

STATE OF GEORGIA

TIER 2 TMDL Implementation Plan (Revision # 01)

Segment Name: Oostanaula River

Date:9/30/2009

River Basin: Coosa River Basin

Local Watershed Governments:

Gordon, Floyd, Walker, and Whitfield Counties;
 Cities of Calhoun, Resaca, Plainville

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.

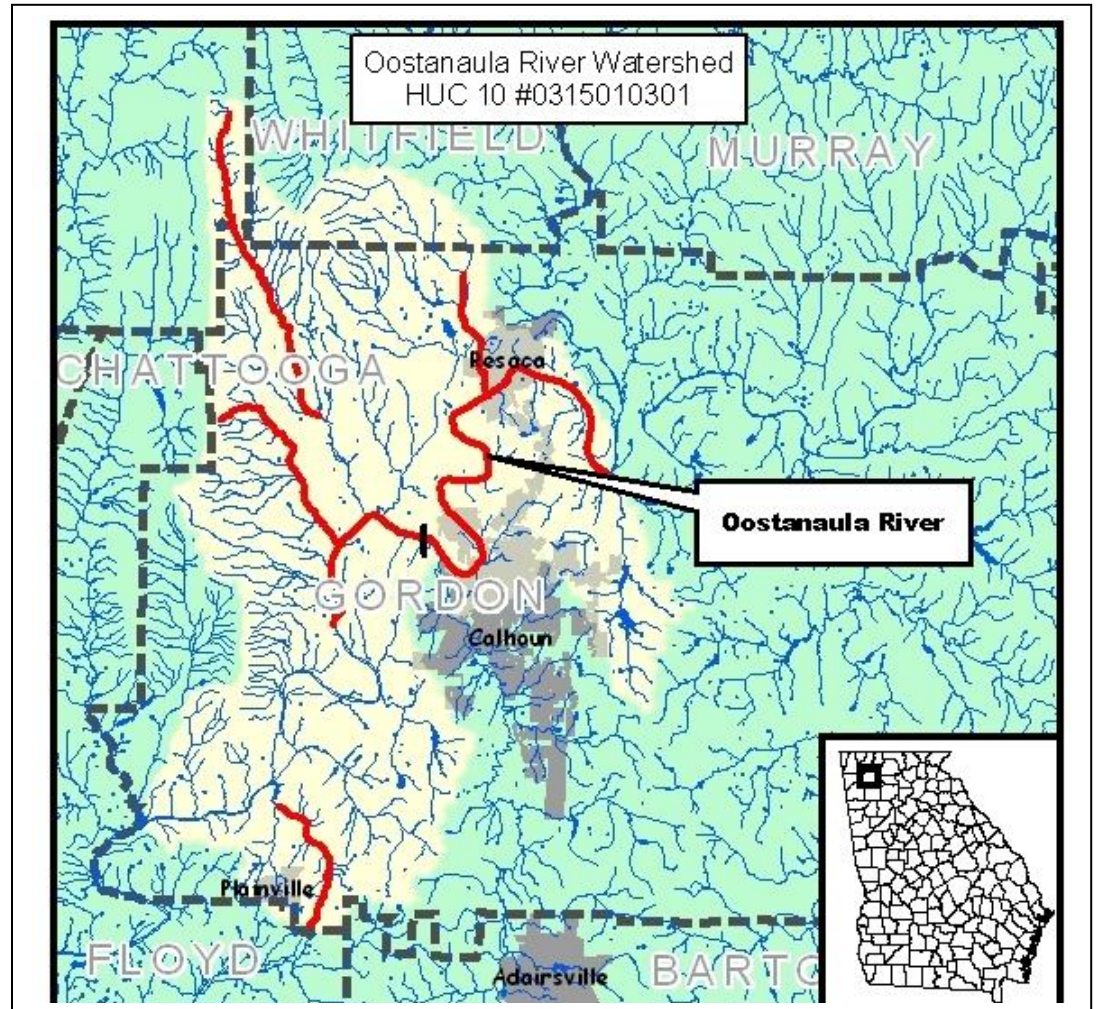


Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED

IMPAIRED SEGMENT	IMPAIRED SEGMENT LOCATION	EXTENT (mi/ac)	CRITERIA VIOLATED	EVALUATION
Oostanaula River	Conasauga/Coosawattee to Oothkalooga Creek	11	Fecal Coliform	Not Supporting
Camp Creek	Dry Creek to Oostanaula River	3		
Snake Creek	Headwaters to Oostanaula River	11		

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 Watershed

The 0315010301 HUC 10 watershed drains an area of approximately 75,459 acres or 118 square miles. It stretches from its northwest corner in southern Walker and Whitfield Counties to the western and southern borders of Gordon County. Its borders mostly skirt southern and central Calhoun taking in Calhoun’s northern tip while encompassing almost all of Resaca and in total about the whole western half of Gordon County. It also takes in very small parts of northern and east-central Floyd County. The below table lays out that forestland is the highest percentage land use followed by agricultural land in Gordon County.

