

STATE OF GEORGIA

TIER 2 TMDL Implementation Plan (Revision # 01)

Segment Name: Chattooga River Date:9/30/2009

River Basin: Coosa River Basin

Local Watershed Governments:

- Chattooga County, City of Summerville, City of Trion
- Town of Lyerly
- Cherokee County (Alabama)

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 non-point pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (Best Management Practices, or BMPs) to reduce non-point sources of pollutants, milestone schedules to show development of the BMPs (*measurable milestones*), and a monitoring plan to determine BMP effectiveness.

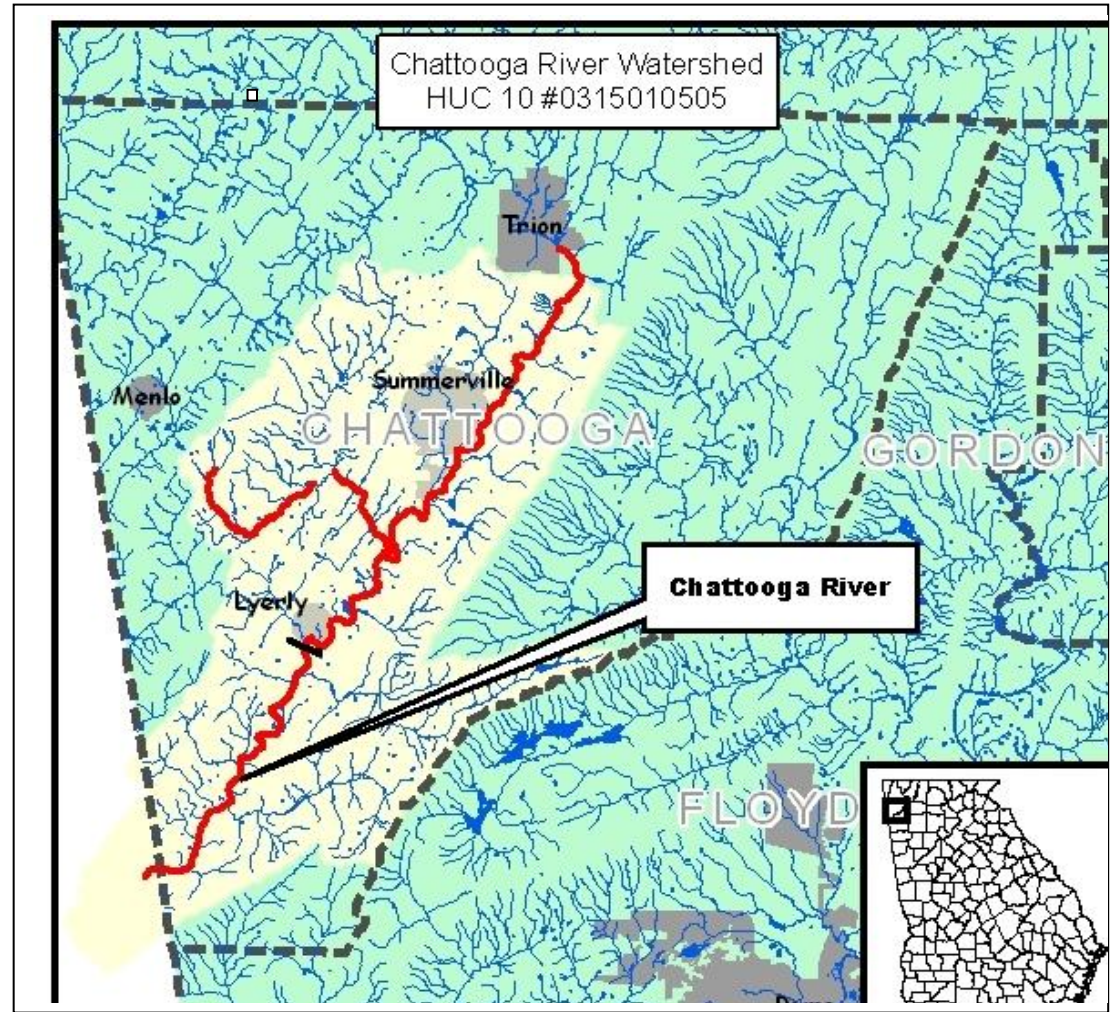


Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED

IMPAIRED SEGMENT	IMPAIRED SEGMENT LOCATION	EXTENT (mi/ac)	CRITERIA VIOLATED	EVALUATION
Chattooga River	Lyerly to Alabama State Line	7 mi	Fecal Coliform	Not Supporting

II. GENERAL INFORMATION ABOUT THE HUC 10 WATERSHED AND THE INDIVIDUAL IMPAIRED SEGMENT

This section reviews HUC 10 watershed characteristics followed by pertinent information on the drainage delineation of the individual stream segment.

General Information on the HUC #10 0315010505 watershed

The watershed of this segment drains an area of approximately 74,780 acres or 117 square miles. It contains just the southernmost tip of the City of Trion, the Chattooga County seat Summerville, the incorporated Town of Lyerly, and the Berryton, Holland, and Chattoogaville communities. The land is mostly forested and the developed land is predominantly agricultural and rural residential.

Forest & Farmland Use for Chattooga County – 2007

Forest Land % of Total Land / Acres	Land in Farms: % of Total Land/ Acres	Harvested Cropland: % of Total Land/Acres
62.2% / 124,696	26.5 % / 53,084	5.6% / 11,130

Sources: georgiastats.uga.edu; <http://narsal.uga.edu/glut/county.php>

The physiographic type of this area is defined as the Ridge and Valley region in Georgia. The ridges in this area are typically composed of chert and capped sandstone, while the valleys are usually limestone or shale. The thicker, more fertile soils typically form in the valleys from erosion of soil at higher elevations and the weathering of parent material. The weathering of sandstone and chert on ridges help form the acidic soils which maintain the forested areas of this region.

Potential Sources

The potential non-point sources of fecal coliform in the watershed are of both the point and non-point source variety. A point source is defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. Nonpoint sources are diffuse, and generally, but not always, involve accumulation of fecal coliform bacteria on land surfaces that wash off as a result of storm events.

Point Sources in the Watershed

Title IV of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES) permit program. There are two categories of NPDES permits: 1) municipal and industrial wastewater treatment facilities, and 2) regulated stormwater discharges. There are no such stormwater discharges in the watershed.

Wastewater Treatment Plants and other NPDES permit Holders

In general, industrial and municipal wastewater treatment facilities (abbreviated WWTP or WPCP) have NPDES permits with effluent limits. These permit limits are either based on federal and state effluent guidelines (technology-based limits) or on water quality standards (water quality-based limits). These WWTPs/WPCPs should be treated as potential sources, though their potential contribution is limited by the tight regulations that include stringent monitoring and management requirements. These regulations are based off of technology-based guidelines that the EPA has developed, which establish a minimum standard of pollution control for municipal and industrial discharges without regard for the quality of the receiving waters. These are based on Best Practical Control Technology Currently Available (BPT), Best Conventional Control Technology (BCT),

and Best Available Technology Economically Achievable (BAT). The level of control required by each facility depends on the type of discharge and the pollutant.

