve water quality in streams and rivers	ARC, Cobb	current	2001	3	1
Chattahoochee Tunnel Project	Cobb Water System	Relieve sewer system loads in the basin to prevent overloading and spills	Cobb	under construction	1988	3	3
buffer incentives	USDA/NRCS	incentives for fencing and restoring buffers	NRCS	current	1996	3	1
Adopt A Stream	Ga. EPD, Cobb	trains volunteers for bio, physical and chem. monitor	Cobb	current	2001	3	1
manhole raising	Cobb Water Engineering	raises manholes caps above latest floodplain level	Cobb	current	1999	3	3
grease trap maintenance section	Cobb Water Protection	prohibits running grease to septic tanks and requires restaurants to pump traps regularly in order to prevent grease buildup in lines causing overflows	Cobb	current	1988	3	3
foam root control	Cobb Water System Maintenance	chemical dissolving of encroaching roots in sewers	Cobb	current	1997	3	3
beaver control	USDA / Cobb Stormwater	remove beavers from building dams and raising water levels above manholes	Cobb/USDA	current	1998	3	3
streambank stabilization program	Cobb Stormwater Management	reinforces stream banks in order to stabilize sewer infrastructure	Cobb Stormwater Management	current	1995	3	3
CMOM Program	EPD, Cobb Water System (System Maintenance)	CMOM Program -- (Capacity, Management, Operation, and Maintenance): Program that provides incentives to Cobb County to reduce sanitary sewer spills, maintain infrastructure, prioritize problem areas, and provide a Capital Improvement Plan that ensures funding for sewage system improvements.	Cobb Water System	current	2003	3	3
Preventative Maintenance	Cobb Water System: System Maintenance	Measures taken to prevent spills such as tracking patterns of spills and lining, cleaning, video analysis, re-routing of sewer lines.	Cobb Water System	current	since inception of sewer infrastructure	3	3
Emergency Response Policy	Cobb Water System: System Maintenance	Employees are on call and respond to sewer spills within one hour of reporting for remediation.	Cobb Water System	current	1960's	3	3

CMOM Program	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	In Development	2005	3	3
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	3	3
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	3	3
Survey of Sanitary Sewer	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Begin in 2003	Ongoing	3	3
Sanitary Sewer Modeling	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Planned for 2005	Ongoing	3	3
Flow Monitoring	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	Ongoing	3	3
Improvements in Wastewater Treatment	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	Ongoing	3	3
Database and Tracking of Unsewered Areas	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County Water & Sewer Revenue Fund	Ongoing	Ongoing	3	3
Permitting of Septic Systems	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	Ongoing	3	Effectiveness will vary
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	Ongoing	3	3
Improving Waste Receptacles	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Fulton County General Fund	Ongoing	Ongoing	3	3

Reduction in agricultural land use through conversion to developed property	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	Ongoing	3	1
Reduction in habitat through development	Fulton County	Refer to Fulton County Watershed Protection Plan (June 2002)	Private Development	Ongoing	Ongoing	3	1
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	Ongoing	3	3
Phase II MS4 NPDES Permit	City of Holly Springs	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the "urbanized", portions of the City; however, many of the management practices should have beneficial impacts throughout the City.	General Fund	Enforced	2004	0.5	0.5
Mapping	City of Holly Springs	Mapping for 5 square mile city containing 13 plus subdivisions as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	2006	0.5	1
Newsletter	City of Holly Springs	Provide advertisement in local newsletter and provide BMP literature at quarterly issued newsletter as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	March 2006	0.5	1
E&S Ordinance	City of Holly Springs	Evaluate and revise current E&S ordinance per EPD and NRCS recommendations as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	February 2005	0.5	1
Pamphlet	City of Holly Springs	Develop information pamphlet for training and certification programs for developers, engineers, builders and contractors as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	None reported	0.5	1
Model Ordinance	City of Holly Springs	Adoption of the MNGWP Model Ordinance for post-development stormwater runoff as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	June 2004	0.5	1
GA Stormwater Manual	City of Holly Springs	Adopt the Georgia Stormwater Management Manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress, planned	June 2004	0.5	3
Policy Guide	City of Holly Springs	City staff will develop a policy guide and details of BMPs and pollution prevention strategies relating to vehicle maintenance, washing, fueling, salt storage and what to	General Fund	In progress, planned	December 2005	0.5	1

		do in case of accidents as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.					
Annual Training	City of Holly Springs	The City will provide for annual training of applicable municipal staff for stormwater and pollution prevention policies as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress, planned	January 2004	0.5	1
NPDES Phase I MS-4 Program	City of Kennesaw	Wet weather screening, stream monitoring, SIC inspections, new outfalls, spill monitoring. Outfall testing done once per year.	General Fund	Active	1992	0.5	3
Erosion & Sedimentation Ordinances	City of Kennesaw	Required by State Erosion and Sedimentation Act. Requires approved erosion control for construction, & 25-ft buffers on State waters.	General Fund	Enforced	1975, 2000	0.5	1
Stormwater Ordinance	City of Kennesaw	Requires new development to have approved stormwater detention facilities.	General Fund	Active	1998	0.5	3
Stream Buffer Regulation	City of Kennesaw	50-ft. minimum stream buffer.	General Fund	Enforced	2000	0.5	3
Tree Preservation Ordinance	City of Kennesaw	Preserves existing trees and provides for planting of new trees in new development.	General Fund	Enforced	7/99	0.5	1
Phase I MS4 Permit GAS000125	City of Marietta	Ordinances to protect stream bank buffers, control erosion, stop illicit discharges, and maintenance and inspection per our Stormwater Management program	General Funds	Active and ongoing	Amended 2003	0.5	3
Phase II MS4 NPDES Permit	City of Mountain Park	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the "urbanized", portions of the City; however, many of the management practices should have beneficial impacts throughout the City.	General Fund	Enforced	2004	0.5	3
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	1	3
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	1	3
Steep Slopes	City of Roswell	Requires additional buffer depth or other protection	General Funds	Active	Decembe	1	3

Ordinance		measures on steep slopes adjacent to streams.		and ongoing	r 02, 2002		
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	1	3
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	1	3
Phase II MS4 NPDES Permit	City of Woodstock	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the "urbanized", portions of the City; however, many of the management practices should have beneficial impacts throughout the City.	General Fund	Enforced	2004	3	3
Storm Sewer Map	City of Woodstock	Create a storm sewer map including location of all outfalls and receiving streams as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2006	3	3
Ordinance	City of Woodstock	Create an ordinance prohibiting non-stormwater discharges into storm sewer system and appropriate enforcement procedures as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2004	3	3
Inspection	City of Woodstock	Conduct dry weather inspections of storm sewer outfalls as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2006	3	3
E&S Ordinance	City of Woodstock	Review and modify current erosion and sedimentation control ordinance to ensure and enforce proper erosion and sediment controls are used at construction sites (includes requirements for pollution control related construction activities) as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2004	3	3
Training	City of Woodstock	Develop training and certification programs for builders and developers covering proper selection, installation, and maintenance of erosion control devices and erosion and sediment control ordinance regulations as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2006	3	3
Citizen	City of Woodstock	Create procedures for receiving and responding to	General Fund	In	December	3	3

Complaints		complaints from citizens including phone numbers to contact city personnel and complaint forms as part of the Construction Site Stormwater Runoff Control BMPs.		progress , planned	r 2006		
LDA Permit Requirements	City of Woodstock	Establish preconstruction meetings prior to issuance of land disturbing activity (LDA) permits for construction projects to ensure developer understands erosion and sedimentation requirements as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress , planned	December 2005	3	3
E&S Checklist	City of Woodstock	Develop an erosion and sediment control checklist for city personnel involved with inspection of erosion and sediment control BMPs as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress , planned	December 2006	3	3
GA Stormwater Manual	City of Woodstock	Adopt the Georgia Stormwater Management Manual as the City's stormwater design manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress , planned	December 2005	3	3
Site Concept Meeting	City of Woodstock	Require a site concept meeting with owner/developer and engineer at the preliminary/planning stage. Encourage and assist better site design by incorporating non-structural controls as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress , planned	December 2005	3	3
Inspections	City of Woodstock	Develop maintenance and inspection procedures for structural BMPs for existing and new development as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress , planned	December 2006	3	3
Training	City of Woodstock	Develop and implement training program for city personnel covering potential water quality impacts from municipal facilities and good housekeeping practices as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress , planned	December 2006	3	3
Inventory	City of Woodstock	Conduct an inventory of all current and potential municipal operations including facilities and activities performed as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress , planned	December 2006	3	3
Pollution Prevention Guidance	City of Woodstock	Provide pollution prevention guidance for each municipal activity identified in the inventory as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress , planned	December 2006	3	3
Street Sweeping	City of Woodstock	Implement a street sweeping program as part of the Pollution Prevention/ Good House Keeping for Municipal	General Fund	In progress	December 2005	3	3

		Operations BMPs.		,planned			
Water Quality BMPs	City of Woodstock	Incorporate water quality BMPs into new flood control projects where possible such as using wetland ponds instead of dry ponds for flood control as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress planned	December 2006	3	3

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
Urban Runoff	15	Stormwater Management Ord. (Code Secs. 5-201 to 5-223) (City of Alpharetta) Stormwater Design Manual (City of Alpharetta) Stormwater Structural Control Maintenance (City of Alpharetta)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	

	Maintaining Roadside Drainage Systems (City of Alpharetta)		
	Roadside Litter Removal (City of Alpharetta)		
	Metropolitan North Georgia Water Planning District Model Ordinances		
	Stormwater Management Ord. (Code Secs. 5-201 to 5-223) (City of Alpharetta)		
	District-Wide Watershed Management Plan		
	Phase II MS4 NPDES Permit (City of Canton)		
	Industry Database (City of Canton)		
	Dry Weather Screening (City of Canton)		
	Stormwater Information System (City of Canton)		
	CIP Retrofit Program (City of Canton)		
	GA Stormwater Manual (City of Canton)		
	Drainage System Maintenance (City of Canton)		
	MS4 Inspection Program (City of Canton)		
	BMP Demonstration Project (City of Canton)		
	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)		
	Phase II MS4 NPDES Permit (Cherokee County)		
	Fecal Coliform Monitoring Program (Cobb County)		
	County Ordinances (Cobb County)		
	Nuisance Ordinance (Cobb County)		
	Clean Water Campaign (Cobb County)		
	Adopt A Stream (Cobb County)		

	Chattahoochee Tunnel Project (Cobb County)		
	buffer incentives (Cobb County)		
	manhole raising (Cobb County)		
	grease trap maintenance section (Cobb County)		
	foam root control (Cobb County)		
	beaver control (Cobb County)		
	streambank stabilization program (Cobb County)		
	Fulton Tributary Buffer Zone Ordinance (Fulton County)		
	Improving Waste Receptacles (Fulton County)		
	Phase II MS4 NPDES Permit (City of Holly Springs)		
	Mapping (City of Holly Springs)		
	Newsletter (City of Holly Springs)		
	Pamphlet (City of Holly Springs)		
	Model Ordinance (City of Holly Springs)		
	GA Stormwater Manual (City of Holly Springs)		
	Policy Guide (City of Holly Springs)		
	Annual Training (City of Holly Springs)		
	NPDES Phase I MS-4 Program (City of Kennesaw)		
	Erosion & Sedimentation Ordinances (City of Kennesaw)		
	Stormwater Ordinance (City of Kennesaw)		
	Stream Buffer Regulation (City of Kennesaw)		
	Tree Preservation Ordinance (City of Kennesaw)		
	Phase I MS4 Permit GAS000125 (City of Marietta)		
	Phase II MS4 NPDES Permit (City of Mountain Park)		
	Streambank Protection Ordinance (City of Roswell)		
	Structural Control Measures (City of Roswell)		
	Steep Slopes Ordinance (City of Roswell)		
	Street Maintenance (City of Roswell)		
	Illicit Discharge Detection and Elimination (City of Roswell)		
	Phase II MS4 NPDES Permit (City of Woodstock)		
	Storm Sewer Map (City of Woodstock)		
	Ordinance (City of Woodstock)		
	Inspection (City of Woodstock)		
	Pollution Prevention Guidance (City of Woodstock)		
	Street Sweeping (City of Woodstock)		

		Water Quality BMPs (City of Woodstock)		
		GA Stormwater Manual (City of Woodstock)		
		Site Concept Meeting (City of Woodstock)		
		Inspections (City of Woodstock)		
		Training (City of Woodstock)		
		Inventory (City of Woodstock)		
		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		
Wastewater Treatment Plants / Sewer Spills	3	Long-Term Wastewater Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Inflow and Infiltration stream walks (Cobb County)		
		Chattahoochee Tunnel Project (Cobb County)		
		foam root control (Cobb County)		
		manhole raising (Cobb County)		
		grease trap maintenance section (Cobb County)		
		CMOM Program (Cobb County)		
		Preventative Maintenance (Cobb County)		
		Emergency Response Policy (Cobb County)		
		streambank stabilization program (Cobb County)		
		CMOM Program (Fulton County)		
		Emergency Sanitary Sewer Evaluation Study (ESSES) (Fulton County)		
		Interim Collection System Master Plan (Fulton County)		
		Survey of Sanitary Sewer (Fulton County)		
		Sanitary Sewer Modeling (Fulton County)		
		Flow Monitoring (Fulton County)		
		Improvements in Wastewater Treatment (Fulton County)		
Domestic Animal Waste	1	District-Wide Watershed Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Pet Waste Management Program (Cobb County)		
		buffer incentives (Cobb County)		
		Chapter 40-13-8 Animal Manure Handlers Rules of Georgia Department of Agriculture Animal Industry Division		
Wildlife	1	beaver control (Cobb County)	It is anticipated that the management	

		Reduction in habitat through development (Fulton County)	measures listed in Table 5A will achieve the load reduction for this segment.	
Agricultural Runoff	1	Reduction in agricultural land use through conversion to developed property (Fulton County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
Lawn / Commercial Fertilizers	1	District-Wide Watershed Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Reduction in agricultural land use through conversion to developed property (Fulton County)		
Industrial Effluent	15	Illicit Discharge Program (City of Alpharetta)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Dry Weather Screening (City of Alpharetta)		
		NOIs (Cherokee County)		
		Chicken Plant Discharge Connection to Sewer System (Cherokee)		
Sediment	UNK	District-Wide Watershed Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Soil Erosion and Sedimentation Control Ord. (Code Secs.5-98 to 5-106) (City of Alpharetta)		
		E&S Record Keeping (City of Canton)		
		E&S Inspector Training (City of Canton)		
		E&S Program Enforcement (City of Canton)		
		Inspections (City of Canton)		
		Site Plan Review (Cherokee County)		
		Inspection Program (Cherokee County)		
		E&S Ordinance (City of Holly Springs)		
		Pamphlet (City of Holly Springs)		
		Streambank Protection Ordinance (City of Roswell)		
		Structural Control Measures (City of Roswell)		
		E&S Ordinance (City of Woodstock)		
		LDA Permit Requirements (City of Woodstock)		
		E&S Checklist (City of Woodstock)		
		Training (City of Woodstock)		
Citizen Complaints (City of Woodstock)				
Atmospheric Deposition	UNK			Further monitoring by GA EPD is recommended
Septic Systems	UNK	IAW O.C.G.A. 290-5-26	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this	
		Long-Term Wastewater Management Plan		
		Permitting of Septic Systems (Fulton County)		

	Database and Tracking of Un-sewered Areas (Fulton County)	segment.	
	Long-Term Wastewater Management Plan (Fulton County)		
	IAW O.C.G.A. 290-5-26 (Fulton County)		
	Providing sewer service to Developed Areas by 2030 (Fulton County)		

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	
Chlorophyll a	Georgia EPD, Water Protection Branch or local government	Recommended	2006	2007	TMDL Evaluation and Monitoring for 305(b) and 303(d) lists for Georgia

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

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
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 Public	Active and ongoing
City of Canton	The City will collaborate with Cherokee County with the Library of Education Materials, a program to disseminate educational materials to the population base, as part of the Public Education and Outreach on Stormwater Impacts BMPs.	General Public	December 2003
City of Canton	The City web page will be expanded to include a stormwater management link that will house information about the City's Stormwater Management Program and electronic versions of the informational brochures from the Library of Education as part of the Public Education and	General Public	December 2004

	Outreach on Stormwater Impacts BMPs.		
City of Canton	The City currently prints/distributes a newsletter six times per year and will be modified to include stormwater management issues as part of the Public Education and Outreach on Stormwater Impacts BMPs.	General Public	December 2003
City of Canton	Coordinate the participation of civic groups to assist the City with stenciling of drainage inlets or drainage structures within public rights-of-way as part of the Public Involvement/ Participation BMPs.	General Public	December 2004
City of Canton	The City will create a stakeholder advisory group to assist political leaders and City Staff with developing stormwater program policies and stormwater ordinances as part of the Public Involvement/ Participation BMPs.	Community Stakeholders	June 2004
City of Canton	Development of a Habitat Conservation Plan for Imperiled Aquatic Species of the Etowah River Basin including the City of Canton within Cherokee County as part of the Public Involvement/ Participation BMPs.	Etowah river Watershed Stakeholders	TBD
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
Cobb Water Quality Section, Adopt-A-Stream, ARC	Clean Water Campaign(Clean Water ads, literature, workshops)	general public, targeted industries	ongoing
Metropolitan North Georgia Water Planning District and Local Governments in 16 county District Area	Local Governments will participate in the Clean Water Campaign, a regional public education program. The program educates the public on the sources, causes and prevention of stormwater pollution, including fecal coliform.	General Public	2004
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
Fulton County	Educational Efforts (Pet Waste)	General Public	Ongoing
City of Holly Springs	The City will mail a flyer about its stormwater management program during the fall of each year to each home located within Holly Springs as part of the Public Education and Outreach on Stormwater Impacts BMPs and Public Involvement / Participation BMPs.	Citizens of Holly Springs, developers, engineers and builders	April 2004
City of Holly Springs	City staff will hold a public hearing each fall on the city's progress in fulfilling its stormwater management goals and invite public input as part of the Public Education and Outreach on Stormwater Impacts BMPs.	City residents and all interested parties	Fall 2004
City of Holly Springs	At annual City Council hearings, the City Council will hear a report from its staff and public comments are invited as part of the Public Education and Outreach on Stormwater Impacts BMPs.	General Public	Ongoing
City of Marietta	See Current Stormwater Management Plan	General Public	Ongoing
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 Public	Active and ongoing
City of Woodstock	Distribute pamphlets at businesses, schools, etc. on stormwater issues including hazards associated with illegal discharges and proper waste disposal as part of the Public Education and Outreach BMPs.	General Public	December 2003
City of Woodstock	Place articles/ advertisements in local newspaper updating the public on the Stormwater Management Program and stormwater issues as part of the Public Education and Outreach BMPs.	General Public	January 2004
City of Woodstock	Disseminate stormwater information and update public on stormwater program utilizing the City's website as part of the Public Education and Outreach BMPs.	General Public	December 2004
City of Woodstock	Develop storm drain stenciling program involving volunteers such as Boy Scouts, students church groups, etc as part of the Public Involvement/ Participation BMPs.	General Public	December 2003
City of Woodstock	Organize stakeholder/ citizen advisory group to provide input and decision making on stormwater issues and implementation of stormwater program as part of the Public Involvement/ Participation BMPs.	General Public	December 2003
City of Woodstock	Organize community and neighborhood streamside cleanup activities as part of the Public Involvement/ Participation BMPs.	General Public	December 2004