Forestry and Agricultural Land Use in Gordon County

Forestland: % of Total/ Acres	Land in Farms: % of Total Land/ Acres	Harvested Cropland: % of Total Land/Acres
53.4% / 121, 600	34.8%/ 79,128	10%/ 22,794

Source: georgiastats.uga.edu (2007)

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. Basically, there are two categories of NPDES permits: 1) municipal and industrial wastewater treatment facilities, and 2) regulated stormwater discharges.

Wastewater Treatment Plants

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 WWTPs – HUC 10 # 0315010301

Facility Name	Receiving Waterway	Type of Facility	Discharge Flow (MGD)	Permit Number
Calhoun WPCP	Oostanaula River	Municipal/LAS	16	GA0030333
W.L. Swain Elementary School	Robbins Creek	Gen PID	.01	GA0032221
Cumberland Academy	Oostanaula River	PID	.016	GA0035947

* Only the Calhoun WPCP discharges into the individual segment. The other two are downstream of the segment.

Source: EPD Data

Regulated Stormwater Discharges

Some stormwater runoff is covered under the NPDES Permit Program. It is considered a diffuse source of pollution. Unlike other NPDES permits that establish end-of-pipe limits, stormwater NPDES permits establish controls “to the maximum extent practicable” (MEP). Currently, regulated stormwater discharges that may contain fecal coliform bacteria consist of those associated with industrial activities including construction sites disturbing one acre or greater, and large, medium, and small municipal separate storm sewer systems (MS4s) that serve populations of 50,000 or more. Stormwater discharges associated with industrial activities are currently covered under a General Stormwater NPDES Permit. This permit requires visual monitoring of stormwater discharges, site inspections, implementation of Best Management Practices (BMPs), and record keeping. Stormwater discharges from MS4s are very diverse in pollutant loadings and frequency of discharge. This segment of the Oostanaula River passes through no MS4s but its HUC 10 does enter into Floyd County several miles downstream. Floyd County is a Phase II MS4, meaning it meets the criteria for small to medium sized political areas that have more than 50,000 people and a population density of at least 1,000 people per square mile. This would have no bearing on this upstream portion.

Nonpoint Sources

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).

Agricultural Sources

Agricultural livestock are a potential source of fecal coliform to streams 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 Gordon County for livestock and poultry.

Livestock population for Gordon County

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
12,800	4,200	0	760	200	80	1,800	0	0

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. Current federal regulations require that large poultry farms operate under an NPDES permit.

There are many chicken farms in Gordon County, besides the one CAFO aforementioned, that may also be a source of the fecal coliform pollution. The below chart lays out an approximate number of chickens in each county 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.

Chicken Population in Gordon County, by type (thousands)

Breeder Pullet Unit	Broiler Chickens	Hatching Layers	Table Layers	Totals
408	11,180	686.4	100.5	12,374.9

Source: georgiastats.uga.edu (2008)

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 at stakeholder meetings, other stakeholder input, 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 region-wide. Still, agriculture remains a potential nonpoint source of fecal coliform pollution, but the scope of agriculture in the watershed and any decrease in the size should be considered in the establishment of potential causes of the pollution.

Urban Sources

The Oostanaula River watershed is mostly forested and agricultural, which is representative of Gordon County land use as a whole. Gordon county is sparsely populated and less dense and more rurally populated and some the neighboring counties. Even small low- or high-density developments can have an adverse impact if there is a systemic problem.

Urban/Rural Demographics of Gordon Counties

County Pop., 2000 Census	Density/mi ² , 2007	Population Projection for 2010 ¹	Density/mi ² Projection in 2010	% of pop. in rural land, 2000	% of pop. in urban area, 2000
44,104	146.7	56,506	155.5	65.8	34.2

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

Fecal coliform from urban areas are attributable to multiple sources, including: domestic animals, leaks and overflows from sanitary sewer systems, illicit discharges of sewage from older or illegal hookups of sewer lines into stormwater systems, leaking septic systems (whether from urban or rural households), 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 storm water system and discharged through a discrete outlet.

A portion of the fecal coliform contributions into the waterways may be attributed to failure of septic systems and illicit discharges of raw sewage i.e. straight pipes. The residences surrounding the segment in Gordon County are mostly on septic, with the remaining on sewer line within the Calhoun city limits – where sewer coverage isn't citywide. (Georgia DCA, <http://www.georgiaplanning.com/planners/SDmaps>).

There has been continued urban development in Gordon County, as there has been along the I-75 corridors. Some of these new households fall outside of the sewer service areas. These new installments 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, increased probability of lack of regular maintenance such as pump-outs, and their installation under a less stringent regulatory system. Those installed pre-1984 didn't have to have professionally certified 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, and 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 2,047 installations of septic tanks and 978 repairs in Gordon County (Northwest Georgia EH). These numbers give a sense of how many new systems are in Gordon County. But they don't tell the total number of septic tanks, and which ones are prone to failure in the Oostanaula River area as this is contingent upon many variables such as lot size, size and type of septic tank, intensity of usage, and age along with other factors. Also, these numbers are countywide, not on a watershed basis. 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.