NPDES Permit Holders – Chattooga River HUC 10

Facility Name	Receiving Waterway	Type of Facility	Discharge Flow (MGD)	Permit Number
Summerville WPCP	Chattooga River	Municipal	2	GA0025704
Mohawk Carpets	Chattooga River	Industrial	Avg. flow: 1.255; permitted up to 2.6	GA0024104
Lyerly WPCP	Chattooga River	Municipal/LAS	0	GAU020277

(Mohawk Industries & EPD Data)

Potential Nonpoint Sources

Agricultural Sources

Agricultural livestock are a potential source of fecal coliform to streams and rivers in the Coosa River Basin. The animals grazing on pastureland deposit their feces onto land surfaces, where it can be transported during storm events to nearby streams. Animal access to pastureland varies monthly, resulting in varying fecal coliform loading rates throughout the year. Beef cattle spend all of their time in pastures, while dairy cattle and hogs are periodically confined. In addition, agricultural livestock will often have direct access to streams that pass through their pastures, and can thus impact water quality in a more direct manner (USDA, 2002). The following tables provide the estimated amount of farm animals in Chattooga County: livestock and chicken.

Livestock in Chattooga County – 2008

Beef Cows, Total Head	Beef Stockers	Dairy Cows	Horses Raised	Horses, Boarding/Breeding/Training	Sheep, # of ewes	Goats, total nannies	Pork, Farrow to Finish	Pork, Feeder Pigs, Total Head
9,300	3,000	85	900	170	15	400	35	0

Sources: georgiastats.uga.edu (2008)

There are no registered or permitted liquid manure CAFOs (Confined Animal Feeding Operation) located in the Chattooga River watershed, nor is there any registered dry manure operations in Chattooga County. Chattooga doesn't have the level of poultry operations as other surrounding counties but it is there is a presence (Conversation w/ Sherri Teems). The below chart lays out an approximate number of chickens from all chicken operations, broken down by types of chickens. The numbers are an approximate number based on the exact number of houses in the county multiplied by the average capacity of the typical chicken house in the county.

Chattooga County Chicken Population, by type

Breeder Pullet Unit	Broiler Chickens	Hatching Layers	Table Layers	Totals
0	150,000	90,000	0	240,000

Source: georgiastats.uga.edu (2008)

The majority of poultry farms in Georgia are dry manure operations where the manure is land applied. This can be a nonpoint source for fecal coliform bacteria. Chicken litter (manure) that is not properly stored or covered from the elements could also lead to fecal runoff. Chicken litter is also commonly spread on fields as a natural fertilizer, which expands the area of potential chicken waste contamination beyond just chicken farms. It is typically spread within a 15 mile radius of the chicken farm.

Agriculture in Northwest Georgia has been experiencing a long-term declining trend along with the increase of development. This is borne out by both conversations with USDA personnel and by the county farm numbers, which show an across the board decrease in the amount of farmland and harvested acreage. Plus, livestock is more often than not slowly decreasing year to year or just staying the same. Poultry levels have plateaued off, with a few increases. Still, agriculture remains a potential nonpoint source of fecal coliform pollution, but the scope of agriculture in the watershed, and any decrease in land use & intensity of use should be considered when considering its impact.

Wildlife Sources

The importance of wildlife as a source of fecal coliform bacteria in streams varies considerably, depending on the animal species present in the watersheds. Based on information provided by the Wildlife Resources Division (WRD) of GA DNR, the animals that spend a large portion of their time in or around aquatic habitats are the most important wildlife sources of fecal coliform. Waterfowl, most notably ducks and geese, are considered to potentially be the greatest contributors of fecal coliform. This is because they are typically found on the water surface, often in large numbers, and deposit their feces directly into the water. Other potentially important animals regularly found around aquatic environments include raccoons, beavers, muskrats, and to a lesser extent, river otters and minks. Recently, rapidly expanding feral swine populations have become a significant presence in the floodplain areas of all the major rivers in Georgia. Population estimates of these animal species in Georgia are currently not available.

White-tailed deer populations are significant throughout the Coosa River Basin. Fecal coliform bacteria contributions from deer to water bodies are generally considered less significant than that of waterfowl, raccoons, and beavers. This is because a greater portion of their time is spent in terrestrial habitats. This also holds true for other terrestrial mammals such as squirrels and rabbits, and for terrestrial birds (GA WRD, 2002).

Urban Sources

Fecal coliform from urban areas are attributable to multiple sources, including: domestic animals, leaks and overflows from sanitary sewer systems, illicit discharges, leaking septic systems, runoff from improper disposal of waste materials, and leachate from both operational and closed landfills. Urban runoff can contain high concentrations of fecal coliform from domestic animals and urban wildlife. Fecal coliform bacteria enter streams by direct washoff from the land surface, or the runoff may be diverted to a stormwater collection system and discharged through a discrete outlet. Domestic animals are unlikely to be much of an issue in the Chattooga River watershed due to the small population in predominantly rural areas, as seen below.

Chattooga County Urban/Rural Demographics

County Pop., 2000 Census	Density/mi ² , 2007	Population, Projection in 2010 ¹	Density/mi ² Projection in 2010	% of ppl. in rural land, 2000	% of ppl. in urban area, 2000
25,470	85.5	28,735	87.8	56.3	43.7

Sources: All georgiastats.uga.edu (2007) except for 1: North Georgia RDC

A portion of the fecal coliform contributions into the waterway may be attributed to failure of septic systems and illicit discharges of raw sewage i.e. straight pipes, of which there are periodic reports of such black water or grey water pipes. What the rural/urban split does indicate is that more people live outside the reach of municipal sewer lines, so they rely on septic systems. The only municipality on the river segment to have sewer is

the Town of Lyerly, Summerville and Trion, which both have sewer services, are further on upriver in the watershed. Newer installations of septic tanks are not really viewed as potential sources as almost all new installations are done correctly due to the current rigorous oversight of the Department of Public Health's Environmental Health Specialists, as is the inspection of repairs. The older septic tanks are more likely candidates to fail due to age, lack of regular maintenance such as pump-outs, and their installation under a less stringent regulatory system. Those installed pre-1984 are of particular concern, because that's the year professional contracting was mandated for septic contractors. Also, pre-1997 the compliance and enforcement mechanisms dealing with violating homeowners and installers were weak. In 1997, Act 280/Senate Bill 165 increased the oversight of this area with strengthened enforcement and inspection powers. The Department of Public Health phased in the implementation of these measures over time in order to correctly train and retrain all involved in the industry and regulatory agency.