IX. MILESTONES/ MEASURES OF PROGRESS 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	
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	March	Refer to MS4 Annual Report

		progress, planned	2003	
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 progress, planned	June 2005	Refer to MS4 Annual Report
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.
Chicken Plant Discharge Connection	Cherokee County Water and	Complete	July 17,	Connect the chicken plant discharge to sewer system.

to Sewer System	Sewerage Authority		2005	
Stormwater Management Ord. (Code Secs. 5-201 to 5-223)	City of Alpharetta	Active and ongoing	1995 (Revised March 2004)	Refer to MS4 Annual Report
Stormwater Design Manual	City of Alpharetta	Active and ongoing	1995	Refer to MS4 Annual Report
Soil Erosion and Sedimentation Control Ord. (Code Secs.5-98 to 5-106)	City of Alpharetta	Active and ongoing	1989 (Updated in 2004)	Refer to MS4 Annual Report
Metropolitan North Georgia Water Planning District Model Ordinances	City of Alpharetta	Active and ongoing	2004	Refer to MS4 Annual Report
Stormwater Structural Control Maintenance	City of Alpharetta	Active and ongoing	2000	Refer to MS4 Annual Report
Maintaining Roadside Drainage Systems	City of Alpharetta	Active and ongoing	2000	Refer to MS4 Annual Report
Roadside Litter Removal	City of Alpharetta	Active and ongoing	2002	Refer to MS4 Annual Report
Illicit Discharge Program	City of Alpharetta	Active and ongoing	1995	Refer to MS4 Annual Report
Dry Weather Screening	City of Alpharetta	Active and ongoing	1998	Refer to MS4 Annual Report
Phase II MS4 NPDES Permit	City of Canton	Enforced	2004	Refer to MS4 Annual Report
Industry Database	City of Canton	In progress, planned	December 2005	Refer to MS4 Annual Report
Dry Weather Screening	City of Canton	In progress, planned	December 2005	Refer to MS4 Annual Report
Stormwater Information System	City of Canton	In progress, planned	March 2004	Refer to MS4 Annual Report
E&S Record Keeping	City of Canton	In progress, planned	March 2004	Refer to MS4 Annual Report
E&S Inspector Training	City of Canton	In progress, planned	March 2004	Refer to MS4 Annual Report
E&S Program Enforcement	City of Canton	In progress, planned	March 2003	Refer to MS4 Annual Report

Inspections	City of Canton	In progress, planned	May 2004	Refer to MS4 Annual Report
CIP Retrofit Program	City of Canton	In progress, planned	December 2005	Refer to MS4 Annual Report
GA Stormwater Manual	City of Canton	In progress, planned	September 2004	Refer to MS4 Annual Report
Drainage System Maintenance	City of Canton	In progress, planned	March 2003	Refer to MS4 Annual Report
MS4 Inspection Program	City of Canton	In progress, planned	December 2006	Refer to MS4 Annual Report
BMP Demonstration Project	City of Canton	In progress, planned	September 2005	Refer to MS4 Annual Report
Dry Weather Screening Program	Cobb County Water System: Water Quality Section	2005	2006	implemented into the program for 2006
Stream Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	1976	1976	aforementioned comprehensive bio and chem. monitoring including fecals and walks once a quarter
NPDES Fecal Coliform Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	2002	2002	collect fecal NPDES permit mandated samples at 8 sites
Stream walks at stream sewer crossings and manholes	Cobb Water: Engineering Inflow and Infiltration, Stream Monitoring	1988	1988	walk all segments for overflow at manholes and creek crossings
buffer ordinance	Community Development	1990	1990, 1999	regulates, maintains 50-200 feet buffers
education	ARC, Cobb County	1994	1994	ads and literature concerning water quality, fecals
nuisance ordinance, septic regulate	Cobb Board of Health	1988	1988	regulate and enforce septic tanks, removal of improper waste
Wetland and Buffer Preservation, beaver removal	USDA/Cobb County National Resource Conservation Service, U.S. Army Corp of Engineers, USDA/Stormwater	1996, 1998	1996, 1998	incentives for buffer restoration, fencing off and wetland protection
grease trap program	Cobb Water Protection	1988	1991	every restaurant inspected, prohibit discharge into septic
manhole raising program	Cobb Water Engineering	1999	1999	sewer caps raised above current/latest floodplain
CMOM Program	Cobb Water System: System Maintenance	2003	2003	Comprehensive program that provides incentives and gives the guidelines of how the County's collection

				system will operate.
Pet Waste Management Program	Cobb AAS, Keep Cobb Beautiful, Parks and Recreation	2003	2004	Control pet waste in parks
IAW O.C.G.A. 290-5-26	Fulton County Environmental Health Department	Enforced	June 30, 1980	Continue the process of reviewing the installation and repair of septic systems.
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)
Phase II MS4 NPDES Permit	City of Holly Springs	Enforced	2004	Refer to Annual Report
Mapping	City of Holly Springs	In progress, planned	January 2004	Continue mapping storm sewer system as part of illicit discharge detection and elimination program.
Newsletter	City of Holly Springs	In progress,	October 2004	Provide educational BMP literature as part of quarterly newsletter.

		planned		
E&S Ordinance	City of Holly Springs	In progress, planned	February 2005	Evaluate and revise current E&S ordinance per EPD and NRCS recommendations as part of the Construction Site Stormwater Runoff Control BMPs.
Pamphlet	City of Holly Springs	In progress, planned	None reported	Develop information pamphlet for training and certification programs for developers, engineers, builders and contractors as part of the Construction Site Stormwater Runoff Control BMPs.
Model Ordinance	City of Holly Springs	In progress, planned	June 2004	Adopt the MNGWP Model Ordinance for post-development stormwater runoff as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
GA Stormwater Manual	City of Holly Springs	In progress, planned	June 2004	Adopt and begin using the Georgia Stormwater Management Manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Policy Guide	City of Holly Springs	In progress, planned	December 2005	Develop a policy guide and details of BMPs and pollution prevention strategies relating to vehicle maintenance, washing, fueling, salt storage and what to do in case of accidents as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Annual Training	City of Holly Springs	In progress, planned	January 2004	Provide annual training for applicable municipal staff for stormwater and pollution prevention policies as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
NPDES Phase I MS-4 Program	City of Kennesaw	Active	1992	Refer to Annual Report
Erosion & Sedimentation Ordinances	City of Kennesaw	Enforced	1975, 2000	Continue requiring approved erosion control for construction, & 25-ft buffers on State waters.
Stormwater Ordinance	City of Kennesaw	Active	1998	Require new development to have approved stormwater detention facilities.
Stream Buffer Regulation	City of Kennesaw	Enforced	2000	Continue enforcing 50-ft. minimum stream buffer.
Tree Preservation Ordinance	City of Kennesaw	Enforced	7/99	Require preservation of existing trees and planting of new trees in new development.
Phase I MS4 Permit GAS000125	City of Marietta	ongoing		Refer to annual report
Phase II MS4 NPDES Permit	City of Mountain Park	Enforced	2004	Refer to Annual Report
Streambank Protection Ordinance	City of Roswell	Active and ongoing	June 19, 2000	As part of plan review process continue requiring a 100-foot undisturbed buffer and 150-foot impervious surface setback on all designated streams in the City. Also continue to prohibit Septic Tanks and drainfields in the 150-foot buffer.

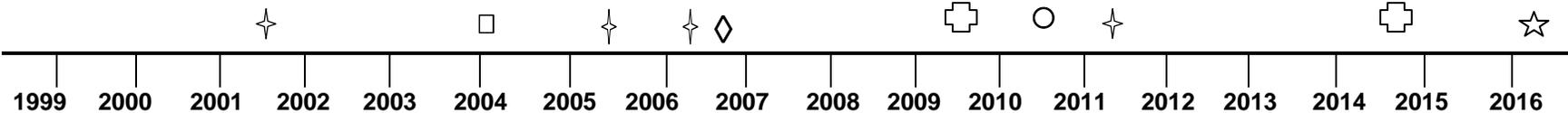
Structural Control Measures	City of Roswell	Active and ongoing	Amended, 02/06/2003	Require the use of the Georgia Stormwater Management Manual. City will continue to inspect its own facilities, and will issue violation notices for private facilities.
Steep Slopes Ordinance	City of Roswell	Active and ongoing	December 02, 2002	Continue requiring additional buffer depth or other protection measures on steep slopes adjacent to streams.
Street Maintenance	City of Roswell	Active and ongoing	Estimated circa 1980s	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
Illicit Discharge Detection and Elimination	City of Roswell	Active and ongoing	Estimated 1995 with permit	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.
Phase II MS4 NPDES Permit	City of Woodstock	Enforced	2004	Refer to annual report
Storm Sewer Map	City of Woodstock	In progress, planned	December 2006	Create a storm sewer map including location of all outfalls and receiving streams as part of the Illicit Discharge Detection and Elimination BMPs.
Ordinance	City of Woodstock	In progress, planned	December 2004	Create an ordinance prohibiting non-stormwater discharges into storm sewer system and appropriate enforcement procedures as part of the Illicit Discharge Detection and Elimination BMPs.
Inspection	City of Woodstock	In progress, planned	December 2006	Conduct dry weather inspections of storm sewer outfalls as part of the Illicit Discharge Detection and Elimination BMPs.
E&S Ordinance	City of Woodstock	In progress, planned	December 2004	Review and modify current erosion and sedimentation control ordinance to ensure and enforce proper erosion and sediment controls are used at construction sites (includes requirements for pollution control related construction activities) as part of the Construction Site Stormwater Runoff Control BMPs.
Training	City of Woodstock	In progress, planned	December 2005	Develop training and certification programs for builders and developers covering proper selection, installation, and maintenance of erosion control devices and erosion and sediment control ordinance regulations as part of the Construction Site Stormwater Runoff Control BMPs.
Citizen Complaints	City of Woodstock	In	December	Create procedures for receiving and responding to

		progress, planned	2005	complaints from citizens including phone numbers to contact city personnel and complaint forms as part of the Construction Site Stormwater Runoff Control BMPs.
LDA Permit Requirements	City of Woodstock	In progress, planned	December 2005	Establish preconstruction meetings prior to issuance of land disturbing activity (LDA) permits for construction projects to ensure developer understands erosion and sedimentation requirements as part of the Construction Site Stormwater Runoff Control BMPs.
E&S Checklist	City of Woodstock	In progress, planned	December 2004	Develop an erosion and sediment control checklist for city personnel involved with inspection of erosion and sediment control BMPs as part of the Construction Site Stormwater Runoff Control BMPs.
GA Stormwater Manual	City of Woodstock	In progress, planned	December 2006	Adopt the Georgia Stormwater Management Manual as the City's stormwater design manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Site Concept Meeting	City of Woodstock	In progress, planned	December 2005	Require a site concept meeting with owner/developer and engineer at the preliminary/planning stage. Encourage and assist better site design by incorporating non-structural controls as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Inspections	City of Woodstock	In progress, planned	December 2005	Develop maintenance and inspection procedures for structural BMPs for existing and new development as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Training	City of Woodstock	In progress, planned	December 2006	Develop and implement training program for city personnel covering potential water quality impacts from municipal facilities and good housekeeping practices as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Inventory	City of Woodstock	In progress, planned	December 2005	Conduct an inventory of all current and potential municipal operations including facilities and activities performed as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Pollution Prevention Guidance	City of Woodstock	In progress, planned	December 2006	Provide pollution prevention guidance for each municipal activity identified in the inventory as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Street Sweeping	City of Woodstock	In progress,	December 2005	Implement a street sweeping program as part of the Pollution Prevention/ Good House Keeping for Municipal

		planned		Operations BMPs.
Water Quality BMPs	City of Woodstock	In progress, planned	December 2006	Incorporate water quality BMPs into new flood control projects where possible such as using wetland ponds instead of dry ponds for flood control as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
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 ☆

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.

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	

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 Etowah HCP	PO Box 287	Acworth	GA	30101	678-758-0781	curt@etowahhcp.org
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	408 Broad Street	Rome	GA	30161	706-232-2724	keady@coosa.org

River Basin Initiative						
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		gl@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@acworthcable.net
Roy Taylor / Cherokee Homeowners	360 E. Marietta Street	Canton	GA	30114	770-720-4669	wrldeas@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	Moon Station Road	Kennesaw	GA		404-392-1156	sturner@kennesaw-ga.us

Kennesaw						
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
Lake Allatoona TMDL Segment
(Little River Embayment)
In the
Coosa River Basin
March 1, 2006

Visual Field Survey

For

**Lake Allatoona TMDL Segment
(Little River Embayment)**

In the

Coosa - Tallapoosa 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.

Table of Contents

1.0	INTRODUCTION.....	4
1.1	Location.....	4
1.2	Watershed Description	4
2.0	METHODOLOGY.....	9
3.0	FIELD FINDINGS.....	9
3.1	General Characteristics.....	9
3.2	Point Sources	25
3.3	Non-Point Sources.....	29
3.4	Other Potential Individual Sources of Pollution.....	33
4.0	RANKS ASSIGNED TO POLLUTION SOURCES.....	37
5.0	SUMMARY OF FINDINGS.....	38
6.0	STAKEHOLDER INVOLVEMENT	38

List of Tables

Table 1.	Watershed Land Cover Comparison.....	5
Table 2.	TMDL Watershed Land Cover Matrix (Aggregated ARC Land Cover Categories)	5
Table 3.	Georgia EPD Sewer Spill Data.....	28

List of Figures

Figure 1.	Lake Allatoona Little River Embayment Watershed.....	6
Figure 2A.	ARC 2001 Land Cover for Lake Allatoona Little River Embayment Watershed.....	7
Figure 2B.	ARC 2003 Land Cover for Lake Allatoona Little River Embayment Watershed.....	8
Figure 3.	Lake Allatoona Little River Embayment Watershed Potential Individual Sources of Pollution Identified in ARC's 2001 Source Water Assessment Project.....	10
Figure 4.	Location of Images Taken During Field Survey.....	11
Figure 5.	New development adjacent to Blankets Creek off Prominence Point Road.....	12
Figure 6.	Swamp-like area at Mill Creek on Collet Road.....	13
Figure 7.	Five Star Horse Ranch on Birmingham Road adjacent to the Little River.....	13
Figure 8.	Small lot neighborhood on Willow Creek Road adjacent to Rubes Creek.....	14
Figure 9.	At the private soccer fields next to Little Noonday Creek, trenches have been dug between each field.....	15
Figure 10.	Lake Allatoona looking north of the Bells Ferry Road Bridge.....	16
Figure 11.	Looking south toward Bells Ferry Road behind restaurant across from Little River Marina.....	16

Figure 12.	Picture taken from the parking lot at boat ramp on the west side of the Bells Ferry Road Bridge.....	17
Figure 13.	Embayment off Bells Ferry Road on the road leading to the YMCA Camp.....	17
Figure 14.	Little River Embayment at Rope Mill Park looking north towards I-575 bridge.....	18
Figure 15.	Little River Embayment at Rope Mill Park looking south.....	18
Figure 16.	Failed erosion control measure at Rope Mill Park.....	19
Figure 17.	Rip rap and straw have been used for erosion control on Noonday Creek at the county soccer fields.....	19
Figure 18.	Failed erosion control measures on Noonday and Hwy 92.....	20
Figure 19.	This fence is collapsing due to erosion on Little Noonday Creek at Blackwell Road.....	20
Figure 20.	Little Noonday Creek at Annandale Road.....	21
Figure 21.	Grass clippings and algae in Little Noonday Creek at Annandale Road.....	21
Figure 22.	Dry boat storage facility at the Little River Marina.....	22
Figure 23.	One of the docks behind the restaurant across from Little River Marina has operational fuel pumps.....	22
Figure 24.	A floating cabin near the Little River Marina.....	23
Figure 25.	Lake Allatoona looking north from the restaurant's parking lot.....	24
Figure 26.	Overflowing trashcan next to the lake in the restaurant's parking lot.....	24
Figure 27.	Signs at Little River Marina from the top down state that it is a private dock, no gas allowed on docks, no smoking and don't pollute.....	25
Figure 28.	Blue Circle Materials on Univeter Road.....	26
Figure 29.	Vulcan Materials on Duncan Road.....	26
Figure 30.	Noonday WWTP on Shallowford Road.....	27
Figure 31.	Ducks were observed in restaurant parking lot across from Little River Marina adjacent to the lake.....	29
Figure 32.	Dog tracks adjacent to the TMDL segment at Rope Mill Park.....	30
Figure 33.	Horses on Pinyan Road adjacent to a tributary to Mill Creek.....	30
Figure 34.	Goat on Mountain Road.....	31
Figure 35.	Golf course on Cox Road adjacent to Little River.....	31
Figure 36.	Mill Creek runs through the golf course at Woodmont Estates.....	32
Figure 37.	Submersed algae in Mill Creek at Woodmont Estates golf course.....	32
Figure 38.	Operational chicken plant on Haley Farm Road, adjacent to a tributary to Mill Creek.....	34
Figure 39.	Pilgrim's Pride Poultry Plant off Univeter Road.....	34
Figure 40.	Lake Sovereign after the fish kills in 2000. Each dot in the picture is a dead fish.....	35
Figure 41.	A healthier Lake Sovereign in 2005.....	36
Figure 42.	Dam structure where Lake Sovereign flows into Blankets Creek.....	36
Figure 43.	Algae at the Lake Sovereign dam.....	37

1.0 INTRODUCTION

1.1 Location

The Lake Allatoona (Little River Embayment) TMDL segment is located in the northern portion of the Atlanta Metropolitan region in Cherokee County. The segment is listed for not meeting the State water quality standards for Chlorophyll *a*. The listed portion of Lake Allatoona totals 950 acres. The Lake Allatoona (Little River Embayment) watershed includes portions of Cherokee, Cobb, and Fulton Counties as well as a small portion of Forsyth County. As shown in Figure 1, the TMDL segment begins at the confluences of Noonday Creek and the Little River. This TMDL segment ends at the main body of Lake Allatoona.

1.2 Watershed Description

The Lake Allatoona (Little River Embayment) TMDL segment watershed is comprised of 137,696 acres of land. The Lake Allatoona (Little River Embayment) watershed is located within HUC 10 – 0315010408. Mapping of the watershed shows that land cover within the watershed is predominantly residential and forest/open which accounts for almost 46% and 26.06% of the area in 2003, respectively. Based on ARC's 2001 and 2003 land cover, the most notable changes in the watershed were a loss in forest/open space and agriculture and a gain in medium density residential. ARC land cover data from 2001 and 2003 are presented in Table 1. Table 2 outlines the format of ARC's land cover codes that have been aggregated into the categories used for this project.

Several land cover changes between 2001 and 2003 occurred near the TMDL listed water body. The most significant land cover changes between 2001 and 2003 adjacent to the Little River Embayment were two areas near the south end of the embayment. One area is located between the Noonday and Little River confluences and shifted over 221 acres from forest or transitional to low density residential, over 114 acres from forest to transitional and 30 acres from forest to industrial. The other area is located east of the embayment and had over 146 acres shift from forest to transitional.

Other areas of change adjacent to the embayment include a 66-acre area on the northeast side of the embayment that shifted from transitional to medium density residential and 40-acre site south of Blankets Creek that shifted from forest to low density residential. There are several other instances adjacent to the Embayment's major tributaries where forest, agriculture or transitional have become transitional or low density residential. A map showing land cover in the watershed is included as Figure 2A and 2B.