Many smaller communities use land application systems (LAS) for treatment of their sanitary wastewaters. 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. Gordon County has one private LAS, Terra Renewal Services plus the City of Calhoun's wastewater treatment plant land applies its partially treated wastewater that's had bio-solids removed.

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 are four landfills in the HUC 10, but none in the drainage area of this Oostanaula River segment.

Relevant Management Activities in the HUC 10 Watershed

- The Northwest Georgia Regional Commission conducted a Source Water Assessment Plan for the city of Calhoun for both of their water intakes. It identified 112 point and non-point potential sources that could contaminate the Coosawattee River drinking water intake: 34 high priority, 29 medium priority, and 49 low priority potential sources along with 142 poultry, swine, and dairy beef operation identified in the watershed. The plan also identified 394 potential sources in the watershed around the Oostanaula River water intake: 46 high priority, 89 medium priority, and 258 low priority along with the same number of agricultural operations.
- 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. There is an ongoing study – Northwest Georgia Water Quality Improvement Study and Implementation Plan- conducted by these same firms for the NWGRWRP and the U.S. Army COE. This study has four study sites in the City of Calhoun, one of them directly on this listed Oostanaula River segment directly north of the City of Calhoun.
- Erosion & Sedimentation Control: Gordon County issues its own permits through its building inspector who also is in charge of compliance. City of Calhoun is a Local Issuing Authority for erosion and sedimentation control for land disturbing activities. The building inspector is in charge for the issuing of the permits and compliance with them. The City of Resaca's permitting and compliance is handled by the Georgia EPD's Mountain District.
- The National Forest Service and its Chattahoochee National Forest has a Watershed Management Area designated for the Upper Oostanaula River, including part of this segment. Approximately 11% 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 the National Forest land: Natural Areas with few open roads (4.I); Areas Managed to Restore/Maintain Old Growth Characteristics (6.B); Dispersed Recreation Areas (7.E.1); Dispersed Recreation Areas with Vegetation Management (7.E.2); and Management, Maintenance & Restoration of Plant Associations (9.H). 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 & 4-9, Land & Resource...).
- The New Echota River Alliance is the sole environmental organization in Gordon County. It focuses upon public education about water quality, monitoring, and conducts waterway trash cleanups.

General Information on the Individual Impaired Segments

Oostanaula River (HUC 12 #: 031501030103)

This segment and the river start at the same point, at the confluence of the Coosawattee and the Conasauga Rivers. It then makes a big northward bend around the City of Calhoun on the south side peninsula-like land and the City of Resaca on the north side. The river then bends down flowing south by southwest before converging with the Etowah River in Rome to form the Coosa River. This particular segment runs for 11 miles before

ending after the big bend at the Oothkalooga Creek outlet in the City of Calhoun. It drains a primarily forested and agricultural area. This is a larger area than most of its tributary creeks as it is a broad river by this point. The land use of the segment is broken down in the below table.

Land use for HUC 10# 0315010301 by category: Acres (Percent)

Stream/ Segment	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial, Industry, Transportation	Bare Rock, Sand, Clay	Quarries, Strip Mines, Gravel Pits	Forest	Row Crops	Pasture, Hay	Other Grasses (Urban, recreational e.g. parks, lawns)	Woody Wetlands	Emergent Herbaceous Wetlands	Totals
Oostanaula River	3,872 (.5)	14,791 (1.9)	5,192 (.6)	2,880 (.4)	1,464 (.2)	503 (.1)	529,539 (66.2)	21,227 (2.7)	126,283 (19.7)	56,105 (7)	5,710 (.7)	75 (.01)	767,641 (100)
Camp Creek	79 (.8)	209 (2.2)	27.6 (.3)	5.1 (.1)	5.6 (.1)	0 (0)	6,436.6 (67.3)	1,920.8 (20.1)	185 (1.9)	633 (6.6)	65.6 (.7)	1.3 (.01)	9,568 (100)
Snake Creek	4.5 (.04)	66.6 (.6)	20.2 (.2)	14.7 (.1)	1.8 (.02)	42.5 (.4)	7,247 (73.2)	1,656.8 (16.7)	433.7 (4.4)	387.6 (3.9)	30.7 (.3)	1.1 (.01)	9,901.8 (100)

Source: GAEPD TMDL Study Doc: "Total Maximum Daily Load Evaluation for Twenty-Nine Stream Segments in the Coosa River Basin for Fecal Coliform." (2009)

This land use is largely in line with what was witnessed during the land use survey and in satellite photos.

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. 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 were no BMP assurance exams for forestry operations in Gordon County, as there were no complaints to generate such a required inspection and examination. The GFC District 1 (Rome) is responsible for forestry operations in Gordon County.