Failing septic tanks' potential contribution to contamination of surface water is difficult to gauge, as it depends on the type and extent of failure, the dynamics of the geology and the groundwater table at the particular site. There is also a remote but still significant possibility that there is a failure underground without any tell-tell signs like bubbling up sewage – what's called a sub-surface failure. Between 2004 and 2009 (partial year), there were 542 new septic tank installations and 566 system repairs done in Chattooga County (Northwest Georgia EH). These numbers give a sense of how many new systems are in Chattooga County, but they can't tell which ones are prone to failure in this Chattooga River segment's area as this is contingent upon many variables such as lot size, size and type of septic tank, intensity of usage, and age along other factors. Also, these numbers are countywide, not on a watershed basis. One potentially mitigating factor is that septic tank failures usually are either self-reported or brought to the attention of environmental health staff by concerned neighbors, so individual failures aren't typically a chronic problem.

Urban runoff remains a possible source in the larger HUC 10 watershed as the segment is downstream of the two main cities of Chattooga County: Trion and Summerville. Thus stormwater runoff from impervious surfaces like cement, pavement, and roofs can add in fecal coliform contamination.

Many smaller communities use land application systems (LAS) for treatment of their sanitary wastewaters. The City of Lyerly has one such system. These facilities are required through LAS permits to treat all their wastewater by land application and are to be properly operated as non-discharging systems that contribute no runoff to nearby surface waters. However, runoff during storm events may carry surface residual containing fecal coliform bacteria to nearby surface waters. Some of these facilities may also exceed the ground percolation rate when applying the wastewater, resulting in surface runoff from the field. If not properly bermed, this runoff, which probably contains fecal coliform bacteria, may discharge to nearby surface waters.

Leachate from landfills may contain fecal coliform bacteria that may at some point discharge into surface waters. Sanitary (or municipal) landfills are the most likely to serve as a source of fecal coliform bacteria. These types of landfills receive household wastes, animal manure, offal, hatchery and poultry processing plant wastes, dead animals, and other types of wastes. Older sanitary landfills were not lined and most have been closed. Those that remain active and have not been lined operate as construction/demolition landfills. Currently active sanitary landfills are lined and have leachate collection systems. All landfills, excluding inert landfills, are now required to install environmental monitoring systems for groundwater and methane sampling. Many of the older, inactive landfills were never permitted. There is one landfill in the HUC 10

In rural areas of North Georgia, it is also not uncommon for refuse to be illegally dumped, occasionally directly into the waterways. This illicit activity also includes the dumping of game animal carcasses directly into waterways. This can be a potential human-caused source of pollution.

Relevant Management Activities in HUC 10 Watershed

- The Northwest Georgia Regional Commission conducted a Source Water Assessment Plan (SWAP) in 2003 for the City of Summerville for their water intake on Raccoon Creek, a tributary of the Chattooga River. Nine potential sources for contamination of the surface water were identified: six point sources and three nonpoint sources. The point sources are various: from sewer lift stations to mines. The nonpoint sources are urban, agricultural, and forestry runoff. Four of the total sources are in the high priority category and five in the medium priority category.
- Erosion & Sedimentation Controls: The City of Summerville and the Town of Lyerly have their E&SC permits issued by the EPD, whose Mountain District is also in charge of enforcing compliance with the E&S controls. Chattooga County is its own local issuing authority of E&SC permits, and is also in control of permit compliance.
- The National Forest Service and its Chattahoochee National Forest has a Watershed Management Area (WSMA) designation for a small part of the Lower Chattooga River Watershed – approximately 3% of the HUC 10 watershed is on N.F. land. The National F.S. has “Management Prescriptions” with their corresponding F.S. code for this area that falls within their boundaries: Areas Managed to Restore/Maintain Old Growth Characteristics (6.B); Scenic Corridors & Sensitive Viewsheds (7.B); Management, Maintenance & Restoration of Plant Associations (9.H); and Administrative Sites (5.A). These management measures mostly deal with controlling vegetation, which can have an impact on reducing the erosion and sedimentation that can introduce fecal matter into waterways (pgs. 4-4 & 4-5, Land & Resource...). There is also a WMSA far upstream on the Upper Chattooga River.
- Regional Watershed Plans/Assessments: The Northwest Georgia Comprehensive Water Management Plan was prepared in October 2004 by the consulting firms MACTEC Engineering and Consulting, Inc. and Brown and Caldwell for the Northwest Georgia Regional Water Resources Partnership (NWGRWRP) and the U.S Army Corps of Engineers (COE). A Preliminary Water Supply Study was issued in January, 2008 by the same consulting firms for the NWGRWRP in order to identify existing water supplies, the projected long-term water supply needs for Northwest Georgia, and the potential new water supply sources to meet those needs. Chattooga County is an associate member of the NWGRWP, and though they are not participating in the current regional watershed assessment and implementation plan, they stand to receive some benefits from it. Namely, the study and plan will give locals, state, and federal officials a current picture of water quality issues in the region, including in the Coosa River Basin which Chattooga County is part of.
- The City of Summerville adopted a Water Supply Watershed Protection ordinance on March 10th, 2008.
- The City of Summerville implemented a monitoring plan during the summer of 2003 which led to a watershed assessment and a watershed protection plan in September 2003. The Watershed Protection Plan was prepared by Welker & Associates, Inc. and included four corrective actions for Summerville to take, including two that related to high fecal coliform counts at two different sampling sites. This assessment and plan likely led to a revamped wastewater treatment plant for Summerville.
- Watershed Association: The Coosa River Basin Initiative (CRBI), also known as the Upper Coosa Riverkeeper, conducts water sampling, environmental outreach for the public especially in the school systems, and holds other events to raise consciousness about the area’s river quality and threats posed to it. They operate throughout the Coosa River Basin, including in Chattooga County.

Information on the Individual Chattooga River Segment (HUC 12# 031501050502)

The headwaters of the Chattooga River forms from the Chattooga Creek, Duck Creek, Spring Creek and Teloga Creek coming together northwest of the City of Trion across the Chattooga County line inside Walker County. It then flows southeast into the City of Trion before flowing southwest, passing by the southeast edge of Summerville. This segment starts at Lyerly, where it then continues its flows southwest down to the state line. The

drainage area is approximately 181,990 acres or approximately 284 square miles. It is an area characterized by forest land and agriculture with little other land uses.

Land Use for the Chattooga River Sub-Watershed (HUC12# 031501050502)		
	% of Land Use	Acres
Open Water	.5	844
Low Intensity Residential	1.7	3,184
High Intensity Residential	.4	708
High Intensity Commercial, Industry, Transportation	.2	312
Bare Rock, Sand, Clay	.1	110
Quarries, Strip Mines, Gravel Pits	.1	139
Forest	64.7	117,826
Row Crops	22	40,114
Pasture, Hay	2.5	4,481
Other Grasses (Urban, recreational e.g. parks, lawns)	7.3	13,314
Woody Wetlands	.5	947
Emergent Herbaceous Wetlands	.01	21
Totals	100%	181,990

GAEPD publication *Total Maximum Daily Load Evaluation for Six Stream Segments in the Tallapoosa River Basin for Fecal Coliform* (2009)

The land use described in the above chart was largely verified by the visual field survey. No high intensity residential land use was witnessed.