Table 1. Watershed Land Cover (Source: ARC 2001 AND 2003 LandPro Data)

Land Cover Classification	Land Cover 2001		Land Cover 2003		Land Cover Difference	
	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area
Medium Density Residential	35,257.05	25.61%	37,818.76	27.47%	2,561.71	1.86%
Forest/ Open Space	37,880.94	27.51%	35,888.66	26.06%	-1,992.28	-1.45%
Low Density Residential	24,920.98	18.10%	25,357.62	18.42%	436.65	0.32%
Agricultural Lands	20,496.96	14.89%	18,598.39	13.51%	-1,898.57	-1.38%
Commercial	8,915.17	6.47%	9,388.14	6.82%	472.97	0.34%
Transitional/ Extractive Lands	4,853.86	3.53%	4,728.85	3.43%	-125.01	-0.09%
Water/ Wetlands	2,356.32	1.71%	2,398.99	1.74%	42.68	0.03%
High Density Residential	1,280.19	0.93%	1,682.45	1.22%	402.26	0.29%
Transportation/ Utilities	1,625.59	1.18%	1,674.75	1.22%	49.17	0.04%
Industrial/ Institutional	108.53	0.08%	158.44	0.12%	49.91	0.04%
Total Acres	137,696	100%	137,696	100%		

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

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

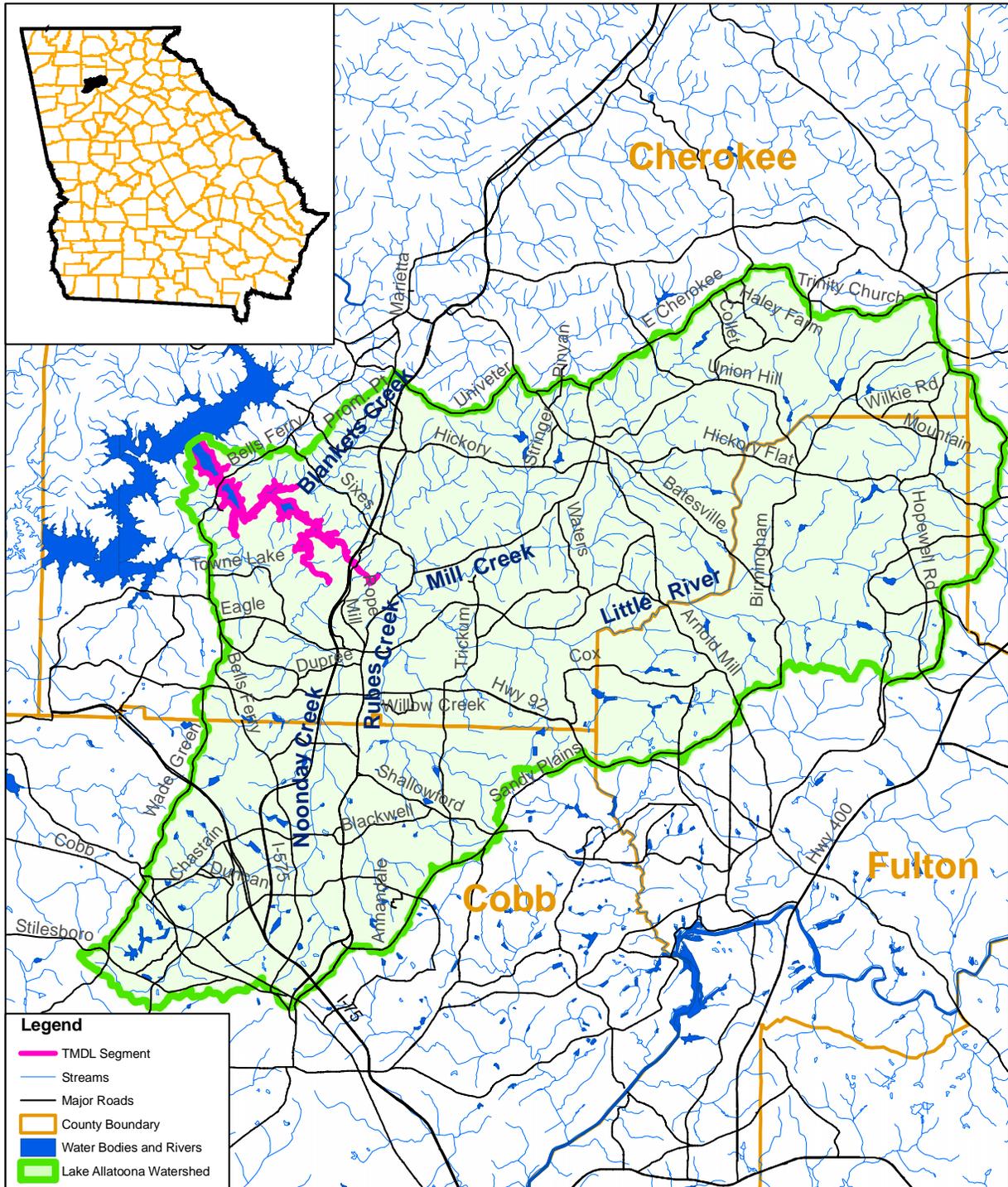
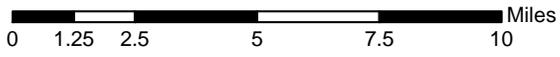
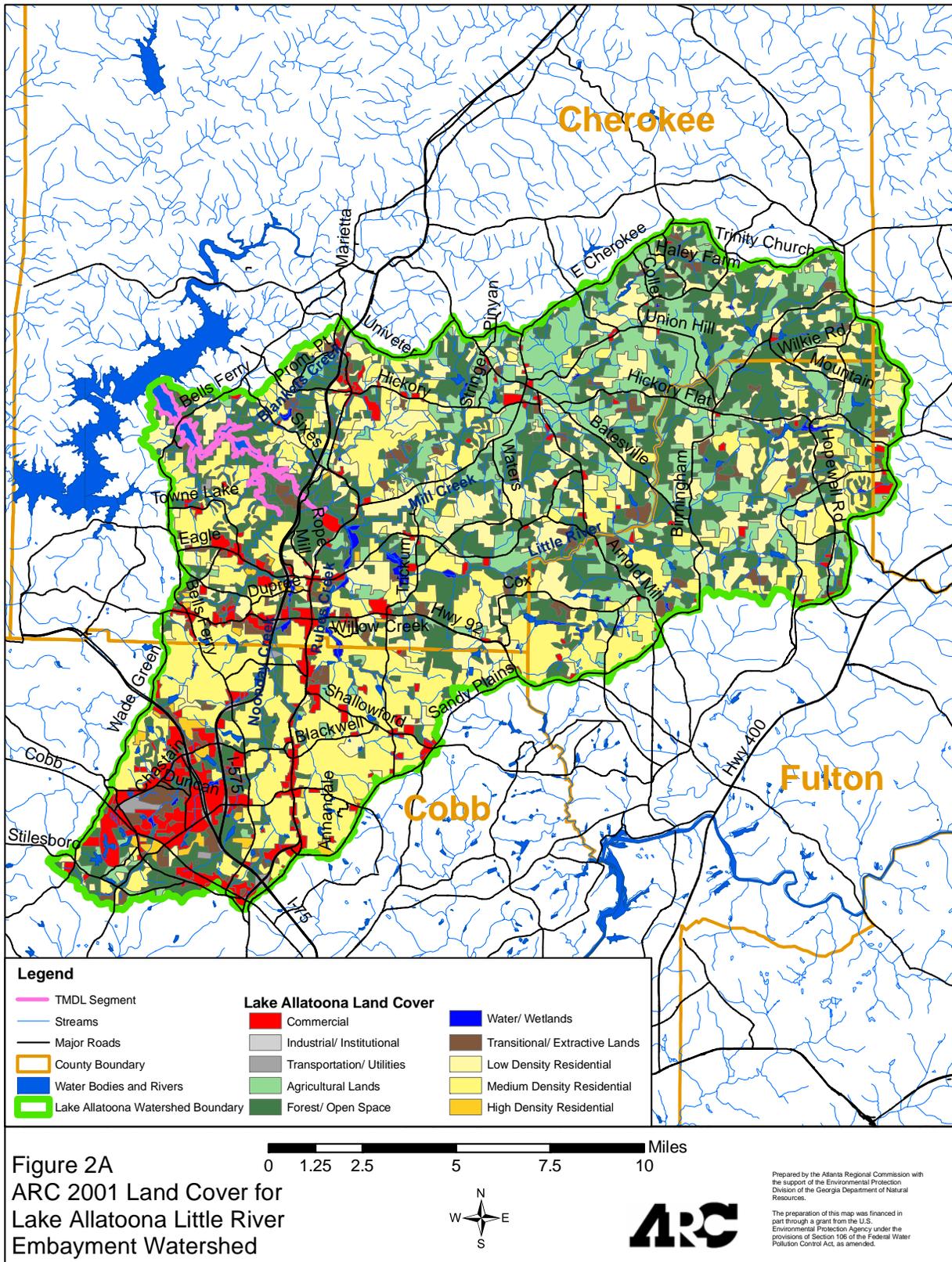
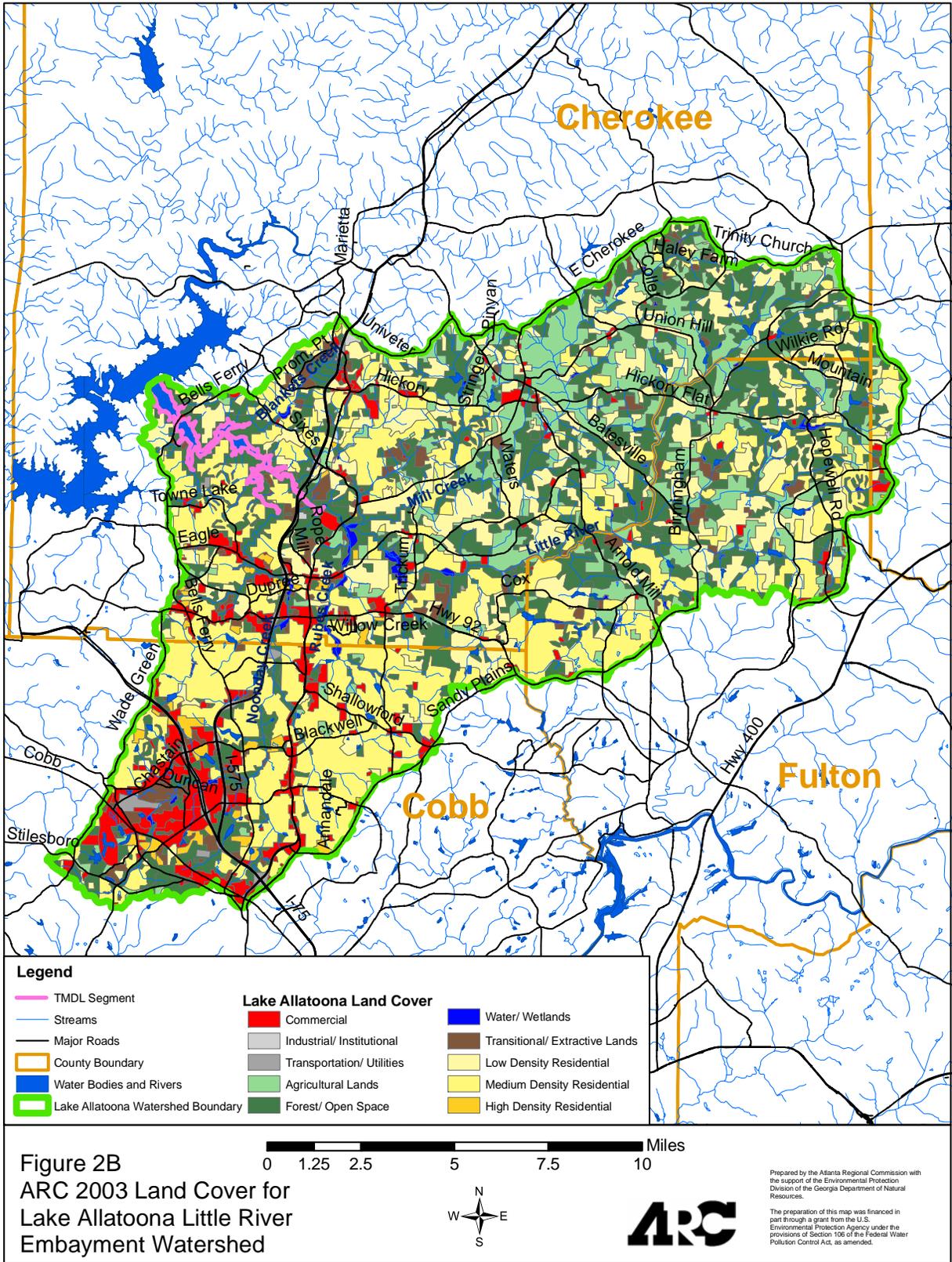


Figure 1
Lake Allatoona
Little River Embayment
Watershed



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 Lake Allatoona (Little River Embayment) watershed are shown in Figure 3. Additionally, 2004 aerial photos were compiled and used to further evaluate land use along the segment prior to the beginning of field observations.

Using guidance documents provided by the state, a field assessment of the watershed was conducted on July 25 – 29, 2005. The initial step was a windshield survey of the Lake Allatoona (Little River Embayment) watershed. The land cover in the area was verified in addition to careful observations of the current conditions. Following completion of the windshield survey, a limited foot survey of the segment was performed where access permitted. The purpose of the segment walk was to identify and observe possible sources of pollution. Observations were documented and captured in photographs of the watershed. A map of included images taken during the visual field survey is shown as Figure 4.

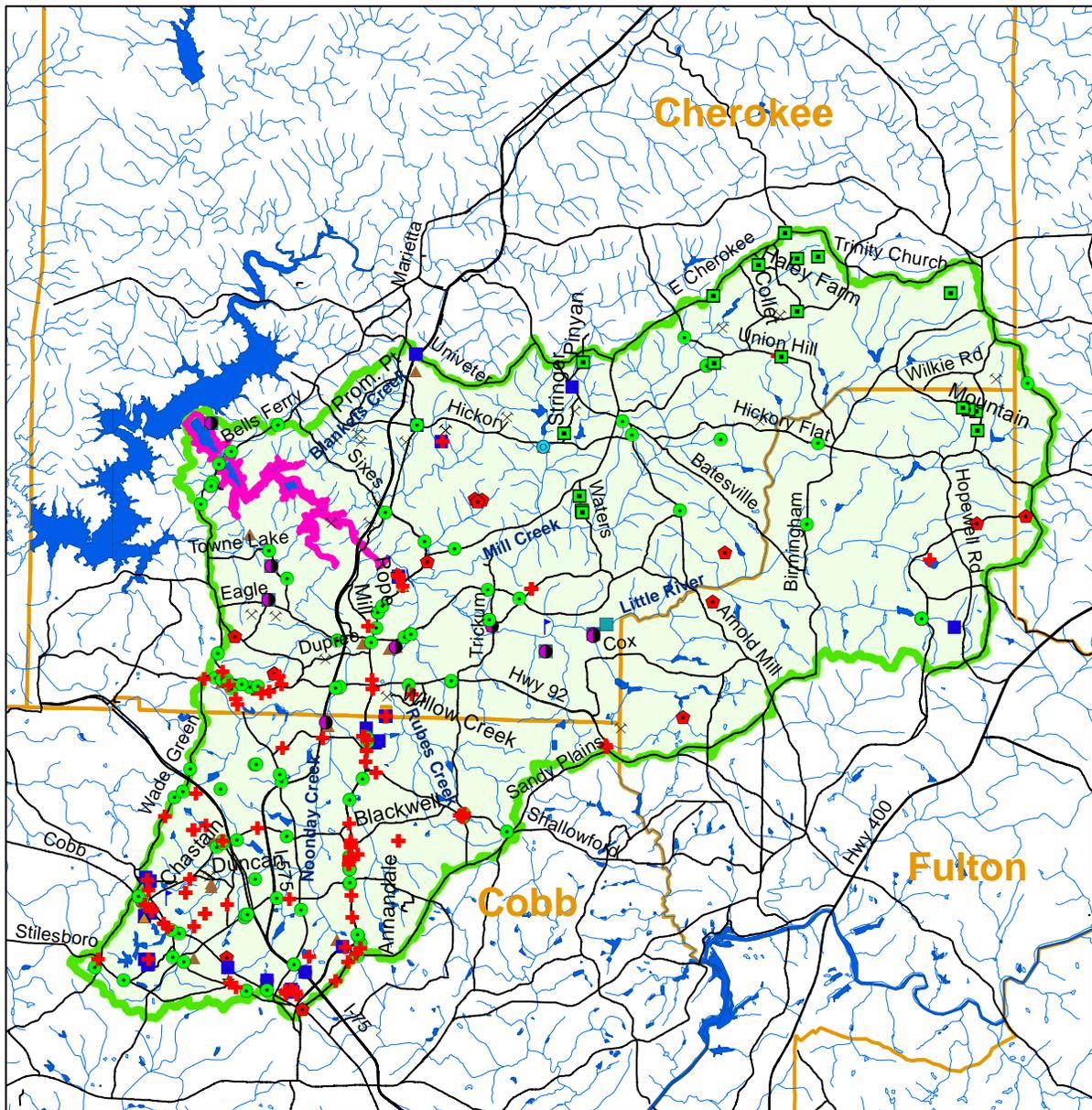
The 1990 EPA Lake and Reservoir Restoration Guidance Manual (Second Edition) states that the biological activity of a lake can be severely limited by phosphorous through stimulation of algae productivity. Algal blooms, odor, oxygen depletion and fish kills are a result of high phosphorous levels in the water. High concentrations of phosphorus are found in wastewater, fertilizers, agricultural drainage, detergents and municipal sewage. The EPA Guidance Manual also states that the sedimentation process affects biomass levels in a lake. Silt, algae, animal feces, dead organisms and erosion are all sources of sediment. During the field survey potential sources of phosphorous and sediment was documented.

3.0 FIELD FINDINGS

3.1 General Characteristics

The Lake Allatoona Little River Embayment has five main tributaries including Blankets Creek, Mill Creek, Little River, Rubes Creek and Noonday Creek. The drainage from each of these tributaries plays a significant role in the water quality of the embayment; therefore, each tributary is described below.

Blankets Creek is located in Cherokee County in the north section of the watershed. The creek flows southwest towards its confluence with the embayment. Until July 17, 2005, a large poultry plant on Univeter Road has discharged into Blankets Creek just below its headwaters.



Legend

SWAP

- | | | | |
|----------------------------|--|---------------------------------|--------------------------|
| Agriculture | LAS Permit Holders | Mining | TMDL Segment |
| Airports | Landfills | NPDES Permit Holders | Streams |
| Fuel Facilities | Large Industries Which Have Bulk Chemical and Petro. Storage | Recycling Centers | Major Roads |
| Garbage Transfer Stations | Large Industries Which Utilize Hazardous Chemicals | Wastewater Treatment Facilities | County Boundary |
| Hazardous Waste Facilities | Marinas | Water Treatment Plants | Water Bodies and Rivers |
| | | | Lake Allatoona Watershed |

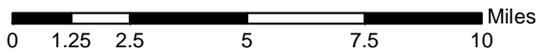


Figure 3
 Lake Allatoona Little River Embayment Watershed
 Potential Individual Sources of Pollution
 Identified in ARC's 2001 Source Water
 Assessment Project



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 108 of the Federal Water Pollution Control Act, as amended.