Major BMP Program in Sub-Watershed

- Environmental Quality Incentives Program (EQIP): A Natural Resources Conservation Service (NRCS) program, it is used to help farmers offset the costs of implementing agricultural BMPs targeted to improve water quality. These contracts can last up to 5 years and can include technical expertise along with financial assistance. Along the Oostanaula segment cross fences, water troughs, heavy use areas, and waste storage facilities are the most widely implemented BMPs.
- Continuous Conservation Reserve Program (CCRP): An NRCS program, it is used to help farmers offset the cost of safeguarding environmentally sensitive land, particularly protecting watersheds and wildlife habitats with riparian buffers and other Best Management Practices (BMPs). The farmer is financially with up to a 90% funding using a patch work of funding that exceeds the normal maximum 50% cost share. So usually, the agricultural producer has to only front 10% out-of-pocket expense. Plus, the contracted party gets a rental payment

based on a number of factors including soil quality, as this is a type of conservation easement. The contract includes technical expertise along with financial assistance. The contract lasts for ten to fifteen years. During that time, the farmer is responsible for the maintenance of the conservation measures and the NRCS periodically inspects them to ensure their effectiveness. Typically in the Northwest Georgia area, these measures are mostly cattle exclusion from creeks and riparian forest buffer establishment using fences and timber/shrub planting, as was implemented along the Oostanaula River.

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
Oostanaula River	Conasauga/Coosawattee to Oothkalooga Creek	Fecal Coliform	1.42E+12	1.12E+12	3.24E+14	3.63E+14

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)	Urban Runoff	32%
		Agricultural Runoff	
		Failing 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.

Using land use data, the field survey, stakeholder input, Google satellite imagery and the TMDL study documents along with a previous TMDL for sedimentation on Oostanaula River, 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 use of the area (agriculture, urban centers and industry, forests) and that of the Oostanaula's tributaries that empty into the segment, there are likely many sources that contribute to the pollution.

Urban runoff is a potential source since the river goes by both eastern and western Calhoun and the City of Resaca sits directly on the river. Stormwater runoff could contribute to the impairment. Still, most of the land in the drainage is non-urban.

Much of the developed land on the southern side of the river (within Calhoun city limits) is on sewer. The Calhoun wastewater treatment plant has just been updated and expanded in recent years, so that is an unlikely source. Septic tanks are in the area though, especially on the northern side of the Oostanaula, and a small portion of which those have the potential to fail. 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. On a positive note, when they do fail they are commonly immediately recognized and fixed by trained installers under the oversight of the Environmental Health Department. There is also the possibility, however remote, that failing septic systems are not even apparent to the human eye 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, 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.

Agriculture makes up the predominant improved land use. Runoff from livestock grazing fields and from direct deposit of fecal matter into unfenced streams are the usual agricultural sources of fecal coliform. Bovine feces do contain a large amount of fecal coliform. But runoff from row crops and other crops that have been fertilized with chicken litter or other animal manure are also potential sources. There are over twenty chicken houses visible from overhead imagery in the immediate upstream area surrounding the Coosawattee and Conasauga Rivers which come together to start the Oostanaula and this segment. There are approximately 13 chicken houses in the segment's immediate sub-watershed, with the possible contribution of many different tributaries that flow into this river. These tributaries could carry fecal coliform from chicken, other agricultural, or other potential sources into the Oostanaula River. Camp Creek, with its numerous chicken operations and Oothkalooga Creek with its fecal coliform issues and some chicken houses are two such tributaries. This is not to definitively say these poultry and livestock operations are causing most of the problem, but to note their presence and their potential to contribute to elevated fecal coliform levels.

With a majority of the land use in the sub-watershed being either forested or agriculture, wildlife is certain to be present and contribute somewhat to the impairment as both land uses serve as either natural or adapted habitats for such fauna. There is also a similar issue of lack of definitive data as with septic systems that could be used to ascertain the potential contribution of wildlife. Deer are unlikely to contribute much to the problem since they do not spend as much time in the water as other creatures like waterfowl and other water-friendly animals like raccoons, which are more likely contributors.

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)	
Urban Runoff	Not much urban development; stormwater systems.	1		3	3
Agricultural Runoff		3		3	9
Failing Septic Systems		3		3	9
Wildlife	Large amount of forested land	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:

Gordon County Current Management Measures and Ordinances

- Issues its own Erosion & Sedimentation Control permits through its building inspector who also is in charge of compliance.
- There are no riparian buffers zones beyond the Georgia standard of 25 feet.
- Has a groundwater recharge area, wetlands, and river corridor protection ordinances in addition to a water supply watershed protection plan in its Unified Land Development Code (Chapter 3: Protection of Natural Resources and Features). These are in accordance with the Part V Environmental Planning Criteria jointly issued by the Georgia Department of Community Affairs and the EPD.

- There is no formal Greenspace designation, but the Unified Land Development Code (ULDC) does contain a provision for a “Conservation Subdivision – (CS) zoning district” (Tom Burgess). So far, no one has applied for a zoning change to this designation, and no money has been allocated to purchase greenspace set-asides.

City of Calhoun Ordinances and Management Activities.

- Local Issuing Authority for erosion and sedimentation control for land disturbing activities. The building inspector is in charge for the issuing of the permits and compliance with them.
- There are no riparian buffer requirements beyond the required 25 feet.
- The City of Calhoun WWTP is in compliance with the EPA’s NPDES requirements for review and maintenance of wastewater treatment plants. The plant has recently been completely overhauled, expanding its capacity far beyond the maximum loads it currently processes.
- A steep slope ordinance was adopted in 2008.
- Has no formal greenspace designations, but the city has purchased 58 acres for recreational purposes off of McDaniel Station Rd. alongside the Oothkalooga Creek before it flows into the Oostanaula.