Georgia Forestry Commission BMPs

- All forestry operations are required to comply with the GFC’s handbook, “Georgia’s Best Management Practices for Forestry” and the BMPs contained within. The BMP Assurance Examination can be given at random to ensure that these measures are being implemented. However, the majority of these exams are given because of complaints sent to the GFC. When complaints are received the forester usually makes 4 or 5 visits to the property until it is retired properly. Typically, there is a large improvement in scores from the initial exam to the final exam. There has been no BMP assurance examinations conducted recently in Chattooga County, as there have been no complaints about forestry operations. Chattooga County is in the GFC District 1 (Rome).

III. CAUSES AND SOURCES OF SEGMENT IMPAIRMENT(S) LISTED IN TMDLs

Table 2. provides information contained in the current TMDL for the impaired water body. By definition, “wasteload allocations” (WLA) for municipal and industrial wastewater discharges and (WLA_{sw}) for stormwater outfalls are established in permitted areas, while “load allocations” (LA) are

established for non-point sources of pollution. **Wasteload allocations are assigned by Georgia EPD during the NPDES permitting process and are not part of the TMDL implementation planning process, which deals solely with non-point sources of pollutants.**

Table 2. WASTE LOAD AND LOAD ALLOCATIONS AND TMDLS FOR THE IMPAIRED SEGMENT

STREAM SEGMENT NAME	LOCATION	CRITERIA VIOLATED	WLA	WLA _{sw}	LA	TMDL
Chattooga River	Lyerly to Stateline	FC	1.11E+12		1.80E+15	2.01E+15

Table 3. contains information presented in the TMDL study that this implementation plan addresses.

Table 3. POTENTIAL NON-POINT SOURCES OF IMPAIRMENT INDICATED IN THE TMDLS

CRITERIA VIOLATED: FC	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED % REDUCTION (FROM THE TMDL)
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100ml (geometric mean May-Oct)	Agricultural Runoff	89%
		Urban Runoff	
		Leaking Septic Systems	
		Wildlife	

IV. IDENTIFICATION AND RANKING OF POTENTIAL NON-POINT SOURCES OF IMPAIRMENT

This section identifies and describes **in order of importance**, as determined through this TMDL implementation planning process, the extent and relative contributions from historic as well as current potential non-point sources of pollutants to the water quality impairment.

Based on land use data, the visual field survey, stakeholder input, a survey of Google satellite imagery, and the precedent of previous Chattooga River TMDLs and the TMDL study document, one can make a general statement about the geographic extent of each potential nonpoint source and each source's potential contribution to the fecal coliform contamination. Due to the mixed land use of the upstream area (agriculture, forests, industry, urban areas) and the fact that many tributaries empty into the segment it is possible there many sources that contribute to the pollution.

Urban runoff is unlikely to contribute much to the pollution due to the low population density of the sub-watershed. The Town of Lyerly is very small, so as to not have much impact on water quality. The City of Summerville is in the larger HUC 10 and is upstream, but it to isn't very large of a development. Trion, further upstream, is also a small city.

Agriculture is prominent in this area but it is mostly row crops which can pose less of a threat of bacterial contamination as compared to livestock operations. They can still be a source, especially if there are not proper buffers put in place and the farmers use chicken litter and/or livestock manure to fertilize their fields. There are relatively fewer chicken operations in Chattooga County compared with surrounding counties and no chicken houses in the vicinity of Lyerly. Much of the river corridor that is visible from public property has a good buffer of forest around it, though the state of buffers on its feeder streams is unknown. The limited number of livestock in the area can still be a source, as even individual cows produce a high concentration of fecal coliform in their waste. Still, it is important to note the decrease in land devoted to farming and in livestock numbers.

Septic tanks are a potential source of the contamination, though one that is hard to calculate. The Town of Lyerly has most of the residents within its small town limits on sewer, but the area up river up to Summerville and down river to Alabama is on septic. Most of the area down river of Lyerly is agricultural and sparsely populated, so this limits the geographic scope of septic systems contribution. They tanks are in the area though. The status of septic systems is hard to determine because they are on private property, underground, and because they typically don't exhibit signs of the potential to fail until they fail unless they are regularly maintained. When they do fail they are commonly recognized and fixed by trained installers under the oversight of the Environmental Health Department. There is also the possibility that failing septic systems are not apparent because they lack the common signs of bubbling up sewage or unusually green grass – a sub-surface failure. This typically is more of a groundwater contamination issue rather than a surface water one, but as the two hydrological systems are sometimes linked, so too can they share potential sources of contamination. These possible scenarios of overland contamination of water bodies along with groundwater contamination, plus the fact that the majority of soils in the area are considered poor quality for septic systems, make failing septic systems a potential contributor of the contamination in the watershed.

Wildlife is sure to be a source of contamination, due to the large forested area and the open fields that provides a habitat for them. Of course such a forested area also provides a buffer to also filter out such land-based fecal matter. A more pressing concern than the oft cited deer could be waterfowl and other aquatic warm-blooded animals, which are identified as more culpable animals in contributing fecal coliform. Also, the Chattooga River is a fairly broad and slow moving river that has adjacent open crop & hay fields, all of which provides a habitat for such waterfowl as geese, whose feces are high in fecal coliform concentrations.

Table 4. offers a simple format to rank **in order of importance**, as determined through this TMDL implementation planning process, the extent and relative contribution to the water quality impairment from all the potential non-point sources of pollution identified in Section IV. A “rating scale” of 0.5 to 5 has been developed to rank the sources. The rating chart provides guidance for rating the estimated extent (Rating A) and portion of the contribution (Rating B) from each potential non-point source and cause:

Rating A: Rating Chart to Estimate Geographic Extent of the Source or Cause in the Contributing Watershed	Rating B: Rating Chart to Estimate Portion of Contribution from the Source to the Pollutant Load Causing the Impairment	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 4. EVALUATION OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

APPLICABLE TO CRITERION 1: Fecal Coliform.

IMPAIRMENT SOURCES	ESTIMATED EXTENT OF CONTRIBUTION		ESTIMATED PORTION OF CONTRIBUTION		IMPACT RATING (A X B)
	Comments	Rating (A)	Comments	Rating (B)	
Agricultural Runoff	Not much livestock	1	But each cow can contribute a lot	3	3
Urban Runoff		.5		.5	.25
Failing Septic Sytems	Almost all septic in area	1		3	3
Wildlife	Large amount of forest/farmland	5		1	5

V. CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

Table 5A. identifies significant current and active Best Management Practices (BMPs) that have been installed to address potential non-point sources of impairment listed in Section IV, Table 4., and provides ratings of each management measure’s estimated Load Reduction Potential (LRP) when applied to a specifically identified non-point source. The rating chart provides guidance for rating the BMP Load Reduction Potential applied to a specifically identified non-point source:

Erosion & Sedimentation Control:

- Chattooga County is its own local issuing authority of E & SC permits, and is also in control of permit compliance. The Town of Lyerly and the City of Summerville are under the EPD’s Mountain District for the purpose of issuing and ensuring compliance with E&SC permits for activities which are required to submit an NOI under the NPDES General Permit for Construction Activity.
- House Bill 285 requires state certification in E & S Control for anyone involved in the following activities: land development, design, review, permitting, construction, monitoring, inspection, or any land-disturbing activity in Georgia (Georgia Soil and Water Conservation Commission). This certification is done through training by the Georgia Soil and Water Conservation Commission in consultation with Georgia Environmental Protection Division and the Stakeholder Advisory Board.