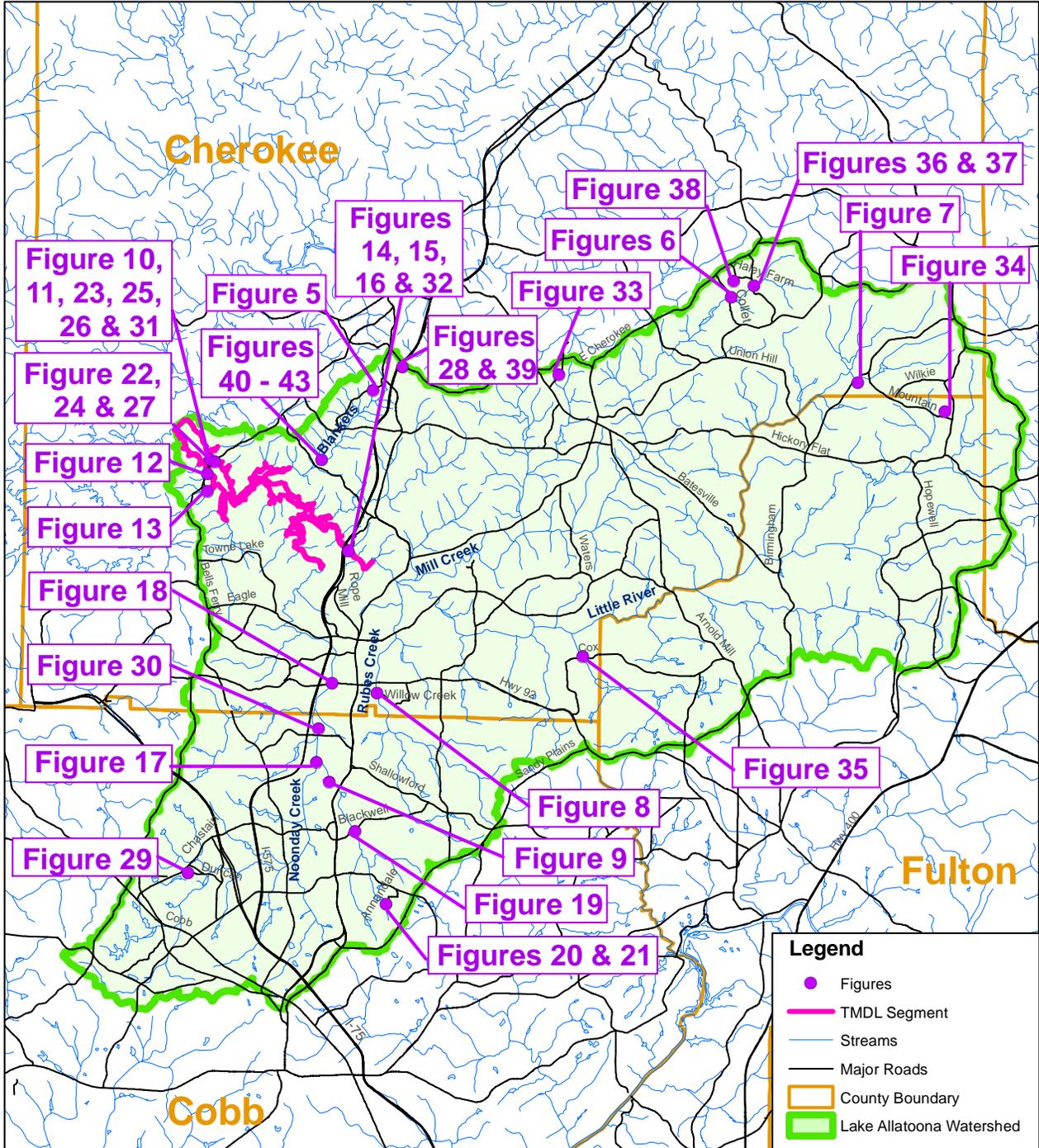


Figure 4
 Location of Images Taken
 During Field Survey

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.



Atlanta Regional Commission 2004 aerial photography showed multiple land clearings adjacent to the creek south of the Univeter Road. Several residential developments both new and still under construction were observed during the field studies (Figure 5). South of these developments the creek flows through Lake Sovereign, which has had water quality problems that are further discussed in Section 3.4 of this document. In several of these residential neighborhoods, little vegetative buffer to the creek and lake remains.



Figure 5. New development adjacent to Blankets Creek off Prominence Point Road

Mill Creek is located in Cherokee County. Its headwaters begin in the northeast section of the watershed and flow southwest towards its confluence with Little River just prior to Little River's confluence with the embayment. The Mill Creek watershed has an abundance of horse farms, numerous garden nurseries and chicken houses.

The golf course at Woodmont Estates surrounds Mill Creek near its headwaters. The portion of Mill Creek running through the golf course has been dammed to create a lake at the golf course which is buffered only by turf. Mill Creek features a swamp-like area south of the golf course (Figure 6). South of the golf course Mill Creek is mainly surrounded by woods and pastures until its confluence with Little River. Several of the pastures have little to no vegetative buffer.



Figure 6. Swamp-like area at Mill Creek on Collet Road

Little River is located in Cherokee County and also borders Cherokee and Fulton Counties for several miles. Little River's headwaters flow southwest and then west towards its confluence with the Embayment. The Little River watershed features several horse farms (Figure 7), a couple of chicken houses and mainly low density residential neighborhoods.



Figure 7. Five Star Horse Ranch on Birmingham Road adjacent to Little River

Woods and pastures are the main features adjacent to Little River. South of Batesville Road and again north of Cox Road the river passes through golf courses. Several pastures and the two golf courses provide little to no vegetative buffer. Residential development is under construction east of Trickum Road and an industrial park is located just south of Little River prior to its confluence with the embayment.

The headwaters of Rubes Creek are in Cobb County. The stream flows north into Cherokee County where it flows into Little River at the same location as the Mill Creek - Little River confluence. Rubes Creek is surrounded by residential neighborhoods (Figure 8); however, woods and brush are the main features adjacent to the creek.



Figure 8. Small lot neighborhood on Willow Creek Road adjacent to Rubes Creek

The headwaters of Rubes Creek begin in a commercial area and pass through or is adjacent to five more commercial areas prior to its confluence with Little River. In one of these areas just north of Highway 92 there is a car wash adjacent to the creek. The run-off from the car wash leads directly to the creek. Rubes Creek passes through one small hobby horse farm at Blackwell Road and two larger horse farms prior to its confluence with Little River. One small industrial area is located adjacent to the creek south of Arnold Mill Road.

Noonday creek headwaters are located in Cobb County in the southwest section of the embayment watershed. The waters flow in a northern direction into Cherokee County and ends at its confluence with the embayment. This area of Cobb County is highly developed and the vegetative buffers of wood and brush are generally narrow.

Noonday Creek passes through a commercial area just downstream from its headwaters and then passes through a golf course. High density residential and a large commercial area surround the creek near Cobb Parkway. The creek then flows through an airport, transitional areas and then more commercial north of the airport. Further downstream, a golf course is adjacent to the creek north of Chastain Road. Several soccer fields are adjacent to both Noonday and Little Noonday in the area near their confluence (Figure 9). There is only a thin vegetative buffer between the soccer fields and the creeks. As Noonday Creek flows into Cherokee County there is generally a wider vegetative buffer.



Figure 9. At the private soccer fields next to Little Noonday Creek, trenches have been dug between each field. The trenches guide the run-off directly into Noonday.

The Lake Allatoona (Little River Embayment) TMDL segment is consistently bordered by a wide vegetative buffer that is wooded with thick brush. This is due to the fact that the US Army Corp of Engineers does not allow development in the areas surrounding Lake Allatoona below the elevation of 836 feet to avoid building in the floodplain.

There are a few exceptions where there is little to no vegetative buffer. The Little River Marina, the restaurant across from the marina and public boat dock near the Bells Ferry Road Bridge crossing all feature parking lots that back up to the water. A YMCA facility off Bells Ferry Road features an area with no distinct vegetative buffer to allow access to aquatic activities to the campers. Also, the newly constructed Rope Mill Park located on Rope Mill Road south of I-575 provides little to no vegetative buffer. General photographs of the embayment's condition are shown in figures 10 - 15.



Figure 10. Lake Allatoona looking north of the Bells Ferry Road Bridge



Figure 11. Looking south toward Bells Ferry Road behind a restaurant across from Little River Marina.



Figure 12. Picture taken from the parking lot at the boat ramp on the west side of the Bells Ferry Road Bridge



Figure 13. Embayment off Bells Ferry Road on the road leading to the YMCA Camp



Figure 14. Little River Embayment at Rope Mill Park looking north towards I-575 bridge



Figure 15. Little River Embayment at Rope Mill Park looking south

The only erosion observed around the embayment was in small areas at Rope Mill Park (Figure 16). Occasional areas of erosion were observed along tributaries to the Little River Embayment. Noonday Creek had the most significant erosion problems (Figure 17 – 21).



Figure 16. Failed erosion control measure at Rope Mill Park



Figure 17. Rip rap and straw have been used for erosion control on Noonday Creek at the county soccer fields. There is no vegetative buffer between the creek and the road.



Figure 18. Failed erosion control measures on Noonday and Hwy 92



Figure 19. This fence is collapsing due to erosion on Little Noonday Creek at Blackwell Road.

Little Noonday Creek at Annandale Road wraps around a resident's yard. Grass is the only buffer and a concrete wall and a wooden wall have collapsed into the creek. It appears these structures were probably put in place for bank stabilization. Significant portions of both walls have collapsed and erosion is apparent on both sides of the stream bank (Figure 20). Other issues with the stream in this yard include grass clippings that have been dumped on the bank and algae were observed (Figure 21).



Figure 20. Little Noonday Creek at Annandale Road



Figure 21. Grass clippings and algae in Little Noonday Creek at Annandale Road

During the fieldwork, the following observations were made along the TMDL segment: two bridges that correspond to the two road crossings as shown in Figure 1, one marina, one restaurant with a dock on the lake across from the marina, one public boat ramp and parking lot, two campsites, one wildlife preserve and several floating cabins on the lake near the marina (Figures 22 – 24).



Figure 22. Dry boat storage facility at the Little River Marina



Figure 23. One of the docks behind the restaurant across from Little River Marina has operational fuel pumps

There were approximately 8 to 10 cabins floating on pontoons adjacent to Little River Marina. These cabins have docks that are connected to the shore. After contacting two owners of these cabins it is understood that electricity is generally available in the cabins; however, running water is not.

Owners are capable of attaching a water tank under the cabins but it is uncertain if any owners have running water. One owner that was contacted claims there are no bathrooms in the cabins; however, the only other nearby facility is one portable toilet (porta-potty) located at the top of the hill. It could not be determined if these cabins generate wastewater or how that wastewater is disposed.



Figure 24. A floating cabin near the Little River Marina

The embayment is occasionally littered with small pieces of trash such as cans and bottles. In the areas surrounding the Bells Ferry Road Bridge crossing litter is moderate to heavy. Also, there were several porta-potties, trash cans, 2 dumpsters and one grease bin located adjacent to the lake in this area (Figures 25 – 26).



Figure 25. Lake Allatoona looking north from the restaurant's parking lot.



Figure 26. Overflowing trash can next to the lake in the restaurant's parking lot

At Little River Marina, staff was observed patrolling the parking lot emptying trash cans and picking up litter. The marina also had several signs adjacent to the water that asked people not to pollute, smoke or take fuel on the docks (Figure 27).



Figure 27. Signs at Little River Marina from the top down state that it is a private dock, no gas allowed on docks, no smoking and don't pollute.

Tropical Depression Cindy passed through the Lake Allatoona Watershed on July 5th, 2005. The field work for this TMDL segment occurred on July 14th and July 15th, 2005. The weather between the tropical depression and the field work consisted mostly of rain and thunderstorms. Therefore, the water was brown and turbid in several instances. Potential sources affecting the overall health of Lake Allatoona (Little River Embayment) are discussed in the Point Source and Non-point Source sections.

3.2 Point Sources

There are 10 permitted point source discharges in the Lake Allatoona (Little River Embayment) TMDL segment watershed that include Blue Circle Inc., Chapman Elementary School, Cherokee County Water and Sewerage Authority's Rose Creek WRF, Cobb County's Noonday WWTP, Fulton County's Little River WPC, Kennesaw Mountain Estates, Little River Elementary School, Pilgrims Pride Inc., Vulcan Materials Kennesaw Quarry and the City of Woodstock's WPCP (Figures 28 - 30).



Figure 28. Blue Circle Materials on Univeter Road



Figure 29. Vulcan Materials on Duncan Road



Figure 30. Noonday WWTP on Shallowford Road

Sewer spill data was obtained from GAEPD for 2002 - 2005. The Georgia EPD sewer spill data indicates a total of 394,105 gallons have been spilled in the Lake Allatoona Little River Embayment watershed between 2002 and 2005. The Noonday Creek watershed accounts for 323,800 gallons of the total spill amount. In 2004, the City of Woodstock had one spill in the Noonday Creek watershed that totaled 210,000 gallons. The spill was caused by a pump station on Dupree Road that stopped pumping. The result was a back up in the sewer lines and the overflowing of manholes. More detailed information concerning sewer spills from 2002 to 2005 can be reviewed in Table 3.

Table 3. Georgia EPD Sewer Spill Data

WATERSHED SPILL SUMMARY DATA 2002 - 2005	NOONDAY		RUBES		ALLATOONA (excluding Noonday & Rubes)		TOTAL ALLATOONA	
	Number of Spills	Gallons Spilled	Number of Spills	Gallons Spilled	Number of Spills	Gallons Spilled	Number of Spills	Gallons Spilled
Spills under 500 gal.	4	1,435	0	0	2	400	6	1,835
Spills 500 - 999 gal.	12	8,635	5	3,000	1	800	18	12,435
Spills 1000 - 2500 gal.	14	21,490	6	8,880	7	9,805	27*	40,175
Spills 2500 - 4999 gal.	5	15,880	4	11,220	1	2,500	10	29,600
Spills 5000 - 9,999 gal.	2	13,900	0	0	2	11,300	4	25,200
Spills over 10,000 gal.	3	262,460	0	0	2	22,400	5	284,860
Total Spills	40	323,800	15	23,100	15	47,205	70	394,105
Highest Spill		210,000		3,320		12,000		210,000
Second Highest Spill		40,000		2,820		10,400		40,000
Third Highest Spill		12,460		2,580		6,300		12,460
2002 Spills	18	85,455	6	7,960	6	26,700	30	120,115
2003 Spills	8	12,170	5	9,800	1	6,300	14	28,270
2004 Spills	9	220,740	3	2,840	5	12,080	17	235,660
2005 Spills (Jan. - June)	5	5,435	1	2,500	3	2,125	9	10,060
RESPONSIBLE PARTY (as listed in GAEPD Spill Data)								
Cherokee	2	42,180	0	0	11	33,825	13	76,005
City of Woodstock	4	218,400	2	2,100	0	0	6	220,500
Cobb	33	62,320	13	21,000	3	2,980	49	86,300
Columbia Creek APA	0	0	0	0	1	10,400	1	10,400
Private Line	1	900	0	0	0	0	1	900

Notes: Light gray areas are not applicable

* 21 of 27 spills are between 1000 and 1999 gallons.

**All three highest spills are in the Noonday Watershed.

3.3 Non-Point Sources

The visual field survey revealed potential non-point sources of pollutants that may affect Lake Allatoona (Little River Embayment). The majority of the watershed in Cobb and Fulton Counties appear to be sewered. There may be isolated areas where older homes are served by septic systems.

Cobb County's sewer line map was reviewed and while the majority of the watershed in Cobb County is sewered, there appears to be small pockets of homes still served by septic systems. The Cherokee County sewer line data was also reviewed and the watershed in Cherokee County appears to have large areas of sewer service but there are still large areas where many homes are served by septic systems. The majority of the cities of Woodstock and Canton and the Town Lake region are sewered. Urban run-off from the Town Lake area flows directly into the Embayment.

Wildlife was observed frequently in the lake as well as in areas adjacent to the lake and its tributaries. Geese and ducks were frequently observed in the watershed. Over 30 ducks and geese were observed in and around the lake in the parking lot of the restaurant across from the marina (Figure 31). An abundance of dog tracks were observed on the banks of the TMDL segment at Rope Mill Park (Figure 32) and raccoon track were observed along the banks of Noonday Creek.



Figure 31. Ducks were observed in the restaurant parking lot across from Little River Marina adjacent to the lake



Figure 32. Dog tracks adjacent to the TMDL segment at Rope Mill Park

There were no farms located adjacent to the TMDL segment; however, several horses were observed in the watershed in the north and northeast sections of the watershed mainly in the vicinity of Mill Creek and Little River (Figure 33). Three horse farms were observed adjacent to Rubes Creek and one horse was observed adjacent to Little Noonday Creek. Other domestic animals observed include ponies on Stringer Road, goats on Hopewell Road and Mountain Road (Figure 34) and cows on Cherokee Road, Waters Road and Batesville Road. No stream access for any farm animals were observed in the watershed.



Figure 33. Horses on Pinyan Road adjacent to a tributary to Mill Creek



Figure 34. Goat on Mountain Road.

Based on ARC 2003 landcover data there are 2686.18 acres designated as golf course in the Lake Allatoona Little River Embayment watershed. Golf courses use fertilizers to maintain a healthy, attractive golf course. The golf course off Cox Road is one example of several golf courses in the watershed that were adjacent to a Lake Allatoona (Little River Embayment) tributary (Figure 35). Mill Creek was damned at Woodmont Estates to create a lake with no vegetative buffer in the middle of the community golf course (Figure 36 - 37).



Figure 35. Golf course on Cox Road adjacent to Little River.



Figure 36. Mill Creek runs through the golf course at Woodmont Estates



Figure 37. Submersed algae in Mill Creek at Woodmont Estates golf course

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 Lake Allatoona (Little River Embayment) watershed (Figure 3). Four potential individual sources of pollution were observed directly adjacent to the segment including Chapel Knoll WWTP (which is also a LAS Permit holder), one fuel facility, one marina and one mine.

There are 23 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. There are no chicken houses adjacent to the TMDL segment; however, there are some chicken houses adjacent to nearby tributaries in the northeast section of the watershed (Figure 38). Five of the 23 chicken houses were observed to be in operation and 14 out of 23 sites were observed to no longer be in operation. It could not be determined whether the other four chicken houses were in operation due to limited access. Two additional operational chicken houses were observed at Wilkie and Mountain Roads that were not in the 2001 ARC Source Water Assessment Project.



Figure 38. Operational chicken plant on Haley Farm Road, adjacent to a tributary to Mill Creek

One poultry operation is listed as a LAS permitted facility instead of agricultural due to the intense nature of its operations (Figure 39). This site is located at the Univeter Road Industrial District adjacent to Blankets Creek and is currently owned and operated by Pilgrim's Pride. Several problems occurred under its former owners and operators, Seaboard Farms of Canton, Inc and ConAgra, Inc, respectively. Until July 17, 2005, the poultry plant discharged directly into Blankets Creek, which is a tributary to the embayment.