Chattahoochee National Forest Management Measures

- The National Forest Service and its Chattahoochee National Forest has a Watershed Management Area designated for the Upper Oostanaula River, including part of this segment. Approximately 11% 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 the National Forest land: Natural Areas with few open roads (4.I); Areas Managed to Restore/Maintain Old Growth Characteristics (6.B); Dispersed Recreation Areas (7.E.1); Dispersed Recreation Areas with Vegetation Management (7.E.2); and Management, Maintenance & Restoration of Plant Associations (9.H). 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 & 4-9, Land & Resource...).

Watershed Group

- The New Echota River Alliance is an environmental advocacy and outreach nonprofit organization that focuses on the part of the Coosa River Basin that falls within Gordon County. It is a charter organization of the Coosa River Basin Initiative with whom it forms the Upper Coosa Riverkeeper. It conducts river cleanups and public issues education water issues along with coordinating the monitoring of Gordon County waterways.

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 were no BMP assurance exams for forestry operations in Gordon County, as there were no complaints to generate such a required inspection and examination. Gordon County falls in the GFC District 1 (Rome).

Agricultural Conservation Projects

- EQIP: An NRCS program, it is used to help farmers offset the costs of implementing agricultural BMPs targeted to improve water quality. These contracts can last up to 5 years and can include technical expertise along with financial assistance. Along the Oostanaula segment cross fences, water troughs, heavy use areas, and waste storage facilities are the most widely implemented BMPs.
- CCRP: An NRCS program, it is used to help farmers offset the cost of safeguarding environmentally sensitive land, particularly protecting watersheds and wildlife habitats with riparian buffers and other Best Management Practices (BMPs). The farmer is financially with up to a 90% funding using a patch work of funding that exceeds the normal maximum 50% cost share. So usually, the agricultural producer has to only front 10% out-of-pocket expense. Plus, the contracted party gets a rental payment based on a number of factors including soil quality, as this is a type of conservation easement. The contract includes technical expertise along with financial assistance. The contract lasts for ten to fifteen years. During that time, the farmer is responsible for the maintenance of the conservation measures and the NRCS periodically inspects them to ensure their effectiveness. Typically in the Northwest Georgia area, these measures are mostly cattle exclusion from creeks using fences and riparian buffer establishment, as was implemented along the Oostanaula River. As this segment of the Oostanaula is just a portion of the entire Oostanaula segment in Gordon County, it is unknown where on the River these projects were implemented. According to Georgia Statistics, there is 112.6 acres in conservation reserve in Gordon County as of 2009.

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

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)
Cross Fences	USDA NRCS/ Contract-bound Farmer	A subdivision of larger pastures that in conjunction with prescribed grazing reduces overgrazing and the subsequent erosion and runoff. Not directly recommended for Fecal Coliform but can reduce it by reducing runoff.	EQIP	Agricultural Runoff from overgrazing and Erosion		
Water Troughs (NRCS #614)	USDA NRCS/ Contract-bound Farmer	An alternative watering source used to provide livestock with a water supply where needed. Prevents direct deposit of waste into water.	EQIP	Agricultural Runoff: Livestock operations		1 ²
Heavy Use Areas Protection (NRCS # 561)	USDA NRCS/ Contract-bound Farmer	Involves the establishment of vegetation and/or the installation of erosion prevention materials that protect areas where heavy traffic is expected. Not recommended directly for FC, but can reduce the runoff that FC can travel along with.	EQIP	Agricultural Runoff: Livestock operations		1 ²
Waste Storage Facilities (NRCS # 313)	USDA NRCS/ Contract-bound Farmer	A storage facility constructed to temporarily store waste, wastewater and contaminated runoff as part of an agricultural waste management system. Reduces fecal coliform by up to 96% when waste is held for 2 weeks. (Georgia BMP Manual %)	EQIP	Agricultural Runoff: Livestock & poultry operations		3-5: Depending on GA rating vs. NRCS rating
Cattle Exclusion from creek w/ Fences (NRCS # 472)	USDA FSA & NRCS	Barriers installed to limit animal, human and wildlife entry into specified areas and water sources; they can limit the amount of fecal matter from these sources that directly get into the water.	CCRP – USDA Farm Bill	Agricultural Runoff: Wildlife and livestock feces		Up to 5 ¹ 1 to 3 ²
Riparian Forest Buffers (NRCS # 391; CRP # CP-22)	USDA – FSA & NRCS	Part of the same projects that use the above stream fencing, this is the establishment of primarily trees and/or shrubs adjacent to water bodies to protect water quality, provide wildlife habitats and to stabilize stream banks and channels. These buffers are at least 35 feet wide from the top of the bank.	CCRP – USDA Farm Bill	Agricultural Runoff: Wildlife and livestock feces		1-5 ²

Sources: 1: Best Management Practices for Georgia Agriculture. The Georgia Soil and Water Conservation Commission;
2: NRCS National Conservation Practices Standards (NHCP): Conservation Practice Information Sheets.