Chattooga County Ordinances and Management Measures

- No requirements for riparian buffers over Georgia’s mandated 25/50 foot minimum.
- They have not adopted for planning purposes or as ordinances any of the Part V environmental criteria issued jointly by the EPD & DCA.
- Member of the Northwest Georgia Regional Water Resources Partnership, an association of cities, counties, and large industries concerned about the preservation of Northwest Georgia’s water quantity and quality issues. Chattooga is not a participating member in the region-wide watershed assessment but it does receive other benefits from membership.

City of Summerville Ordinances and Management Measures

- No required riparian buffer that is over Georgia’s required 25 feet.
- The wastewater treatment plant capacity has recently been expanded with work being completed in 2007. The sewer lines were also inspected and cleaned out of any infiltration.

- There is a water supply watershed protection ordinance (enacted on March 10, 2008) in effect and in voluntary compliance with the Part V Environmental Criteria of the Comprehensive Plan.
- Does not have any of the other Part V protection plans or ordinances: River Corridor, Groundwater Recharge Area, Wetlands, or Mountain protection.
- No formal greenspace designations.
- Adopted a Water Supply Watershed Protection ordinance on March 10th, 2008.
- Implemented a monitoring plan during the summer of 2003 which led to a watershed assessment and a watershed protection plan in September 2003. The Watershed Protection Plan was prepared by Welker & Associates, Inc. and included four corrective actions for Summerville to take, including two that related to high fecal coliform counts at two different sampling sites.

Town of Lyerly Measures

- No required riparian buffer that is over Georgia's required 25 feet.
- Have not adopted for planning purposes or as ordinances any of the Part V environmental criteria issued jointly by the EPD & DCA.
- The Chattooga River is monitored by LAS wastewater treatment administrators once every quarter.

Georgia Forestry Commission BMPs

- All forestry operations are required to comply with the GFC's handbook, "Georgia's Best Management Practices for Forestry" and the BMPs contained within. The BMP Assurance Examination can be given at random to ensure that these measures are being implemented. However, the majority of these exams are given because of complaints sent to the GFC. When complaints are received the forester usually makes 4 or 5 visits to the property until it is retired properly. Typically, there is a large improvement in scores from the initial exam to the final exam. There has been no BMP assurance examinations conducted recently in Chattooga County, as there have been no complaints about forestry operations. Chattooga County is in the GFC District 1 (Rome).

Chattahoochee National Forest Management Measures

- The National Forest Service and its Chattahoochee National Forest has a Watershed Management Area (WSMA) designation for a small part of the Lower Chattooga River Watershed – approximately 3% of the HUC 10 watershed is on N.F. land. The National F.S. has "Management Prescriptions" with their corresponding F.S. code for this area that falls within their boundaries: Areas Managed to Restore/Maintain Old Growth Characteristics (6.B); Scenic Corridors & Sensitive Viewsheds (7.B); Management, Maintenance & Restoration of Plant Associations (9.H); and Administrative Sites (5.A). These management measures mostly deal with controlling vegetation, which can have an impact on reducing the erosion and sedimentation that can introduce fecal matter into waterways (pgs. 4-4 & 4-5, Land & Resource...). There is also a WMSA far upstream on the Upper Chattooga River.

Environmental Organizations

- The Coosa River Basin Initiative (CRBI), also known as the Upper Coosa Riverkeeper, conducts water sampling, environmental outreach for the public especially within the school systems, and holds other events to raise consciousness about the area's river quality and threats posed to it. They operate throughout the Coosa River Basin, including in Chattooga County. They are primarily involved with environmental education such as water quality sampling training in Chattooga County High Schools.

SWAP

- The Northwest Georgia Regional Commission conducted a Source Water Assessment Plan (SWAP) in 2003 for the City of Summerville for their water intake on Raccoon Creek, a tributary of the Chattooga River upstream of this segment.

U.S. Army Corp of Engineers

- The Chattooga River is slated to be dredged between 2007 and 2011. The USACE has not done so at the time of publishing.

Developments of Regional Impact

- The Northwest Georgia Regional Commission advises that compliance on the site to protect water quality is a necessity. Best Management Practices (BMPs) on this site should exceed the minimum requirements and attempt to consider all possible problems in order to adequately protect water quality in streams and drainage-ways/State waters.
- The Northwest Georgia Regional Commission recommends that the project design professionals meet with the Georgia Soil and Water Conservation Commission to review plans and assist in providing adequate erosion and sedimentation control measures, and stormwater runoff quantity and quality control measures (Georgia Soil and Water Conservation Commission, Region 1 Office, 700 East 2nd Avenue, Suite J, Rome, Georgia 30161-3359, Telephone: 706-295-6131).

BMP Load Reduction Potential Rating Chart (Percent Removal of Pollutant by the BMP)	Rating
None or negligible (approximately 0-5%)	.5
Low to medium (approximately 5-25%)	1
Medium to High (approximately 25-75%)	3
High (approximately 75% or more)	5
Unknown	UNK

According to the Georgia Statistics System, there is 510 acres in CRP (Conservation Reserve Program) in Chattooga County. It is not known in what watersheds this land is located.

Table 5A. CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

GENERAL AND SPECIFIC MEASURES APPLICABLE TO CRITERION 1: Fecal Coliform.

BMPs (1)	RESPONSIBILITY (2)	DESCRIPTION OF MEASURES (3)	FUNDING & RESOURCES (4)	IMPAIRMENT SOURCES (5)	DATE (6)	BMP LRP RATING (7)
Not Available/UNK						

Work Sheet for Table 5B. is designed to evaluate the capacity of existing or installed BMPs described in Table 5A. that have been implemented to reduce pollutant loadings from significant non-point sources identified in Table 4. Apply this work sheet as a local guide to evaluate BMPs in achieving water quality goals, establishing priorities for grant or loan programs, and identifying priorities for local watershed assessments and management plans.

Work Sheet for Table 5B. EVALUATION OF CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

APPLICABLE TO CRITERION 1: Fecal Coliform.