Figure 39. Pilgrim's Pride Poultry Plant off Univeter Road

Georgia DNR Fisheries has provided ARC with Fish Kill Investigation reports for the Lake Allatoona watershed. These included records of two fish kills which occurred in the Noonday section of the embayment in 1974 and 1987 and the causes were unknown. As well as records for four fish kills which occurred in Blankets Creek in 1990, 1997, 1998 and 2000.

The GA DNR fish kill report from the 1990 Blankets Creek fish kill identified the cause as unknown; however, the report stated that the Seaboard Farms discharge constituted approximately 90% of the flow in the creek and that the only possible source of pollution was Seaboard Farms. The other reports indicated depleted oxygen levels as the most-likely cause of the fish kills. The 2000 Blankets Creek fish kill report further stated that the cause of the fish kill was an oxygen depletion problem caused by wastes from the ConAgra plant, and the plant's discharge constituted 100% of the flow in the creek at the time.

Lake Sovereign (figures 40 – 43) is located off of Sixes Road on Blankets Creek downstream from the chicken plant. Local stakeholders stated that following the 2000 fish kill (Figure 40) Lake Sovereign was drained for several months due to neighborhood complaints. This caused sediment from the lake bottom to flow downstream in Blankets Creek.



Figure 40. Lake Sovereign after the fish kills in 2000. Each dot in the picture is a dead fish.

The chicken plant became permitted over 20 years ago and is now owned and operated by Pilgrim's Pride. As of July 17, 2005 the plant is connected into the Cherokee County Water and Sewerage Authority's sewer line and will no longer discharge into Blankets Creek. During the field study Lake Sovereign was observed to have small amounts of algae around the dam (Figure 43). Several fish and waterfowl were also observed.



Figure 41. A healthier Lake Sovereign in 2005



Figure 42. Dam structure where Lake Sovereign flows into Blankets Creek

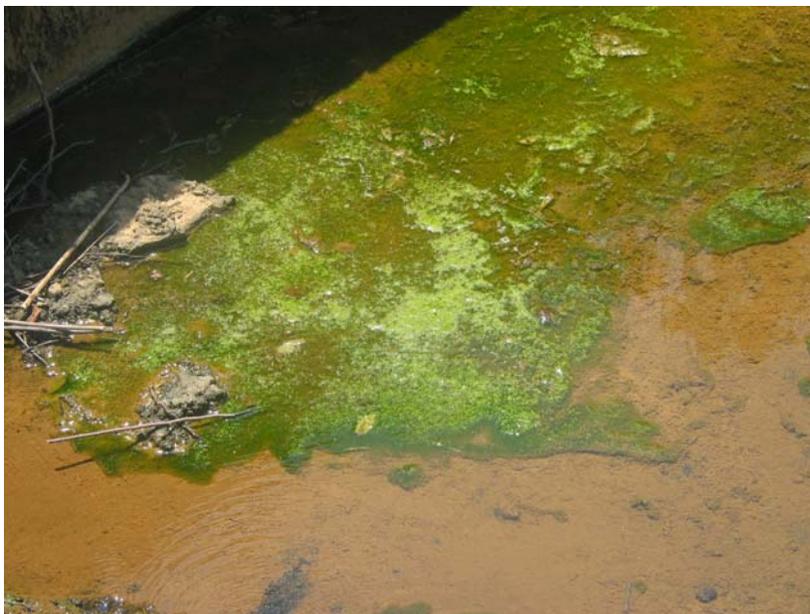


Figure 43. Algae at the Lake Sovereign dam

There are 103 hazardous waste sites located within the Lake Allatoona (Little River Embayment) watershed. In Figure 3 the red crosses symbolize hazardous waste facilities. Examples of types of businesses categorized as hazardous waste facilities include dry cleaners, vehicle maintenance facilities and leather manufacturing facilities. This data was used as a part of the Source Water Assessment Project for Metro Atlanta and the data source is the US EPA's Resource Conservation Recovery Information System (RCRIS). It could not be determined how much effect these hazardous waste sites could have on Chlorophyll *a* levels in the Little River Embayment.

4.0 RANKS ASSIGNED TO POLLUTION SOURCES

The TMDL modeling for this segment used water quality sampling data from 2000, 2001, and 2002. During that time the discharge from the ConAgra chicken plant was documented by GA EPD to be a source of nutrients. A GA DNR fish kill report states that the cause of a fish kill in 2000 was an oxygen depletion problem caused by wastes from the ConAgra chicken plant, and the plant's discharge constituted 100% of the flow in the Blankets Creek at the time. Based on this information ARC Staff believes this was a moderate pollution source affecting the entire segment at the time of sampling (2000, 2001, & 2002). As of July 17, 2005 the chicken plant discharge has been connected to the Cherokee County Water and Sewerage Authority's sewer line and will no longer discharge into Blankets Creek.

Based on field observations, the overall affects of urban runoff is probably contributing the most to the Chlorophyll *a* levels in this TMDL segment. This includes the possible effects of fertilizer from homeowner's lawns and golf courses, as well as the cumulative effect from wildlife, domestic animals and livestock. The magnitude of this source is ranked as moderate and the entire segment is affected. Based on the record

of sewer spills in the watershed, problems associated with sewer spills can also be considered a moderate source affecting the entire segment.

5.0 SUMMARY OF FINDINGS

There are ten permitted point source discharges in the Lake Allatoona (Little River Embayment) watershed. The severity in which these point sources affect Chlorophyll *a* levels in the TMDL segment is undetermined. The field survey identified potential nonpoint sources such as urban runoff, animal waste, and sewer spills. Based on the field survey, urban runoff is the most likely potential source of pollution in and around the stream segment. Proposed management practices to address Chlorophyll *a* will be provided by local governments and will be outlined in the 2006 Lake Allatoona (Little River Embayment) TMDL implementation plan.

6.0 STAKEHOLDER INVOLVEMENT

During field work, the survey team met with Geoff Morton, Cherokee County Engineer; Mike Morrissey, Cherokee County WSA Laboratory Manager; Derek Angel, Cobb County Environmental Compliance Technician and members of the Cobb County Stream Monitoring Staff to discuss Lake Allatoona watershed issues. These stakeholders assisted in identification of potential pollutant sources and assisted the survey team in clarifying the field findings.

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.

Little Noonday Creek

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Little Noonday Creek	Cobb County	3 miles / 4610 acres	Fishing	NS

Cobb County personnel have prepared the following description of the creek: Little Noonday Creek contains diverse and abundant macroinvertebrate and fish communities. Upstream, the Rio Montana site offers extensive riffles, where sensitive fish species have been found. Sand settles out in the areas of slower flow. The substrate of the rest of the creek is predominately sand. Banks are predominately stable on the upper reaches of the stream. Noonday Park was the site of a bank restoration in the summer of 2001. At this site the stream flows through soccer fields with virtually no riparian zone. Substrate is completely sand and there is very little available macroinvertebrate habitat. Still, a fairly diverse group of macroinvertebrates is found at this site.

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 Urban Runoff (UR).	66%

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. In addition to the steps taken by the Atlanta Regional Commission, Cobb County also conducts the following to identify possible sources of pollution.

The Little Noonday Creek TMDL segment has manhole covers and sanitary pipe creek crossings at regular enough intervals to ensure overlapping visual field inspections by Cobb County at any given manhole or crossing point. Each basin is scheduled to be sanitary sewer inspected every 18-24 months by the Cobb County Inflow and Infiltration department. Every quarter, Cobb's Stream Monitoring Program maintains sites along the segment for assessing water quality every quarter, including fecal coliform.

Cobb County has programs in place for investigating potential sources of pollution. These programs are described below.

1. General urban runoff is fecal tested by Cobb County Water System's Stream monitoring program and sampling is done for all pertinent biological and chemical data including fecal coliform for all streams at 93 sites per quarter and by Cobb's NPDES Fecal Coliform Monitoring Program at 8 sites per quarter. The Cobb Board of Health regulates septic tanks and maintains a nuisance ordinance against unwarranted waste. The National Resources Conservation Service maintains incentives for the restoration of fencing to protect stream buffers, thereby enhancing urban runoff water quality.

2. Monitoring for sanitary sewer leaks is by the aforementioned Cobb Water's Stream Monitoring Program, Cobb Water Engineering's Inflow and Infiltration department's stream walks at sewer stream crossings and manholes, and through the aforementioned Fecal Coliform Monitoring Program. Cobb's Water Protection group also maintains a restaurant grease trap program, prohibiting all county restaurants from discharging grease to septic tanks, and requiring all county restaurants to pump their traps quarterly so as to keep sewer line grease at a minimal and less of a factor in blocking lines and causing sanitary sewer overflows. Cobb Water's Engineering also maintains a manhole raising program in low lying areas in order to place sewer caps above the latest FEMA flood plain levels, curtailing overflow contamination. Cobb Water's System maintenance also maintains a foam root control program for sewer lines.

3. Monitoring for illicit connections and illegal dumping is through the efforts of Cobb's Stream Monitoring Program, Cobb's Water Quality Section, and the NPDES Fecal Coliform monitoring, and Cobb County. The Cobb County Illicit Discharge ordinance prohibits illicit/illegal discharges to the storm drainage system with monitoring by all sections of the water system.
4. Animal waste from farm animals, birds, and pets is regulated through restrictive stream buffers enforced by Cobb Community Development and by Cobb Board of Health's nuisance ordinance, as well as addressed through the USDA's NRCS's incentives for maintaining fences and buffers. The USDA also sponsors a program in cooperation with Cobb Stormwater to remove beavers from areas where their dams raise water levels to sanitary sewer cap manholes. Monitoring is accomplished under general fecal monitoring through the aforementioned stream monitoring and NPDES fecal monitoring programs.
5. Land disturbing activities' contribution is addressed through Cobb Community Development's Erosion and Sediment Control restrictions, regulatory BMPs and buffer ordinance as well as the NRCS buffer incentives.

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)	
Urban Runoff		5		3	15
Animal Waste		1		1	1
Land Disturbing		0.5		1	0.5
Septic Systems		UNK		UNK	UNK
Sanitary Sewer Leaks		UNK		UNK	UNK
Illegal dump/Illicit connections		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	
Georgia Soil and Water Conservation Commission	1500 Klondike Road Suite A109	Conyers	GA	30094	770-761-3020	
Bill Higgins/Cobb Water	680 South Cobb Drive	Marietta	Ga	30060	770 419 6435	William.Higgins@cobbcounty.org
Rob Hosack/Cobb Community Development	191 Lawrence Street	Marietta	Ga.	30090	770 528 2125	
Valerie Picard/USDA Natural Resources Conservation Service	678 South Cobb Drive	Marietta	Ga.	30060	770 792 0594	
Tom Cambell/Cobb Board of Health	3830 South Cobb Drive	Smyrna	Ga	30080	770 435 7815	
Sally Bethea/Upper Chattahoochee River Keeper	3 Puritan Mill 916 Joseph Lowery Blvd.	Atlanta	GA	30318	(404)352-9828	
Jennifer McCoy/Cobb County Adopt-A-Stream	662 South Cobb Drive	Marietta	GA	30060	(770)528-1480	Jennifer.McCoy@cobbcounty.org
Metropolitan North Georgia Water Planning District	40 Courtland Street, NE	Atlanta	GA	30303	404-463-3260	
City of Marietta Public Works	205 Lawrence Street	Marietta	GA	30060	770-794-5650	

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 <i>National Water Quality Inventory</i>) 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 TMDLs for these waters.	Federal, State	current	In place, ongoing		
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia Rules and Regulations for Water Quality Control, Chapter	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	Federal, State, Local/County Governments	Current	in place, ongoing		

	391-3-6	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.					
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	Completed	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 implementation of Storm Water Pollution Prevention Plan. May require storm water monitoring program targeting discharges into/near 303(d) listed waters.	State	Active and will be enhanced or expanded	2006		
Stream Monitoring/Dry Weather Screening	Cobb Water System, Cobb Marietta Water Authority	Water quality sampling/illicit discharge detection, dry weather screening, NPDES fecal sites	Cobb	current	1976	5	3
Fecal Coliform Monitoring Program	Cobb Water System	Fecal coliform sampling	Cobb	current	2002	5	3
Pet Waste Management Program	Cobb Water, Cobb Parks and Recreation, Keep Cobb Beautiful	Measures to control pet waste from being washed into creeks at County Park locations	Cobb	proposed	Pending	5	3

Inflow and Infiltration stream walks	Cobb Water System Engineering	Infrastructure inspections and repair	Cobb	current	1988	5	3
County Ordinances	Cobb Community Development	Ordinances to protect stream bank buffers, control erosion, stop illicit discharges	Cobb	current	1977-illicit discharge, 1999-stream buffer, 1990-erosion control	5	3
Nuisance Ordinance	Cobb Board of Health	Required removal of health nuisances, maintenance and installation of septic tanks	Cobb	current	1988	5	3
Clean Water Campaign	Atlanta Regional Commission, Cobb Water System, Environmental Protection Division	Campaign to improve water quality in streams and rivers	ARC, Cobb	current	2001	5	1
Chattahoochee Tunnel Project	Cobb Water System	Relieve sewer system loads in the basin to prevent overloading and spills	Cobb	under construction	1988	5	3
buffer incentives	USDA/NRCS	incentives for fencing and restoring buffers	NRCS	current	1996	5	1
Adopt A Stream	Ga. EPD, Cobb	trains volunteers for bio, physical and chem. monitor	Cobb	current	2001	5	1
manhole raising	Cobb Water Engineering	raises manholes caps above latest floodplain level	Cobb	current	1999	5	3
grease trap maintenance section	Cobb Water Protection	prohibits running grease to septic tanks and requires restaurants to pump traps regularly in order to prevent grease buildup in lines causing overflows	Cobb	current	1988	5	3
foam root control	Cobb Water System Maintenance	chemical dissolving of encroaching roots in sewers	Cobb	current	1997	5	3
beaver control	USDA / Cobb Stormwater	remove beavers from building dams and raising water levels above manholes	Cobb/USDA	current	1998	5	3
streambank stabilization program	Cobb Stormwater Management	reinforces stream banks in order to stabilize sewer infrastructure	Cobb Stormwater Management	current	1995	5	3
CMOM Program	EPD, Cobb Water	CMOM Program -- (Capacity, Management,	Cobb Water	current	2003	5	3

	System (System Maintenance)	Operation, and Maintenance): Program that provides incentives to Cobb County to reduce sanitary sewer spills, maintain infrastructure, prioritize problem areas, and provide a Capital Improvement Plan that ensures funding for sewage system improvements.	System				
Preventative Maintenance	Cobb Water System: System Maintenance	Measures taken to prevent spills such as tracking patterns of spills and lining, cleaning, video analysis, re-routing of sewer lines.	Cobb Water System	current	since inception of sewer infrastructure	5	3
Emergency Response Policy	Cobb Water System: System Maintenance	Employees are on call and respond to sewer spills within one hour of reporting for remediation.	Cobb Water System	current	1960's	5	3
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	5	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	5	3
Phase I MS4 Permit GAS000125	City of Marietta	Ordinances to protect stream bank buffers, control erosion, stop illicit discharges, and maintenance and inspection per our Stormwater Management program	General Funds	Active and ongoing	Amended 2003	0.5	3

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
Urban Runoff	15	Fecal Coliform Monitoring Program (Cobb County) County Ordinances (Cobb County) Nuisance Ordinance (Cobb County) Clean Water Campaign (Cobb County) Adopt A Stream (Cobb County) Chattahoochee Tunnel Project (Cobb County) buffer incentives (Cobb County) manhole raising (Cobb County) grease trap maintenance section (Cobb County) foam root control (Cobb County) beaver control (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	

		streambank stabilization program (Cobb County)		
		Phase I MS4 Permit GAS000125 (City of Marietta)		
		District-Wide Watershed Management Plan		
		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		
Animal Waste	1	Pet Waste Management Program (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		beaver control (Cobb County)		
		buffer incentives (Cobb County)		
Land Disturbing	0.5	District-Wide Watershed Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Streambank stabilization program (Cobb County)		
Septic Systems	UNK	Long-Term Wastewater Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
Sanitary Sewer Leaks	UNK	Inflow and Infiltration stream walks (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Chattahoochee Tunnel Project (Cobb County)		
		foam root control (Cobb County)		
		manhole raising (Cobb County)		
		grease trap maintenance section (Cobb County)		
		CMOM Program (Cobb County)		
		Preventative Maintenance (Cobb County)		
		Emergency Response Policy (Cobb County)		
		streambank stabilization program (Cobb County)		
Long-Term Wastewater Management Plan				
Illegal dump/Illicit connections	UNK	Stream Monitoring/Dry Weather Screening (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		District-Wide Watershed Management Plan		

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
fecals	Cobb Water: Stream Monitoring, Water Quality Section	current	1970's	n/a	comprehensive monitoring of bio and chem. data including fecals, for delist, detection and enforcement
fecals	Cobb Water : Stream Monitoring, Water Quality Section	current	2002	n/a	monitor eight stream sites once a quarter for fecals
fecals/overflow	Cobb Water: Engineering Inflow and Infiltration	current	1980's	n/a	walk streams inspecting sanitary sewer crossings and manholes

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

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Cobb Water Quality Section, Adopt-A-Stream, ARC	Clean Water Campaign(Clean Water ads, literature, workshops)	general public, targeted industries	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
City of Marietta	See Current Stormwater Management Plan	General Public	Ongoing

IX. MILESTONES/ MEASURES OF PROGRESS 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.

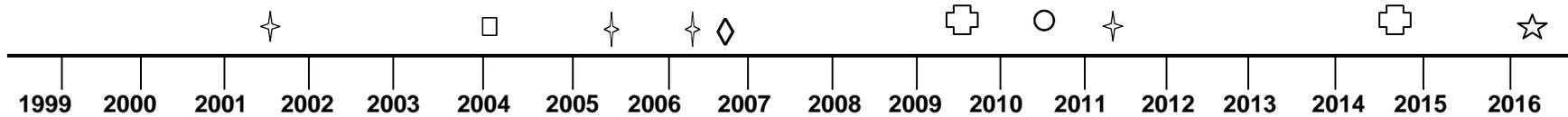
Table 8. MILESTONES

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	
Dry Weather Screening Program	Cobb County Water System: Water Quality Section	2005	2006	implemented into the program for 2006
Stream Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	1976	1976	aforementioned comprehensive bio and chem. monitoring including fecals and walks once a quarter
NPDES Fecal Coliform Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	2002	2002	collect fecal NPDES permit mandated samples at 8 sites
Stream walks at stream sewer crossings and manholes	Cobb Water: Engineering Inflow and Infiltration, Stream Monitoring	1988	1988	walk all segments for overflow at manholes and creek crossings
buffer ordinance	Community Development	1990	1990, 1999	regulates, maintains 50-200 foot buffers
education	ARC, Cobb County	1994	1994	ads and literature concerning water quality, fecals

nuisance ordinance, septic regulate	Cobb Board of Health	1988	1988	regulate and enforce septic tanks, removal of improper waste
Wetland and Buffer Preservation, beaver removal	USDA/Cobb County National Resource Conservation Service, U.S. Army Corp of Engineers, USDA/Stormwater	1996, 1998	1996, 1998	incentives for buffer restoration, fencing off and wetland protection
grease trap program	Cobb Water Protection	1988	1991	every restaurant inspected, prohibit discharge into septic
manhole raising program	Cobb Water Engineering	1999	1999	sewer caps raised above current/latest floodplain
CMOM Program	Cobb Water System: System Maintenance	2003	2003	Comprehensive program that provides incentives and gives the guidelines of how the County's collection system will operate.
Pet Waste Management Program	Cobb AAS, Keep Cobb Beautiful, Parks and Recreation	2003	2004	Control pet waste in parks
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
Phase I MS4 Permit GAS000125	City of Marietta	ongoing		Refer to annual report

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 ☆

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.