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	9	Cross Fences Water Troughs Heavy Use Areas Waste Storage Facilities Riparian Forest Buffers Cattle Exclusion from creek w/ Fences	N/A	If these BMPs are judged to be inadequate by local stakeholders, then modifications based on new monitoring and/or assessments can be made.
Failing Septic Systems	9		N/A	N/A
Wildlife	5		N/A	N/A
Urban Runoff	3		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 and Enhanced	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; City of Calhoun Sewer Officials; and concerned citizens.	Enhanced from existing Environmental Health outreach with their pamphlets. Possibly new with 319 (h) grant program.	Various	Failing 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)
Coosa River Basin Initiative	Train educators and their students in QA/QC Adopt-a-Stream monitoring protocols; conduct environmental education presentations in schools.	Gordon County and City of Calhoun School Teachers and Pupils.	October 2009
New Echota River Alliance	General outreach concerning water issues in Gordon County	General Public	Ongoing.
UGA Cooperative Extension Service – Gordon County Agent Beth Watson	Participate with local school children in clean up of local rivers and parks during Rivers Alive, a state wide event held annually	Gordon County and City School Children	Ongoing
UGA Cooperative Extension Service – Gordon County Agent Beth Watson	Instruct kids about water quality issues with UGA supplied environmental education module, “Poisoned Pump.”	5 th Graders in Gordon County and City Schools	Ongoing
UGA Cooperative Extension Service – Gordon County Agent Beth Watson	Instruct kids about water quality and conservation with UGA supplied environmental education module, “Drought and Georgia Curriculum.”	6 th Graders in Gordon County and City Schools	Ongoing
Gordon 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.	Gordon 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.
Cross Fences				X	
Water Troughs				X	
Heavy Use Areas				X	
Waste Storage Facilities				X	
Riparian Forest Buffers				X	
Cattle Exclusion from creek w/ Fences				X	
General Outreach to Public		NERA		X	
Adopt-a-Stream Training		CRBI/NERA			X
Rivers Alive Clean-up		UGA Cooperative Extension Service/ 4-H		X	
5 th and 6 th Grade Environmental Education		UGA Cooperative Extension Service/ 4-H		X	
Septic Tank Maintenance Education		Environmental Health Departments of Gordon County		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.

On April 1, 2009 an initial TMDL Planning Meeting held at the Northwest Georgia Regional Commission. The mailing list for the first meeting went out to local government officials in cities and counties that had impaired streams in their watershed. For the initial meeting 62 people were invited and 24 attended. Officials from the City of Calhoun represented Oostanaula River interests. Chris Faulkner, Environmental Outreach Coordinator from the Georgia Environmental Protection Department gave a PowerPoint presentation that explained the TMDL process and how they are developed, as well as how the list of the 303 (d)/305 (b) impaired streams is developed. He then took multiple questions. At the end of the meeting it was determined that the people in attendance would compile a list of people that they would like to act as stakeholders for the impaired streams in their particular watershed. This was ultimately unproductive, as we got very few responses.

On May 28th, 2009 a TMDL Implementation meeting was held in Calhoun, with a presentation shown by employees of the NWGRC on what fecal coliform, a TMDL, and a TMDL Implementation Plan are. Also covered during the presentation was what is asked of the stakeholders of the waterways and the potential impacts of the TMDL plan upon different stakeholders and the potential sources of fecal coliform pollution.

Doug Cabe of the Limestone Valley RC & D gave a presentation on a 319(h) grant program his organization along with the Conasauga River Alliance that addressed fixing failing septic systems in the Conasauga River Basin.

Machelle Simmons of NRCS described the many programs that the USDA offers to implement agricultural BMPs dealing with water pollution and habitat conservation.

The floor was opened up to questions and there was a discussion that involved almost every stakeholder present. Questions were asked concerning using more monitoring to narrow down the source of the pollutant; chicken litter used as fertilizer and its relationship to the fecal coliform contamination; the presence or decrease of agriculture in Gordon and the possible decrease of it as a source of pollution; peculiar smells coming from what Joe Cook of CRBI thought was the Calhoun wastewater LAS (Calhoun says they aren't the source of the smell); how old is an old septic tank (20+ yrs.); and how long this TMDL process has been going on and how long will it continue.

The Oostanaula River came up in the conversation more than once of how much its biological health – its fish and microvertebrate populations – have bounced back in the past 4 decades. This was concurred by all present. Joe Cook of CRBI mentioned during one of his floats down the river he smelled what he thought to be human fecal matter and he thought it was coming from Calhoun's nearby LAS. Jerry Crawford, the Water and Sewer Director for the City of Calhoun Utilities, said the unpleasant must have come from agricultural sources, as their LAS only discharges already bio-matter filtered water. He said even inside the wastewater treatment plant you only catch a faint musty smell of the sewage being treated there. Other matters not related to the fecal contamination at hand were also raised about the Oostanaula, such as the river bank erosion due to the dam releases upstream at Carter's Lake and cattle degrading the bank.