IMPAIRMENT SOURCES (1) (From Table 4)	IMPACT RATING (2) (From Table 4)	APPLICABLE BMPs (3) (From Table 5A)	EVALUATION SUMMARY (4)	ADDITIONAL INFORMATION / ACTIONS NEEDED (5)
Agricultural Runoff	3	Not Available/Unknown	N/A	Determine which ag BMPs are in place in Chattooga County, and if possible, in the Chattooga River watershed.
Urban Runoff	.25	N/A	N/A	N/A
Leaking Septic Systems	3	N/A	N/A	N/A
Wildlife	5	N/A	N/A	N/A

Table 5B. identifies new management measures that could improve or supplement current Load Reduction Potential (LRP) ratings or enhancements to existing BMPs that have been judged inadequate for achieving the load reductions. Evaluations in the Work Sheet for Table 5B. have determined that additional or enhanced management measures are necessary to more effectively reduce pollutant loads from the most likely non-point sources of impairment. The rating chart provides guidance for rating the Load Reduction Potential (LRP) of a BMP applied to a specifically identified non-point source:

New or Enhanced BMP Load Reduction Potential Rating Chart (Percent Removal of Pollutant by the BMP)	Rating
None or negligible (approximately 0-5%)	.5
Low to medium (approximately 5-25%)	1
Medium to High (approximately 25-75%)	3
High (approximately 75% or more)	5
Unknown	UNK

Table 5B. RECOMMENDED NEW MANAGEMENT MEASURES AND ACTIVITIES

APPLICABLE TO CRITERION 1: Fecal Coliform.

NEW BMPs (1)	RESPONSIBILITY (2)	DESCRIPTION (Identify whether new or enhanced) (3)	FUNDING & RESOURCES (4)	IMPAIRMENT SOURCES (5)	TARGET DATE (6)	NEW BMP LRP RATING (7)
Agricultural BMPs	Farmers; USDA; local environmental groups	New	Various	Agricultural Runoff	TBD	UNK
Stormwater BMPs	Industry; city and county government	New	Various	Urban Runoff	TBD	UNK
Septic Tank BMPs: Educational and Structural Programs	County Environmental Health Office; Cities of Summerville and Trion, Town of Lyerly Sewer Officials; and concerned citizens.	Enhanced from existing Environmental Health outreach with their pamphlets. Possibly new program of pump-outs with 319 (h) grant program.	Various	Failed Septic Tanks	TBD	UNK

VI. MONITORING PLAN

This section describes parameters to be monitored, status, whether monitoring is required for watershed assessments or stormwater permits, and the intended purpose. **Submittal of a Sampling Quality Assurance Plan (SQAP) for Georgia EPD approval is mandatory if monitoring data is to be qualified to support listing decisions.**

Water quality data used to evaluate the criteria violated are less than five years old? Yes [X] No [].

VII. PLANNED OUTREACH FOR IMPLEMENTATION

Table 7. lists and describes local outreach activities that will be conducted to support this implementation plan or to help improve water quality in the segment watershed.

Table 7. PLANNED OUTREACH FOR IMPLEMENTATION

APPLICABLE TO CRITERION 1: Fecal Coliform.

RESPONSIBILITY (1)	DESCRIPTION (2)	AUDIENCE (3)	START OR COMPLETION DATE (4)
Chattooga County School System/RESA	A summer day camp for gifted children in grades 5-8 teaches kids about natural resources including water and the protection of them.	Chattooga County Gifted Children, grades 5-8	Ongoing: June 2008 –future summers

Coosa River Basin Initiative	Train educators on Adopt-a-Stream protocols so they use it on ecological field trips.	Teachers, students of County/City schools	Ongoing
Coosa River Basin Initiative	Conduct water quality/quantity workshops and presentations to school kids and teenagers	Teachers, students of County/City Schools	Ongoing
UGA Cooperative Extension, County Agent	Conduct environmental education workshops in the classroom, in the field, and with 4-H groups in either location.	Chattooga County and City School Children	Ongoing
UGA Cooperative Extension, County Agent	Participate in Rivers Alive every October, the statewide waterway cleanup.	Chattooga County and City School Children	Ongoing
Chattooga County Environmental Health Department	Provide packets of information containing do's and don'ts for septic system maintenance as well as a 9 minute DVD dealing with septic system maintenance.	Chattooga County homeowners on septic – primarily reaches new home owners and homeowners w/ recently failed systems.	Ongoing

VIII. MILESTONES AND BENCHMARKS OF PROGRESS FOR BEST MANAGEMENT PRACTICES (BMPs) AND OUTREACH

Table 8. shows what milestones and benchmarks have been developed to validate the progress of local best management measures identified in Tables 5A., 5B., and other sections of this plan in reducing pollutant loads from identified non-point sources of impairment.

Table 8. MILESTONES OF PROGRESS

BMP (1)	MILESTONE / BENCHMARK (2)	RESPONSIBLE ORGANIZATION (3)	METHOD / TIMELINE (4)	BMP STATUS (5)	
				INSTALLED TABLE 5A.	PROPOSED TABLE 5B.
Summer Day Camp		Chattooga County School System		x	
Adopt-a-Stream Training Workshops		CRBI		x	x
4-H water quality outreach/River's Alive		County Extension Agent, 4-H Leader		x	
Septic Tank Maintenance Outreach		Chattooga Dept. of EH		x	

IX. STAKEHOLDERS

This section describes outreach activities engaging local stakeholders in the TMDL implementation plan preparation process, including the number of attendees, meeting dates, and major findings and recommendations.

The initial contact was made with local government officials and public servants through mail and email to invite them to a meeting on TMDL Planning that was held at the Northwest Georgia Regional Commission on April 1st, 2009 in Rome. Neither Chattooga County nor any of its cities were represented the meeting. Chris Faulkner, Environmental Outreach Coordinator from the Environmental Protection Department, gave a PowerPoint presentation that explained the TMDL process, as well as a list of the streams that were eligible for Extended Revision planning selection in Northwest Georgia. At the end of the meeting it was determined that the people in attendance compile a list of people that they would like to act as stakeholders for the impaired streams in their particular watershed, along with their choice for an extended revision. This request for suggestions went largely unanswered but the meeting served its purpose of making the initial notice of the new slate of TMDL plans to be drawn up with local government cooperation.

A public stakeholder meeting was held on June 11th, 2009. Due to the smaller amount of attendees – seven people- the NWGRC contractors gave a condensed version of their PowerPoint presentation on fecal coliform, TMDL planning, and how the plan can be used to address the problem. Shaun Brand, the environmental health specialist for Chattooga and Dade counties, gave a presentation on the problem with leaking septic systems. He says he gets reports of eight to twelve failing systems a month, with most of those being older systems (30+ years). He also receives two to three reports of straight pipe systems – an illegal design failure – every couple of months. While most of these straight pipe systems are discharging the still harmful but less so grey water, he also writes up a residence that is discharging black water fairly regularly. Straight pipes are still possible in the area covered by the Georgia Power utility as they don't require you to have a septic system prior to turning on the electricity, but there is no such loophole in the areas covered by the TVA or the North Georgia EMC. There was a conversation concerning grease getting into the sewer lines or septic systems, which has been an issue in the past for Summerville and one which they have spent a considerable sum in rectifying.