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

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 Etowah HCP	PO Box 287	Acworth	GA	30101	678-758-0781	curt@etowahhcp.org
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	408 Broad Street	Rome	GA	30161	706-232-2724	keady@coosa.org

River Basin Initiative						
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		gl@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@acworthcable.net
Roy Taylor / Cherokee Homeowners	360 E. Marietta Street	Canton	GA	30114	770-720-4669	wrldeas@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	Moon Station Road	Kennesaw	GA		404-392-1156	sturner@kennesaw-ga.us

Kennesaw						
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.

Rubes Creek

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Rubes Creek	Headwaters to Little River	7 miles / 9658 acres	Fishing	NS

Cobb County personnel have prepared the following description of the creek: Rubes Creek is located in northeastern Cobb County and flows into Cherokee County before joining the Little River. It is part of the Etowah/Coosa River Watershed. Land use within the Rubes Creek watershed is predominately medium density residential, although there are some dense commercial areas, such as on Shallowford Road. In addition to the five Stream Monitoring sites on Rubes, there is one Storm Water monitoring site on a small southern tributary to Rubes Creek at Jamerson Road.

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 Urban Runoff (UR).	50%

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 also conducted a visual field survey on this stream segment due to limited recent stream walk information on the entire watershed. 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 and a foot survey where access was allowed. The summary of findings for this visual field survey is as follows. There are two permitted point source discharges in the Rubes Creek (Headwaters to Little River) watershed. The field survey identified non-point sources such as wildlife, domestic animals and urban runoff. Based on field observations, wildlife and domestic animal waste (i.e. horses, dogs, etc) is 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 a medium amount of the segment watershed is affected. Based on the urban nature of the land cover in the watershed, urban runoff can be considered to have a high estimated extent of contribution affecting a medium amount of the stream segment watershed. 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. In addition to the steps taken by the Atlanta Regional Commission, Cobb County also conducts the following to identify possible sources of pollution.

The Cobb County portion of the Rubes Creek TMDL segment has manhole covers and sanitary pipe creek crossings at regular enough intervals to ensure overlapping visual field inspections by Cobb County at any given manhole or crossing point. Each basin is scheduled to be sanitary sewer inspected every 18-24 months by the Cobb County Inflow and Infiltration department. Every quarter, Cobb's Stream Monitoring Program maintains sites along the segment for assessing water quality every quarter, including fecal coliform.

Cobb County has programs in place for investigating potential sources of pollution. These programs are described below.

1. General urban runoff is fecal tested by Cobb County Water System's Stream monitoring program and sampling is done for all pertinent biological and chemical data including fecal coliform for all streams at 93 sites per quarter and by Cobb's NPDES Fecal Coliform Monitoring Program at 8 sites per quarter. The Cobb Board of Health regulates septic tanks and maintains a nuisance ordinance against unwarranted waste. The National Resources Conservation Service maintains incentives for the restoration of fencing to protect stream buffers, thereby enhancing urban runoff water quality.

2. Monitoring for sanitary sewer leaks is by the aforementioned Cobb Water's Stream Monitoring Program, Cobb Water Engineering's Inflow and Infiltration department's stream walks at sewer stream crossings and manholes, and through the aforementioned Fecal Coliform Monitoring Program. Cobb's Water Protection group also maintains a restaurant grease trap program, prohibiting all county restaurants from discharging grease to septic tanks, and requiring all county restaurants to pump their traps quarterly so as to keep sewer line grease at a minimal and less of a factor in blocking lines and causing sanitary sewer overflows. Cobb Water's Engineering also maintains a manhole raising program in low lying areas in order to place sewer caps above the latest FEMA flood plain levels, curtailing overflow contamination. Cobb Water's System maintenance also maintains a foam root control program for sewer lines.

3. Monitoring for illicit connections and illegal dumping is through the efforts of Cobb's Stream Monitoring Program, Cobb's Water Quality Section, and the NPDES Fecal Coliform monitoring, and Cobb County. The Cobb County Illicit Discharge ordinance prohibits illicit/illegal discharges to the storm drainage system with monitoring by all sections of the water system.

4. Animal waste from farm animals, birds, and pets is regulated through restrictive stream buffers enforced by Cobb Community Development and by Cobb Board of Health's nuisance ordinance, as well as addressed through the USDA's NRCS's incentives for maintaining fences and buffers. The USDA also sponsors a program in cooperation with Cobb Stormwater to remove beavers from areas where their dams raise water levels to sanitary sewer cap manholes. Monitoring is accomplished under general fecal monitoring through the aforementioned stream monitoring and NPDES fecal monitoring programs.

5. Land disturbing activities' contribution is addressed through Cobb Community Development's Erosion and Sediment Control restrictions, regulatory BMPs and buffer ordinance as well as the NRCS buffer incentives.

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)	
Urban Runoff		5		3	15
Wildlife		3		3	9
Domestic Animal Waste		3		3	9
Sanitary Sewer Leaks		UNK		UNK	UNK
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	
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) 493-6107	jwatkins@cherokeega.com
Cherokee County WSA (David Kubala)	P.O. Box 5000 391 W. Main St.	Canton	GA	30114	(770) 479-1813	dkubala@earthlink.net
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	recycling@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	
Bill Higgins/Cobb Water	680 South Cobb Drive	Marietta	Ga	30060	770 419 6435	William.Higgins@cobbcounty.org
Rob Hosack/Cobb Community Development	191 Lawrence Street	Marietta	Ga.	30090	770 528 2125	
Valerie Picard/USDA Natural Resources Conservation Service	678 South Cobb Drive	Marietta	Ga.	30060	770 792 0594	
Tom Cambell/Cobb Board of Health	3830 South Cobb Drive	Smyrna	Ga	30080	770 435 7815	
Sally Bethea/Upper Chattahoochee River Keeper	3 Puritan Mill 916 Joseph Lowery Blvd.	Atlanta	GA	30318	(404)352-9828	
Jennifer McCoy/Cobb County Adopt-A-Stream	662 South Cobb Drive	Marietta	GA	30060	(770)528-1480	Jennifer.McCoy@cobbcounty.org
City of Woodstock, City Manager (Jim Gleason)	103 Arnold Mill Road	Woodstock	GA	30188	(770) 592-6001	jgleason@ci.woodstock.ga.us
City of Woodstock, Public Works Director (Jarvice Middleton)	103 Arnold Mill Road	Woodstock	GA	30188	(770) 592-6038	jmiddleton@ci.woodstock.ga.us
City of Woodstock, Engineer (Jose Anez)	103 Arnold Mill Road	Woodstock	GA	30188	678-409-4335)	janez@ci.woodstock.ga.us

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 <i>National Water Quality Inventory</i>) 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 TMDLs for these waters.	Federal, State	current	In place, ongoing		
Georgia Water	Georgia Rules	Law prohibiting discharge of excessive pollutants	Federal, State,	Current	in place,		

Quality Control Act (OCGA 12-5-20)	and Regulations for Water Quality Control, Chapter 391-3-6	(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.	Local/County Governments		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	Completed	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 implementation of Storm Water Pollution Prevention Plan. May require storm water monitoring program targeting discharges into/near 303(d) listed waters.	State	Active and will be enhanced or expanded	2006		
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	1	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	General Fund	In progress, planned	December 2004	1	1

		database will be integrated into GIS and outfalls located near industries identified in this database will be prioritized for dry weather screening monitoring locations.					
Dry Weather Screening	Cherokee County	The dry weather screening program will consist of inspecting outfalls and sampling any dry weather flow to 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.	General Fund	In progress ,planned	July 2005	1	3
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	1	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	1	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	1	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	December 2004	1	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	December 2005	1	1
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	General Fund	In progress ,planned	December 2006	1	3

		in New Development and Redevelopment BMPs.					
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	1	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	1	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	1	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	1	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	1	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	1	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	1	1
Roadside Litter	Cherokee County	The County administers a program to utilize community	General Fund	In	June	1	1

Pickup		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.		progress , planned	2004		
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	1	Effectiveness will vary
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	5	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	5	3
Stream Monitoring/Dry Weather Screening	Cobb Water System, Cobb Marietta Water Authority	Water quality sampling/illicit discharge detection, dry weather screening, NPDES fecal sites	Cobb	current	1976	5	3
Fecal Coliform Monitoring Program	Cobb Water System	Fecal coliform sampling	Cobb	current	2002	5	3
Pet Waste Management Program	Cobb Water, Cobb Parks and Recreation, Keep Cobb Beautiful	Measures to control pet waste from being washed into creeks at County Park locations	Cobb	proposed	Pending	5	3
Inflow and Infiltration stream walks	Cobb Water System Engineering	Infrastructure inspections and repair	Cobb	current	1988	5	3
County Ordinances	Cobb Community Development	Ordinances to protect stream bank buffers, control erosion, stop illicit discharges	Cobb	current	1977-illicit discharge, 1999-stream buffer,	5	3

					1990- erosion control		
Nuisance Ordinance	Cobb Board of Health	Required removal of health nuisances, maintenance and installation of septic tanks	Cobb	current	1988	5	3
Clean Water Campaign	Atlanta Regional Commission, Cobb Water System, Environmental Protection Division	Campaign to improve water quality in streams and rivers	ARC, Cobb	current	2001	5	1
Chattahoochee Tunnel Project	Cobb Water System	Relieve sewer system loads in the basin to prevent overloading and spills	Cobb	under construction	1988	5	3
buffer incentives	USDA/NRCS	incentives for fencing and restoring buffers	NRCS	current	1996	5	1
Adopt A Stream	Ga. EPD, Cobb	trains volunteers for bio, physical and chem. monitor	Cobb	current	2001	5	1
manhole raising	Cobb Water Engineering	raises manholes caps above latest floodplain level	Cobb	current	1999	5	3
grease trap maintenance section	Cobb Water Protection	prohibits running grease to septic tanks and requires restaurants to pump traps regularly in order to prevent grease buildup in lines causing overflows	Cobb	current	1988	5	3
foam root control	Cobb Water System Maintenance	chemical dissolving of encroaching roots in sewers	Cobb	current	1997	5	3
beaver control	USDA / Cobb Stormwater	remove beavers from building dams and raising water levels above manholes	Cobb/USDA	current	1998	5	3
streambank stabilization program	Cobb Stormwater Management	reinforces stream banks in order to stabilize sewer infrastructure	Cobb Stormwater Management	current	1995	5	3
CMOM Program	EPD, Cobb Water System (System Maintenance)	CMOM Program -- (Capacity, Management, Operation, and Maintenance): Program that provides incentives to Cobb County to reduce sanitary sewer spills, maintain infrastructure, prioritize problem areas, and provide a Capital Improvement Plan that ensures funding for sewage system improvements.	Cobb Water System	current	2003	5	3
Preventative Maintenance	Cobb Water System: System Maintenance	Measures taken to prevent spills such as tracking patterns of spills and lining, cleaning, video analysis, re-routing of sewer lines.	Cobb Water System	current	since inception of sewer infrastruc	5	3

					ture		
Emergency Response Policy	Cobb Water System: System Maintenance	Employees are on call and respond to sewer spills within one hour of reporting for remediation.	Cobb Water System	current	1960's	5	3
Phase II MS4 NPDES Permit	City of Woodstock	This program requires the implementation of six minimum control measures designed to maintain or improve water quality. The permit is applicable to the "urbanized", portions of the City; however, many of the management practices should have beneficial impacts throughout the City.	General Fund	Enforced	2004	1	3
Storm Sewer Map	City of Woodstock	Create a storm sewer map including location of all outfalls and receiving streams as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2006	1	3
Ordinance	City of Woodstock	Create an ordinance prohibiting non-stormwater discharges into storm sewer system and appropriate enforcement procedures as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2004	1	3
Inspection	City of Woodstock	Conduct dry weather inspections of storm sewer outfalls as part of the Illicit Discharge Detection and Elimination BMPs.	General Fund	In progress, planned	December 2006	1	3
E&S Ordinance	City of Woodstock	Review and modify current erosion and sedimentation control ordinance to ensure and enforce proper erosion and sediment controls are used at construction sites (includes requirements for pollution control related construction activities) as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2004	1	3
Training	City of Woodstock	Develop training and certification programs for builders and developers covering proper selection, installation, and maintenance of erosion control devices and erosion and sediment control ordinance regulations as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2006	1	3
Citizen Complaints	City of Woodstock	Create procedures for receiving and responding to complaints from citizens including phone numbers to contact city personnel and complaint forms as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2006	1	3
LDA Permit Requirements	City of Woodstock	Establish preconstruction meetings prior to issuance of land disturbing activity (LDA) permits for construction projects to ensure developer understands erosion and sedimentation requirements as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress, planned	December 2005	1	3

E&S Checklist	City of Woodstock	Develop an erosion and sediment control checklist for city personnel involved with inspection of erosion and sediment control BMPs as part of the Construction Site Stormwater Runoff Control BMPs.	General Fund	In progress,planned	December 2006	1	3
GA Stormwater Manual	City of Woodstock	Adopt the Georgia Stormwater Management Manual as the City's stormwater design manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress,planned	December 2005	1	3
Site Concept Meeting	City of Woodstock	Require a site concept meeting with owner/developer and engineer at the preliminary/planning stage. Encourage and assist better site design by incorporating non-structural controls as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress,planned	December 2005	1	3
Inspections	City of Woodstock	Develop maintenance and inspection procedures for structural BMPs for existing and new development as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.	General Fund	In progress,planned	December 2006	1	3
Training	City of Woodstock	Develop and implement training program for city personnel covering potential water quality impacts from municipal facilities and good housekeeping practices as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress,planned	December 2006	1	3
Inventory	City of Woodstock	Conduct an inventory of all current and potential municipal operations including facilities and activities performed as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress,planned	December 2006	1	3
Pollution Prevention Guidance	City of Woodstock	Provide pollution prevention guidance for each municipal activity identified in the inventory as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress,planned	December 2006	1	3
Street Sweeping	City of Woodstock	Implement a street sweeping program as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress,planned	December 2005	1	3
Water Quality BMPs	City of Woodstock	Incorporate water quality BMPs into new flood control projects where possible such as using wetland ponds instead of dry ponds for flood control as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.	General Fund	In progress,planned	December 2006	1	3

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
Urban Runoff	15	Dry Weather Screening (Cherokee County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		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)		
	Phase II MS4 NPDES Permit (Cherokee County)		
	Fecal Coliform Monitoring Program (Cobb County)		
	County Ordinances (Cobb County)		
	Nuisance Ordinance (Cobb County)		
	Clean Water Campaign (Cobb County)		
	Adopt A Stream (Cobb County)		
	Chattahoochee Tunnel Project (Cobb County)		
	buffer incentives (Cobb County)		
	manhole raising (Cobb County)		
	grease trap maintenance section (Cobb County)		
	foam root control (Cobb County)		
	beaver control (Cobb County)		
	streambank stabilization program (Cobb County)		
	Phase II MS4 NPDES Permit (City of Woodstock)		
	Storm Sewer Map (City of Woodstock)		
	Ordinance (City of Woodstock)		
	Inspection (City of Woodstock)		
	Pollution Prevention Guidance (City of Woodstock)		
	Street Sweeping (City of Woodstock)		
	Water Quality BMPs (City of Woodstock)		
	GA Stormwater Manual (City of Woodstock)		
	Site Concept Meeting (City of Woodstock)		
	Inspections (City of Woodstock)		
	Training (City of Woodstock)		
	Inventory (City of Woodstock)		
	E&S Ordinance (City of Woodstock)		
	LDA Permit Requirements (City of Woodstock)		
	E&S Checklist (City of Woodstock)		
	Training (City of Woodstock)		
	Citizen Complaints (City of Woodstock)		
	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		

Wildlife	9	beaver control (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
Domestic Animal Waste	9	buffer incentives (Cobb County)	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Pet Waste Management Program (Cobb County)		
Sanitary Sewer Leaks	UNK	Long-Term Wastewater Management Plan	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Inflow and Infiltration stream walks (Cobb County)		
		Chattahoochee Tunnel Project (Cobb County)		
		foam root control (Cobb County)		
		manhole raising (Cobb County)		
		grease trap maintenance section (Cobb County)		
		CMOM Program (Cobb County)		
		Preventative Maintenance (Cobb County)		
		Emergency Response Policy (Cobb County)		
		streambank stabilization program (Cobb County)		
Septic Systems	UNK	IAW O.C.G.A. 290-5-26	It is anticipated that the management measures listed in Table 5A will achieve the load reduction for this segment.	
		Long-Term Wastewater Management Plan		

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
fecals	Cobb Water: Stream Monitoring, Water Quality Section	current	1970's	n/a	comprehensive monitoring of bio and chem. data including fecals, for delist, detection and enforcement
fecals	Cobb Water : Stream Monitoring, Water Quality Section	current	2002	n/a	monitor eight stream sites once a quarter for fecals
fecals/overflow	Cobb Water: Engineering Inflow and Infiltration	current	1980's	n/a	walk streams inspecting sanitary sewer crossings and manholes

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

RESPONSIBILITY	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.cherokeeqa.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
Cobb Water Quality Section, Adopt-A-Stream, ARC	Clean Water Campaign(Clean Water ads, literature, workshops)	general public, targeted industries	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
City of Woodstock	Distribute pamphlets at businesses, schools, etc. on stormwater issues including hazards associated with illegal discharges and proper waste disposal as part of the Public Education and Outreach BMPs.	General Public	December 2003
City of Woodstock	Place articles/ advertisements in local newspaper updating the public on the Stormwater Management Program and stormwater issues as part of the Public Education and Outreach BMPs.	General Public	January 2004
City of Woodstock	Disseminate stormwater information and update public on stormwater program utilizing the City's website as part of the Public Education and Outreach BMPs.	General Public	December 2004
City of Woodstock	Develop storm drain stenciling program involving volunteers such as Boy Scouts, students church groups, etc as part of the Public Involvement/ Participation BMPs.	General Public	December 2003
City of Woodstock	Organize stakeholder/ citizen advisory group to provide input and decision making on stormwater issues and implementation of stormwater program as part of the Public Involvement/ Participation BMPs.	General Public	December 2003
City of Woodstock	Organize community and neighborhood streamside cleanup activities as part of the Public Involvement/ Participation BMPs.	General Public	December 2004

IX. MILESTONES/ MEASURES OF PROGRESS 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	
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,	June 2004	Refer to MS4 Annual Report

		planned		
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 progress, planned	June 2005	Refer to MS4 Annual Report
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.
Dry Weather Screening Program	Cobb County Water System: Water Quality Section	2005	2006	implemented into the program for 2006
Stream Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	1976	1976	aforementioned comprehensive bio and chem. monitoring including fecals and walks once a quarter