The second public TMDL meeting for Bartow and Gordon Counties was held in Adairsville on August 6, 2009. This meeting was open house format because all of the attendees had either been at a previous TMDL meeting or had a good understanding of the TMDL program. The attendees were asked about BMPs in the area and if there were any new BMPs or outreach activities that they would like to see in the watersheds. One farmer stated the he along with many other farmers would be in favor of BMPs; however many haven't learned about them. Sources of non-point pollution were discussed. It was also noted that the real estate bust had a silver lining of reducing the runoff into waterways. Then a discussion began regarding that fecal coliform counts increase significantly during storm events, which is backed by recent sampling done on a Bartow County creek. The increased funds for year 2010 319 grant projects were discussed and it was mentioned that this funding could be used to purchase monitoring equipment and to start an Adopt-a-Stream group in Bartow or Gordon County, or to address leaking septic tanks with either records inventory or an aerial infrared photography survey. Also, the possibility of teaming up with the New Echota Rivers Alliance in Gordon County or the Coosa River Basin Initiative in Bartow County to do water monitoring through their Adopt-a-Stream programs. This was well received by many present. Cattle intrusion into waterways was described as widespread, especially on the Oostanaula River. Mohawk Industries described their main current focus as controlling stormwater, along with conducting environmental community service. The possibility of tributaries of these impaired streams contributing to the bacterial problem was addressed by the EPD representative.

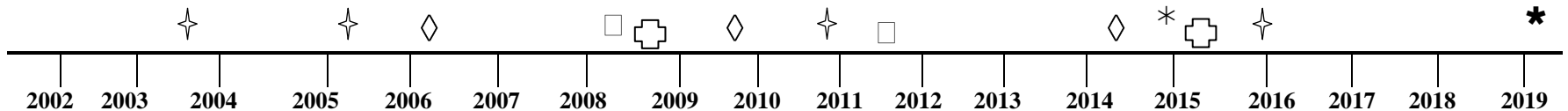
Table 9. STAKEHOLDER ADVISORY GROUP MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Larry Pratt/ City of Adairsville	116 Public Square	Adairsville	GA	30103	(770) 773-2605	lvp2853@bellsouth.net
Wade Wilson/City of Adairsville, Wilson Engineering	105 S. Main St.	Adairsville	GA	30103	(770) 773-1717	wade_wilson@comcast.net
Christy Blair/GCHD, Environmental Health-Gordon County	318 N. River St.	Calhoun	GA	30701	(706) 624-1440	chblair@dhr.state.ga.us
Mary Griffin	3086 Martha Berry Hwy.	Rome	GA	30165	(770) 720-3525	mgriffin@gfc.state.ga.us
Machelle Simmons/ USDA NRCS	717 South Wall St. Suite 1	Calhoun	GA	30701	(706) 629-2582 x 3	machelle.simmons@ga.usda.gov
Doug Cabe/ Limestone Valley RC & D	125 Redbud Rd. Suite 7	Calhoun	GA	30701	(706) 625-7044	doug.cabe@ga.usda.gov
Ted Collins/ Limestone Valley RC & D	8363 Fairmount Hwy.	Fairmount	GA	30319	(706) 629-8222	nogaapp@bellsouth.net
Aimee Abernathy/ City of Fairmount	2265 US Hwy. 411	Fairmount	GA	30319	(706) 337-5306	cityoffairmount@comcast.net
Michael Fowler/Gordon County	200 South Wall St.	Calhoun	GA	30701	(706) 629-0505	mfowler@gordoncounty.org

Jerry Crawford/City of Calhoun	700 West Line St.	Calhoun	GA	30701	(706) 602-6078	jcrawford@calnet-ga.net
Erica Stewart/Mohawk Industries	405 Virgil Dr.	Dalton	GA	30720	(706) 428-8133	erica_stewart@mohawkind.com
Randy Waskul/Mohawk					(706) 428-8147	randy_waskul@mohawkind.com
Chuck Patterson/Mannington Commercial Carpets	1844 US Hwy. 41 SE	Calhoun	GA	30701	(706) 602-6381	chuckp@mannington.com
Robert Darnell	813 Plainville Rd.	Adairsville	GA	30103	(770) 773-6181	
Sam Payne	P.O. Box 246	Calhoun	GA	30703	(678) 986-6366	paynefrm@bellsouth.net
Millard Payne					678) 986-6366/(770) 608-9909	paynefrm@bellsouth.net
Arthur Bowman	121 Bowman Rd.	Calhoun	GA	30701	(706) 629-6118	
Joe Powell	225 Thelma Rd. SW	Calhoun	GA	30701	(706) 629-1840	
Joe Cook/Upper Coosa Riverkeeper	408 Broad Street	Rome	GA	30161	(706) 232-2724	jscook@coosa.org
Dan McBee/NERA	1721 Pine Chapel Rd.	Calhoun	GA	30701	(706) 263-4002	McBee.Dan3@gmail.com

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

Prepared By:	Ben Robinson and Jonathan Bridges		
Agency:	Northwest Georgia Regional Commission		
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City:	Rome	ST: GA	ZIP: 30162-1793
E-mail:	brobinson@nwgrc.org; jbridges@nwgrc.org		
Date Submitted to EPD:	9-30-2009	Revision:	01

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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.