It is stated that the most predominant agriculture land use of the segment's drainage area is row crops – some of which who apply trucked-in chicken litter to their fields. There are also a few beef cattle operations in the area, including some that participate in conservation programs. It is also posited that the cattle have little access to the river, with or without fencing, when it is at normal levels. This is explained as due to the high, steep river banks. There is still a potential for cattle incursion into the tributaries, along with other non-agricultural sources potentially contributing fecal coliform to these feeder streams.

A second public meeting was held in Rome on August 11th, 2009 to discuss the TMDL planning on the Chattooga River with local stakeholders. This meeting ended up being a contentious, largely unproductive meeting with most of the meeting being monopolized by one upset Chattooga River stakeholder. There was some productive input from others concerning septic tanks, wildlife's potential to contribute to the problem, and the economic value of the region's waterways in terms of tourism. There was a discussion of whether the State of Georgia would match federal 319 funds with state funds as some other states do. The response was a no, and particularly so since the state is suffering one of the worse deficits in a generation.

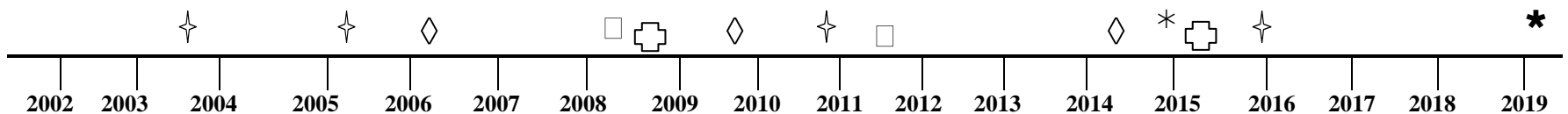
Following is a list of advisory committee or watershed group members who participated in this TMDL implementation planning process.

Table 9. STAKEHOLDER ADVISORY GROUP MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Shaun Brand/ Chattooga County Environmental Health	60 Farrar Dr./ P.O. Box 203	Summerville	GA	30747	(706) 857- 3471	sgbrand@dhr.state.ga.us
Tony Carroll/ City of Summerville	P.O. Box 180	Summerville	GA	30747	(706) 859- 0907	cosdirector@windstream.net
Doug Cabe/Limestone Valley RC&D	125 Red Bud Rd. NE, Suite 7	Calhoun	GA	30701	(706) 625- 7044	doug.cabe@usda.gov
Sherri Teems/ NRCS	1401 DEAN ST STE I	Rome	GA	30161-6494	(706) 291-5651	Sheri.teems@ga.usda.gov
Josh Schrecengost/ GA DNR - WRD	1401 DEAN ST STE I	Rome	GA	30161-6494	(706) 291-5651	Josh.schrecengost@dnr.state.ga.us
Harold Ragland/City of Lyerly	P.O. Box 203	Lyerly	GA	30730	(706) 895- 2611	townoflyerly@windstream.net
Jason Winters/Chattooga County	P.O. Box 211	Summerville	GA	30747	(706) 857- 0700	chattcom@windstream.net

PROJECTED IMPLEMENTATION TIMELINE

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



- ✦ Projected EPD Basin Group Monitoring
- New TMDLs Completed
- ◇ Tier 2 TMDL Implementation Plan Received by EPD
- ✚ Evaluation of Implementation Plan / Water Quality Improvement
- * Projected Implementation Timeline for Plans Prepared in 2006
- * Projected Implementation Timeline for Plans Prepared in 2009

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Prepared By:	Ben Robinson and Jonathan Bridges		
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E-mail:	brobinson@nwgrc.org; jbridges@nwgrc.org		
Date Submitted to EPD:	9-30-2009		Revision:01

Appendix A.
OUTREACH ATTENDANCE

Following is a list of the 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.

Plan for Chattooga River
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NAME/ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Shaun Brand/ Chattooga County Environmental Health	60 Farrar Dr./ P.O. Box 203	Summerville	GA	30747	(706) 857- 3471	sgbrand@dhr.state.ga.us
Tony Carroll/ City of Summerville	P.O. Box 180	Summerville	GA	30747	(706) 859- 0907	cosdirector@windstream.net
Doug Cabe/Limestone Valley RC&D	125 Red Bud Rd. NE, Suite 7	Calhoun	GA	30701	(706) 625- 7044	doug.cabe@usda.gov
Sherri Teems/ NRCS	1401 DEAN ST STE I	Rome	GA	30161-6494	(706) 291-5651	Sheri.teems@ga.usda.gov
Josh Schrecengost/ GA DNR - WRD	1401 DEAN ST STE I	Rome	GA	30161-6494	(706) 291-5651	Josh.schrecengost@dhr.state.ga.us
Harold Ragland/City of Lyerly	P.O. Box 203	Lyerly	GA	30730	(706) 895- 2611	townoflyerly@windstream.net
Jason Winters/Chattooga County	P.O. Box 211	Summerville	GA	30747	(706) 857- 0700	chattcom@windstream.net
Charles Loya	914 Thomas Rd.	Trion	GA	30753	(706) 734- 3593	
John Leslie	1045 F. Hatchery Rd.	Summerville	GA	30247	(706) 857- 4523	
Wayne Hurley	20 Trixie Ln.	Summerville	GA	30747	(706) 857- 2707	

APPENDIX B.

STATUS REPORTS / UPDATES TO THIS PLAN

If there are any revisions to an existing plan, this section will describe the date, section or table updated, and a summary of what was changed and why. A Status Report / Updates on Existing Local TMDL Implementation Plans and Watershed Remediation will be attached as a separate document.

N/A – This is a new report.

**APPENDIX C.
VISUAL FIELD SURVEYS, NOTES, PHOTOGRAPHS, AND MAPS.**

Along with a general windshield verification of land use in the sub-watershed, the NWGRC surveyed three road crossings on the Chattooga River on April 9, 2009. At one such point, we saw cattle going down into the river, which might lead to an increase in fecal coliform contamination. The land use that was observed was mostly in line with the statistics on the books, though there wasn't as much row crops as 22% of land use would lead one to believe would be seen. It is a broad river that runs fairly muddy. A farmer was encountered who alluded to the City of LaFayette, Walker County dumping effluent into the river. He also said there were past problems up near LaFayette that have been now rectified – namely a golf course that had a septic system that went straight into the river's headwaters. Near Holland-Chattoogaville, here was a new singlewide trailer right on the river's banks with a septic being installed on the property. On the southern side of the river there are large tracts of what appears to be fallow fields in the floodplain along Fullerton Rd. Further on, there is timberland where the river enters the State of Alabama. The following is the road crossing sites that were included in the survey: Tallifero Springs Rd., Holland-Chattoogaville Rd., and Fullerton Rd (Dirt Road).





**Appendix D: Sources
(in order of appearance in plan)**

www.georgiastats.uga.edu

“Georgia Land Use Trends: Chattooga County Data.” 2005. Natural Resources Spatial Analysis Lab, College of Agricultural and Environmental Sciences, University of Georgia. Accessed at <http://narsal.uga.edu/glut/county.php>.

SWAP Information: In-house project done by Coosa Valley RDC and North Georgia RDC in 2001-2003.