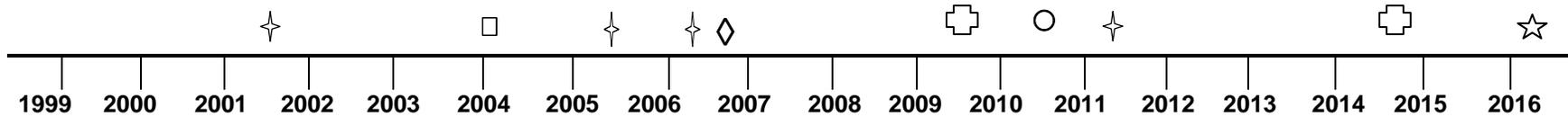
NPDES Fecal Coliform Monitoring Program	Cobb Water System: Stream Monitoring, Water Quality Section	2002	2002	collect fecal NPDES permit mandated samples at 8 sites
Stream walks at stream sewer crossings and manholes	Cobb Water: Engineering Inflow and Infiltration, Stream Monitoring	1988	1988	walk all segments for overflow at manholes and creek crossings
buffer ordinance	Community Development	1990	1990, 1999	regulates, maintains 50-200 feet buffers
education	ARC, Cobb County	1994	1994	ads and literature concerning water quality, fecals
nuisance ordinance, septic regulate	Cobb Board of Health	1988	1988	regulate and enforce septic tanks, removal of improper waste
Wetland and Buffer Preservation, beaver removal	USDA/Cobb County National Resource Conservation Service, U.S. Army Corp of Engineers, USDA/Stormwater	1996, 1998	1996, 1998	incentives for buffer restoration, fencing off and wetland protection
grease trap program	Cobb Water Protection	1988	1991	every restaurant inspected, prohibit discharge into septic
manhole raising program	Cobb Water Engineering	1999	1999	sewer caps raised above current/latest floodplain
CMOM Program	Cobb Water System: System Maintenance	2003	2003	Comprehensive program that provides incentives and gives the guidelines of how the County's collection system will operate.
Pet Waste Management Program	Cobb AAS, Keep Cobb Beautiful, Parks and Recreation	2003	2004	Control pet waste in parks
Phase II MS4 NPDES Permit	City of Woodstock	Enforced	2004	Refer to annual report
Storm Sewer Map	City of Woodstock	In progress, planned	December 2006	Create a storm sewer map including location of all outfalls and receiving streams as part of the Illicit Discharge Detection and Elimination BMPs.
Ordinance	City of Woodstock	In progress, planned	December 2004	Create an ordinance prohibiting non-stormwater discharges into storm sewer system and appropriate enforcement procedures as part of the Illicit Discharge Detection and Elimination BMPs.
Inspection	City of Woodstock	In progress, planned	December 2006	Conduct dry weather inspections of storm sewer outfalls as part of the Illicit Discharge Detection and Elimination BMPs.
E&S Ordinance	City of Woodstock	In progress, planned	December 2004	Review and modify current erosion and sedimentation control ordinance to ensure and enforce proper erosion and sediment controls are used at construction sites (includes requirements for pollution control related construction activities) as part of the Construction Site Stormwater Runoff Control BMPs.
Training	City of Woodstock	In progress, planned	December 2005	Develop training and certification programs for builders and developers covering proper selection, installation, and maintenance of erosion control devices and erosion

				and sediment control ordinance regulations as part of the Construction Site Stormwater Runoff Control BMPs.
Citizen Complaints	City of Woodstock	In progress, planned	December 2005	Create procedures for receiving and responding to complaints from citizens including phone numbers to contact city personnel and complaint forms as part of the Construction Site Stormwater Runoff Control BMPs.
LDA Permit Requirements	City of Woodstock	In progress, planned	December 2005	Establish preconstruction meetings prior to issuance of land disturbing activity (LDA) permits for construction projects to ensure developer understands erosion and sedimentation requirements as part of the Construction Site Stormwater Runoff Control BMPs.
E&S Checklist	City of Woodstock	In progress, planned	December 2004	Develop an erosion and sediment control checklist for city personnel involved with inspection of erosion and sediment control BMPs as part of the Construction Site Stormwater Runoff Control BMPs.
GA Stormwater Manual	City of Woodstock	In progress, planned	December 2006	Adopt the Georgia Stormwater Management Manual as the City's stormwater design manual as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Site Concept Meeting	City of Woodstock	In progress, planned	December 2005	Require a site concept meeting with owner/developer and engineer at the preliminary/planning stage. Encourage and assist better site design by incorporating non-structural controls as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Inspections	City of Woodstock	In progress, planned	December 2005	Develop maintenance and inspection procedures for structural BMPs for existing and new development as part of the Post-Construction Stormwater Management in New Development and Redevelopment BMPs.
Training	City of Woodstock	In progress, planned	December 2006	Develop and implement training program for city personnel covering potential water quality impacts from municipal facilities and good housekeeping practices as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Inventory	City of Woodstock	In progress, planned	December 2005	Conduct an inventory of all current and potential municipal operations including facilities and activities performed as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Pollution Prevention Guidance	City of Woodstock	In progress, planned	December 2006	Provide pollution prevention guidance for each municipal activity identified in the inventory as part of the Pollution Prevention/ Good House Keeping for Municipal

				Operations BMPs.
Street Sweeping	City of Woodstock	In progress, planned	December 2005	Implement a street sweeping program as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
Water Quality BMPs	City of Woodstock	In progress, planned	December 2006	Incorporate water quality BMPs into new flood control projects where possible such as using wetland ponds instead of dry ponds for flood control as part of the Pollution Prevention/ Good House Keeping for Municipal Operations BMPs.
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 ☆

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.

Prepared By:	<u> Matt Harper </u>		
Agency:	<u> Atlanta Regional Commission </u>		
Address:	<u> 40 Courtland Street, NE </u>		
City:	<u> Atlanta </u>	ST: <u> GA </u>	ZIP: <u> 30303 </u>
E-mail:	<u> Mharper@atlantaregional.com </u>		
Date Submitted to EPD:	<u> March 31, 2006 </u>		Revision:#1

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 Etowah HCP	PO Box 287	Acworth	GA	30101	678-758-0781	curt@etowahhcp.org
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	408 Broad Street	Rome	GA	30161	706-232-2724	keady@coosa.org

River Basin Initiative						
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		gl@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@acworthcable.net
Roy Taylor / Cherokee Homeowners	360 E. Marietta Street	Canton	GA	30114	770-720-4669	wrldeas@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	Moon Station Road	Kennesaw	GA		404-392-1156	sturner@kennesaw-ga.us

Kennesaw						
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

**Rubes Creek TMDL Segment
(Headwaters to Little River)**

In the

Coosa River Basin

March 1, 2006

(This page intentionally left blank.)

Visual Field Survey
For
Rubes Creek TMDL Segment
(Headwaters to Little 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.

Table of Contents

1.0	INTRODUCTION.....	3
1.1	Location.....	3
1.2	Watershed Description.....	3
2.0	METHODOLOGY.....	8
3.0	FIELD FINDINGS.....	8
3.1	General Characteristics.....	8
3.2	Point Sources.....	15
3.3	Non-Point Sources.....	15
3.4	Other Potential Individual Sources of Pollution.....	19
4.0	RANKS ASSIGNED TO POLLUTION SOURCES.....	19
5.0	SUMMARY OF FINDINGS.....	19
6.0	STAKEHOLDER INVOLVEMENT.....	19

List of Tables

Table 1.	Watershed Land Cover.....	3
Table 2.	TMDL Watershed Land Cover Matrix (Aggregated ARC Land Cover Categories).....	4

List of Figures

Figure 1.	Location of Rubes Creek Watershed.....	5
Figure 2A.	ARC 2001 Land Cover for Rubes Creek Watershed.....	6
Figure 2B.	ARC 2003 Land Cover for Rubes Creek Watershed.....	7
Figure 3.	Rubes Creek Watershed Potential Individual Sources of Pollution Identified in ARC's 2001 Source Water Assessment Project.....	9
Figure 4.	Location of Images Taken During Visual Field Survey.....	10
Figure 5.	West of Candlewood Road the stream bed is sandy (looking upstream)...	11
Figure 6.	The stream bed is rocky south of Blackwell Road (looking upstream).....	11
Figure 7.	Creek passes through large pond behind a subdivision south of Highway 92, also known as Alabama Road (looking upstream).....	12
Figure 8.	Rubes Creek north of Highway 92 (looking downstream).....	12
Figure 9.	Erosion and erosion stabilized with rip rap south of Blackwell Road (looking downstream).....	13
Figure 10.	Erosion control measures at the bottom of the slope in front of the creek near its confluence with Little River.....	13
Figure 11.	Debris blockage is causing pooling west of Candlewood Road (looking downstream).....	14
Figure 12.	The pipe crossing the stream north of Blackwell Road does not seem to be leaking (looking downstream).....	14
Figure 13.	Runoff from the back of the car wash leads to the creek (looking towards the car wash).....	16
Figure 14.	Soapy film and iron deposits in the runoff leading from the car wash to the creek north of Highway 92.....	16
Figure 15.	Ducks were present at the pond between Rubes Creek and Cater Valley Road.....	17
Figure 16.	Raccoon tracks north of Blackwell Road.....	17
Figure 17.	Horse crossing in stream on a property south of Blackwell Road.....	18
Figure 18.	Property on Haney Road adjacent to the stream has 15 horses.....	18

1.0 INTRODUCTION

1.1 Location

The Rubes Creek TMDL stream segment is located in the northern portion of the Atlanta Metropolitan region in Cobb and Cherokee Counties. The stream segment is listed for not meeting the State water quality standards for fecal coliform. The listed portion of the stream is 7 miles long. As shown in Figure 1, the TMDL segment begins in northern Cobb County and flows north into Cherokee County eventually flowing into the Little River.

1.2 Watershed Description

The Rubes Creek TMDL segment watershed is comprised of 9,658 acres of land. The Rubes Creek watershed is located within HUC 10 – 0315010408. Mapping of the watershed shows that land cover within the watershed is predominantly medium density residential, which accounts for 56% of the watershed's area in 2003. ARC land cover data from 2001 and 2003 are presented in Table 1. Table 2 outlines the format of ARC's land cover codes that have been aggregated into the categories used for this project.

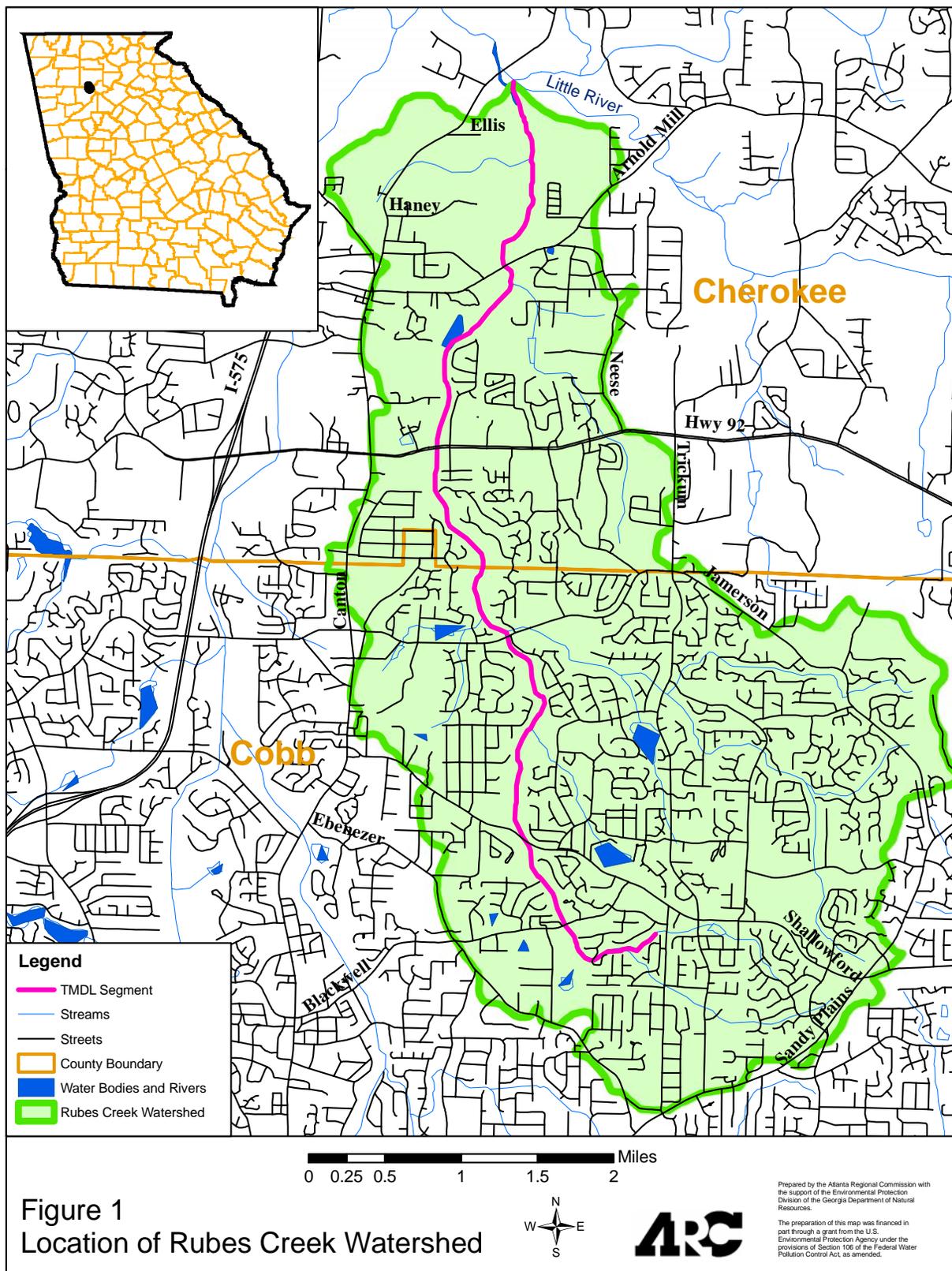
Based on ARC's 2001 and 2003 land cover, the most notable changes in the watershed were a loss in transitional lands and forest/open space and a gain in commercial and medium and high density residential. The main area that shifted from transitional to medium density residential between 2001 and 2003 is north of Hwy 92 on the west side of the watershed. Transitional land in 2001 became high density residential just south of Arnold Mill Road on the west side of the watershed and north of the Cobb-Cherokee border on the east side of the watershed. Also just north of the border an area of low density residential became high density residential. Several areas shifted from transitional to commercial including around Hwy 92 and south of Jamerson Road. A portion of the transitional area south of Jamerson was converted into forest. In the north section of the watershed two areas were shifted from forest to transitional between 2001 and 2003. Maps showing land cover in 2001 and 2003 in the watershed are included as Figure 2A and 2B.

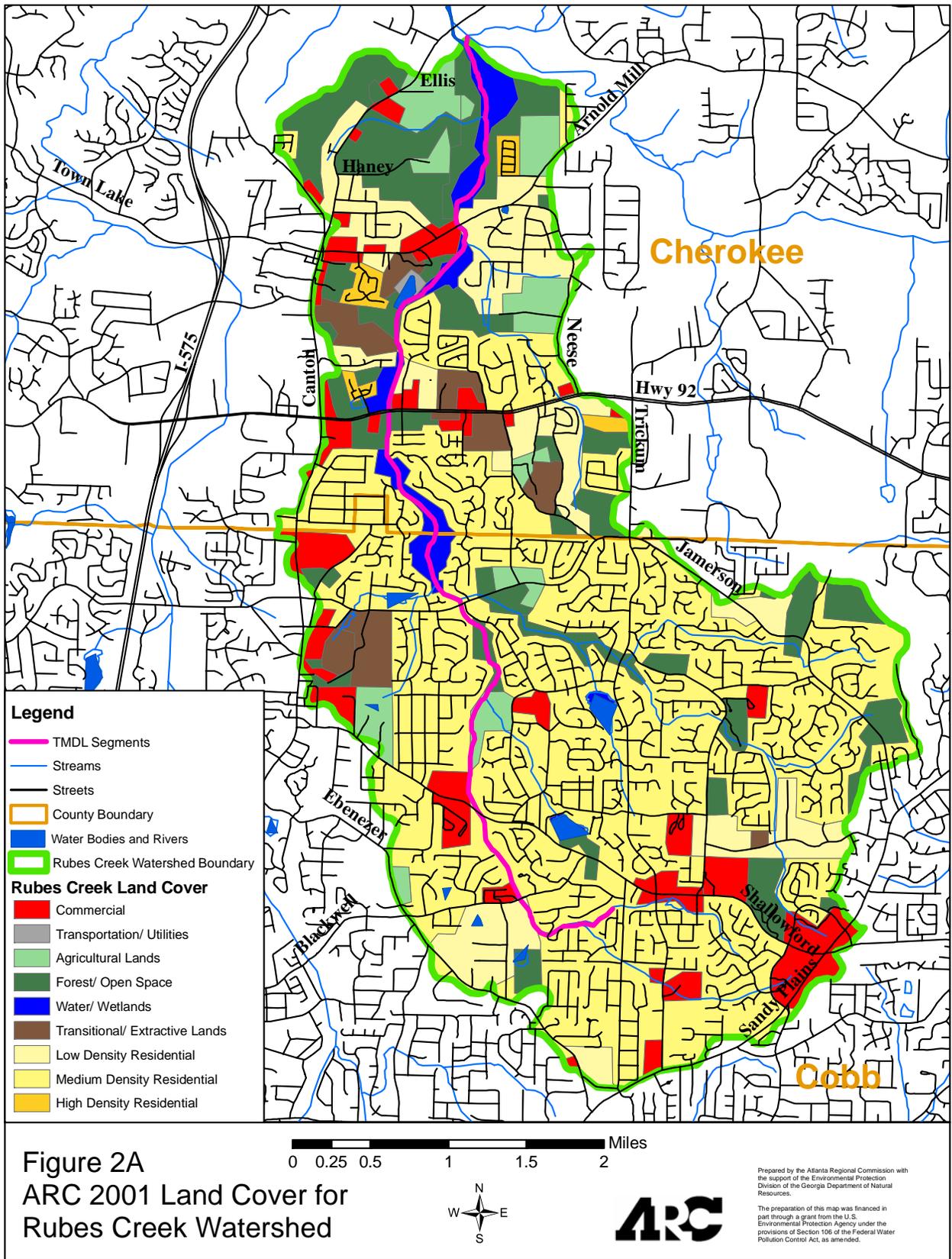
Table 1. Watershed Land Cover (Source: ARC 2001 AND 2003 LandPro Data)