EPD data (NPDES, landfill, supplied by Chris Faulkner, Environmental Outreach Coordinator, EPD.

“Total Maximum Daily Load Evaluation for Stream Segments in the River Basin for Fecal Coliform.” January, 2009. The Georgia Environmental Protection Division of the Department of Natural Resources. Atlanta, GA.

“Watershed Management Population Projections and Employment Trends and Projections Fact Sheet.” October 2004. North Georgia RDC.

Georgia DCA, <http://www.georgiaplanning.com/planners/SDmaps>

Northwest Georgia Environmental Health/Public Health Onsite Sewage System Installation and Repair Permit History: 2004-2009. Received from Tim Allee, District EH Director, via email on 8/25/2009.

The Northwest Georgia Comprehensive Water Management Plan, October 2004. MACTEC Engineering and Consulting, Inc. and Brown and Caldwell for the Northwest Georgia Regional Water Resources Partnership (NWGRWRP) and the U.S Army Corps of Engineers (COE).

Preliminary Water Supply Study January, 2008. MACTEC Engineering and Consulting, Inc. and Brown and Caldwell for NWGRWRP.

The City of Summerville, Georgia Watershed Protection Plan, September, 2003. Welker and Associates.

“Georgia’s Best Management Practices for Forestry.” January 1999, Georgia Forestry Commission.

In person appointments with Chattooga County Commissioner Jason Winters and Lyerly Public Utilities Manager Harold Ragland: 7/17/2009.

Email Correspondence with Tony Carroll, Director of Public Works and Utilities, City of Summerville: 6/16/2009 and two phone conversations with Michael Fowler, WWTP Manager, City of Summerville: during June and July.

In person discussion with CRBI Program Coordinator David Promis, 7/16/2007.

Erosion and Sedimentation Control Issuing Authorities, by County. Updated January 23, 2009. Georgia EPD: Watershed Protection Branch. Frank Carubba.

<http://maps.google.com>

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Joss, Jill and Julie Meadows. Joint City-County Comprehensive Plan Update 2007-2027 Partial Plan Update For Chattooga County and the Cities and Towns of Lyerly, Menlo, Summerville, and Trion. September 2006, Prepared by the Coosa Valley Regional Development Center. Accessed at www.georgiaplanning.com.

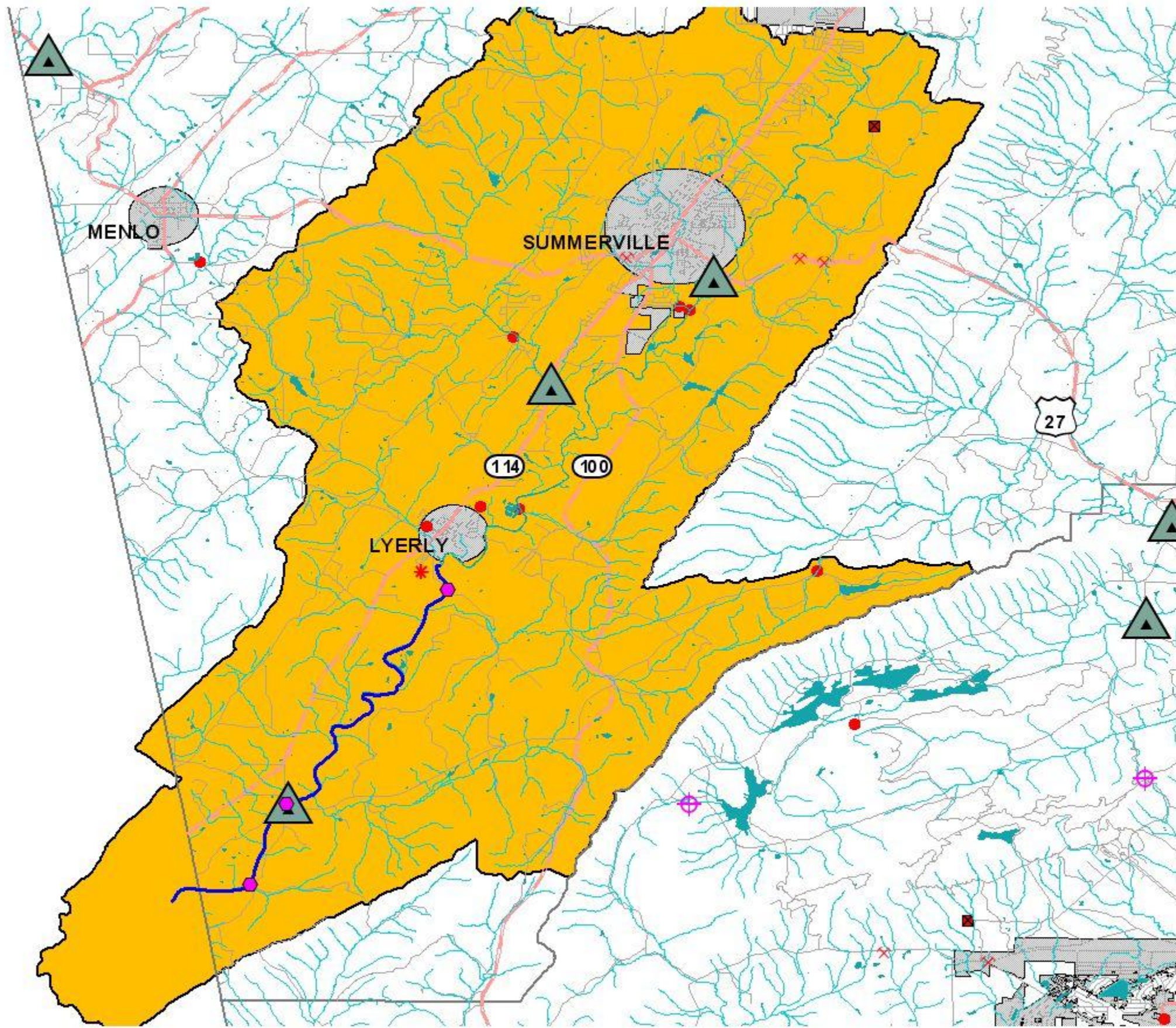
Statement on Developments of Regional Impact: David Howerin, Planning Director: Northwest Georgia Regional Commission.

Phone Conversation with Rebecca Thomas, CEA for Chattooga County: 7/16/2009.

Tier 2 TMDL Implementation Plan
and
Extended Revisions

**Chattooga River
Upper Coosa Watershed
HUC10# 0315010505**

Lyerly to State Line



LEGEND

- BPA REG STREAM SEGMENT
Feet Contour Lines
- SUBBASIN
- Lake
- Stream
- Cello
- Landfill
- Land Application Site
- NPDES Permitted Site
- Mine
- STATE HIGHWAYS
- ROADS

- Water Quality Monitoring Stations 2009
- USGS Water Quality Monitoring Stations 2001
- USGS Water Quality Monitoring Stations 2005
- EPD Water Quality Monitoring Stations
- Field Survey Locations 2009

6 0 6 Miles