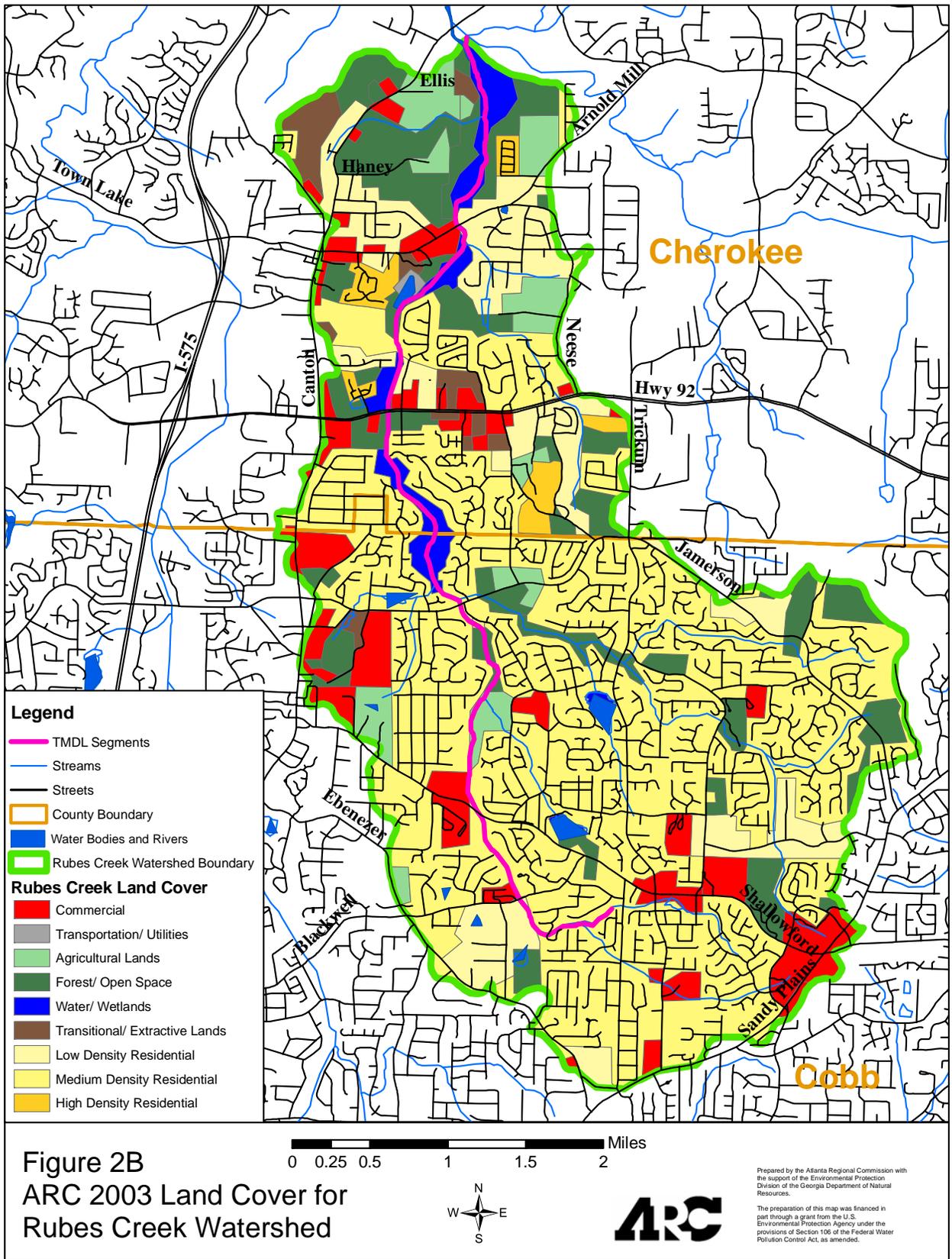
Land Cover Classification	Land Cover 2001		Land Cover 2003		Land Cover Difference	
	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area	Area (Acres)	% of Total Area
Agricultural Lands	428.57	4.44%	428.57	4.44%	0.00	0.00%
Commercial	776.16	8.04%	871.30	9.02%	95.15	0.99%
Forest/ Open Space	1,294.16	13.40%	1,203.84	12.46%	-90.32	-0.94%
High Density Residential	97.13	1.01%	172.75	1.79%	75.62	0.78%
Low Density Residential	1,106.35	11.45%	1,093.01	11.32%	-13.34	-0.14%
Medium Density Residential	5,332.55	55.21%	5,409.07	56.00%	76.52	0.79%
Transitional/ Extractive Lands	332.80	3.45%	189.21	1.96%	-143.58	-1.49%
Transportation/ Utilities	15.71	0.16%	15.71	0.16%	0.00	0.00%
Water/ Wetlands	274.80	2.85%	274.81	2.85%	0.00	0.00%
Total Acres	9,658	100.00%	9,658	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>	Quarries, Gravel Pits, and Strip Mines	75
	Bare Exposed Rocks	74
	Other Urban	17
	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







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 Rubes 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 20 – 21, 2005. The initial step was a windshield survey of the watershed. The land cover in the area was verified in addition to careful observations of the current conditions.

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. 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 survey performed throughout the designated segment. The land cover in the area was verified in addition to careful observations of the current conditions in the stream and its surroundings.

The Rubes Creek TMDL stream segment is consistently bordered by a vegetative buffer that is wooded with abundant areas of thick brush. The stream bed is mainly sandy except for a segment south of Blackwell Road that gradually shifts from sandy to rocky and then back to sandy. General photographs of the stream condition are shown in Figures 5-8.

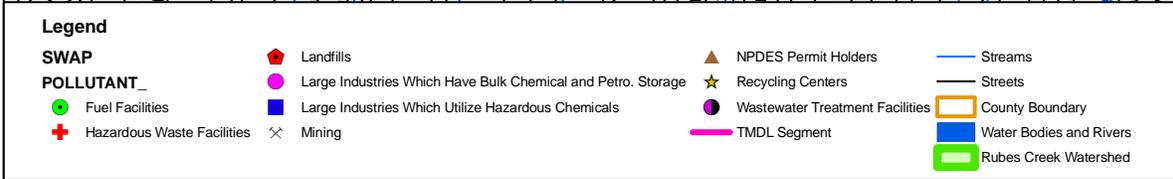
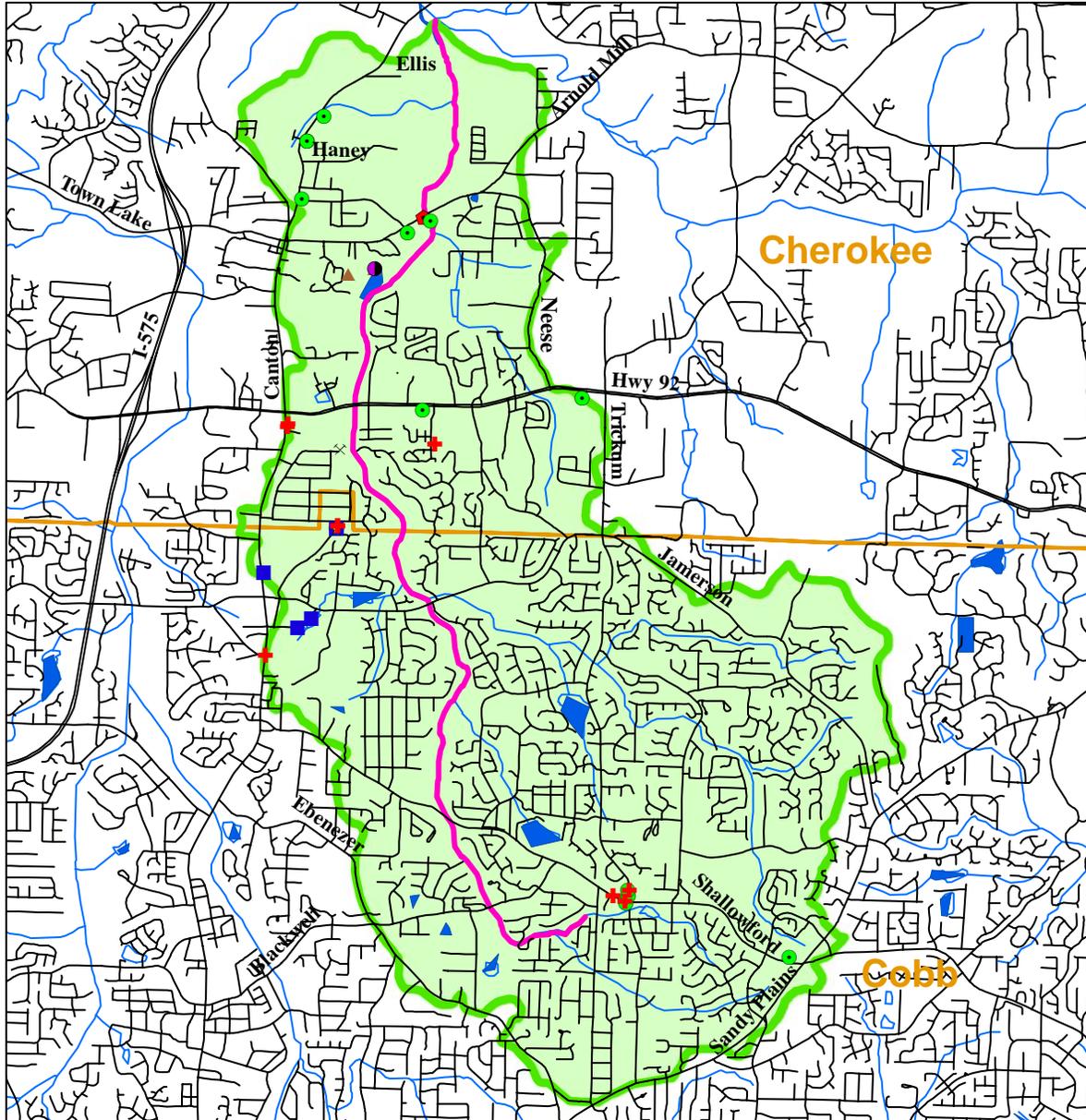


Figure 3
Rubes Creek Watershed
Potential Individual Sources of Pollution
Identified in ARC's 2001 Source Water
Assessment Project

0 0.25 0.5 1 1.5 2 Miles

W N E S

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.

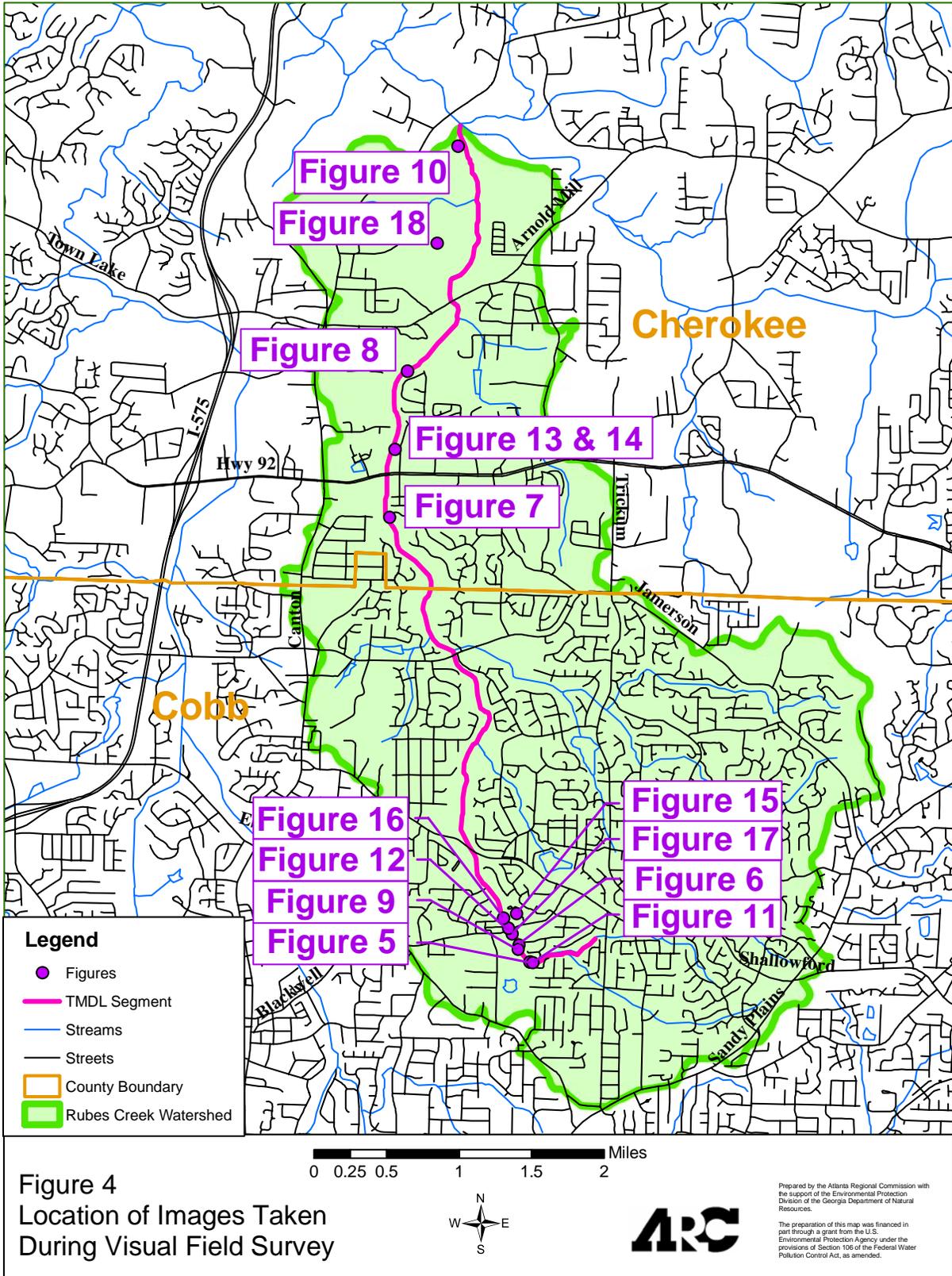




Figure 5. West of Candlewood Road the stream bed is sandy (looking upstream).

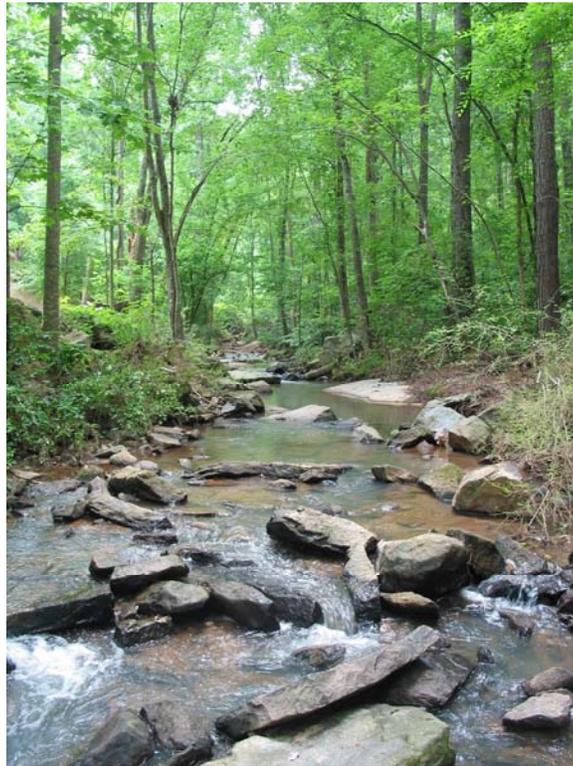


Figure 6. The stream bed is rocky south of Blackwell Road (looking upstream).



Figure 7. Creek passes through large pond behind a subdivision south of Highway 92, also known as Alabama Road. (looking upstream).



Figure 8. Rubes Creek north of Highway 92 (looking downstream)

There are several areas of erosion throughout the stream channel. Only one area observed with significant old erosion had been stabilized with rip rap (Figure 9). Construction at a new park and recreation center was observed adjacent to the stream segment. Measures have been taken to prevent erosion and sediment in the stream channel (Figure 10).



Figure 9. Erosion and erosion stabilized with rip rap south of Blackwell Road (looking downstream).



Figure 10. Erosion control measures (silt fences) at the bottom of the slope in front of the creek near its confluence with Little River.

During the field work, the following observations were made along the stream segment: six road crossings, one instance of debris blockage causing pooling (Figure 11), one pipe crossing the stream (Figure 12) and two ponds that drain into the stream.



Figure 11. Debris blockage is causing pooling west of Candlewood Road (looking downstream).



Figure 12. The pipe crossing the stream north of Blackwell Road does not seem to be leaking (looking downstream).

The stream bed and banks are very lightly littered with small pieces of trash such as cans and bottles. The water appeared turbid and unclear throughout the stream segment, most likely due to early morning rain showers. Potential sources affecting overall health of Rubes Creek are discussed in the Point Source and Non-point Source sections.

3.2 Point Sources

There are two facilities permitted to discharge in the Rubes Creek TMDL segment, which are the Woodstock-Rubes Creek WCPC and the Woodstock - Rubes Creek Tributary Water Pollution Control Plant. Sewer spill data was obtained from GAEPD for 2002 - 2005. During this time the Rubes Creek watershed had 15 sewer spills totaling 23,100 gallons.

3.3 Non-point Sources

The visual field survey revealed potential non-point sources of pollutants that may affect Rubes Creek. Cobb County's sewer line map was reviewed and while the majority of the watershed in Cobb County is sewered, there appears to be small pockets of homes still served by septic systems. 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 Woodstock, which appears to be mostly sewered.

A soapy film was observed in runoff from a car wash adjacent to the stream north of Highway 92. Runoff from the car wash drains into the stream at the front and rear of the parking lot (Figure 13). The soapy sheen is also very apparent in the creek downstream from the car wash (Figure 14).



Figure 13. Runoff from the back of the car wash leads to the creek (looking towards the car wash).



Figure 14. Soapy film and iron deposits in the runoff leading from the car wash to the creek north of Highway 92.

Wildlife was observed frequently in the streambed as well as in areas adjacent to the stream. Ducks were observed in a pond adjacent to the stream bank (Figure 15). Raccoon prints were observed throughout the stream segment (Figure 16). Domestic animal prints, such as cat and dog prints, were also frequently observed.



Figure 15. Ducks were present at the pond between Rubes Creek and Cater Valley Road. This is also one of the ponds that drain into the creek.



Figure 16. Raccoon tracks north of Blackwell Road

Six horse farms are located within the watershed. Three of the horse farms are located adjacent to the creek. The Blackwell Road property has two horses (Figure 17), the Haney Road property has 15 (Figure 18) and Circle K Ranch on Ellis Road houses 35 horses.



Figure 17. Horse crossing in stream on a property south of Blackwell Road



Figure 18. Property on Haney Road adjacent to the stream has 15 horses.

3.4 Other Potential Individual Sources of Pollution

Data observed from the 2001 ARC Source Water Assessment Project show potential individual sources of pollution in the Rubes Creek watershed (Figure 4). There is one landfill adjacent to the creek north of Arnold Mill Road. There are eight hazardous waste facilities located within the watershed. Examples of the types of businesses categorized as hazardous waste facilities include dry cleaners, vehicle maintenance facilities 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 the hazardous waste facilities shows little or no potential influence on fecal coliform levels in the TMDL stream segment.

4.0 RANKS ASSIGNED TO POLLUTION SOURCES

Based on field observations, wildlife and domestic animal waste (i.e. horses, dogs, etc) is probably contributing the most to the fecal coliform levels in this TMDL segment. The magnitude of this source is ranked as moderate. Based on the urban nature of the land cover in the watershed, urban runoff can be considered a moderate source affecting the entire stream segment.

5.0 SUMMARY OF FINDINGS

There are two permitted point source discharges in the Rubes Creek watershed. The field survey identified non-point sources such as wildlife, domestic animals and urban runoff. Proposed management practices to address fecal coliform levels will be provided by local governments and will be outlined in the 2006 Rubes Creek (Headwaters to Little River) TMDL implementation plan.

6.0 STAKEHOLDER INVOLVEMENT

Geoff Morton, Cherokee County Engineer; Jose Anez, City of Woodstock Engineer; Derek Angel, Cobb County Environmental Compliance Technician and members of the Cobb County Stream Monitoring Staff accompanied ARC staff during this field study. These stakeholders assisted in identification of potential pollutant sources and assisted the survey team in clarifying the field findings.

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.

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 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