NAME/ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Larry Pratt/ City of Adairsville	116 Public Square	Adairsville	GA	30103	(770) 773-2605	lvp2853@bellsouth.net
Wade Wilson/City of Adairsville, Wilson Engineering	105 S. Main St.	Adairsville	GA	30103	(770) 773-1717	wade_wilson@comcast.net
Christy Blair/GCHD, Environmental Health-Gordon County	318 N. River St.	Calhoun	GA	30701	(706) 624-1440	chblair@dhr.state.ga.us
Mary Griffin	3086 Martha Berry Hwy.	Rome	GA	30165	(770) 720-3525	mgriffin@gfc.state.ga.us
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Doug Cabe/ Limestone Valley RC & D	125 Redbud Rd. Suite 7	Calhoun	GA	30701	(706) 625-7044	doug.cabe@ga.usda.gov
Ted Collins/ Limestone Valley RC & D	8363 Fairmount Hwy.	Fairmount	GA	30319	(706) 629-8222	nogaapp@bellsouth.net
Aimee Abernathy/ City of Fairmount	2265 US Hwy. 411	Fairmount	GA	30319	(706) 337-5306	cityoffairmount@comcast.net
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Jerry Crawford/City of Calhoun	700 West Line St.	Calhoun	GA	30701	(706) 602-6078	jcrawford@calnet-ga.net
Erica Stewart/ Mohawk Industries	405 Virgil Dr.	Dalton	GA	30720	(706) 428-8133	erica_stewart@mohawkind.com
Randy Waskul/Mohawk					(706) 428-8147	randy_waskul@mohawkind.com
Chuck Patterson/ Mannington Commercial Carpets	1844 US Hwy. 41 SE	Calhoun	GA	30701	(706) 602-6381	chuckp@mannington.com
Robert Darnell/Farmer	813 Plainville Rd.	Adairsville	GA	30103	(770) 773-6181	
Sam Payne/Farmer	P.O. Box 246	Calhoun	GA	30703	(678) 986-6366	paynefrm@bellsouth.net

Millard Payne/Payne Farm					(678) 986-6366 (770) 608-9909	paynefrm@bellsouth.net
Arthur Bowman/Farmer	121 Bowman Rd.	Calhoun	GA	30701	(706) 629-6118	
Joe Powell/ Farmer	225 Thelma Rd. SW	Calhoun	GA	30701	(706) 629-1840	
Joe Cook/Upper Coosa Riverkeeper	408 Broad Street	Rome	GA	30161	(706) 232-2724	jcook@coosa.org
Dan McBee/NERA	1721 Pine Chapel Rd.	Calhoun	GA	30701	(706) 263-4002	McBee.Dan3@gmail.com

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 plan

APPENDIX C.

VISUAL FIELD SURVEYS, NOTES, PHOTOGRAPHS, AND MAPS.

The visual field survey and land use verification of the Oostanaula River was conducted by the NWGRC on a rainy day: March 31, 2009. With the precipitation, the Oostanaula River was flowing strong, high, and muddy. The land use was fairly in line with the land use listed in the TMDL study document *Total Maximum Daily Load Evaluation for Twenty-Nine Stream Segments in the Coosa River Basin for Fecal Coliform*. There were no immediate sources of fecal coliform contamination observed, but potential sources such as agricultural runoff were seen. The road crossings visited were: GA Hwy. 41 in Resaca, GA Hwy. 225 (at Coosawattee River just above the Oostanaula), and at GA Hwy. 136 Connector in Calhoun.



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

www.georgiastats.uga.edu

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 Twenty-Nine Stream Segments in the Coosa 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.

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

Land and Resource Management Plan: Chattahoochee-Oconee National Forests. January 2004. USDA National Forest Service: Southern Region. Management Bulletin R8-MB 113 A. Accessed at <http://www.fs.fed.us/conf/200401-plan/index.htm>.

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.

Northwest Georgia Water Quality Improvement and Implementation Plan: Data Summary Report – Year 1 Events. April 24, 2009. MacTec Engineering and Consulting, Inc. and Brown and Caldwell. Prepared for the NWGRWRP and the U.S. Army COE. Project # 6110-08-0325

<http://www.newechotarivers.org/>.

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

Email Correspondence with Mabelle Simmons, USDA NRCS Agent, Bartow & Gordon Counties: 7/13-7/14/2009. Email Correspondence with Glenn Forester, USDA FSA Agent, Whitfield, Gordon, and Bartow Counties: 7/15 -7/16 & 7/21/2009.

Email Correspondence with Tom Burgess, Director of Gordon County Department of Building, Planning, and Development: 7/21/2009

Email Correspondence with Eddie Peterson, Manager, City of Calhoun: 6/1/09.

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

<http://maps.google.com>

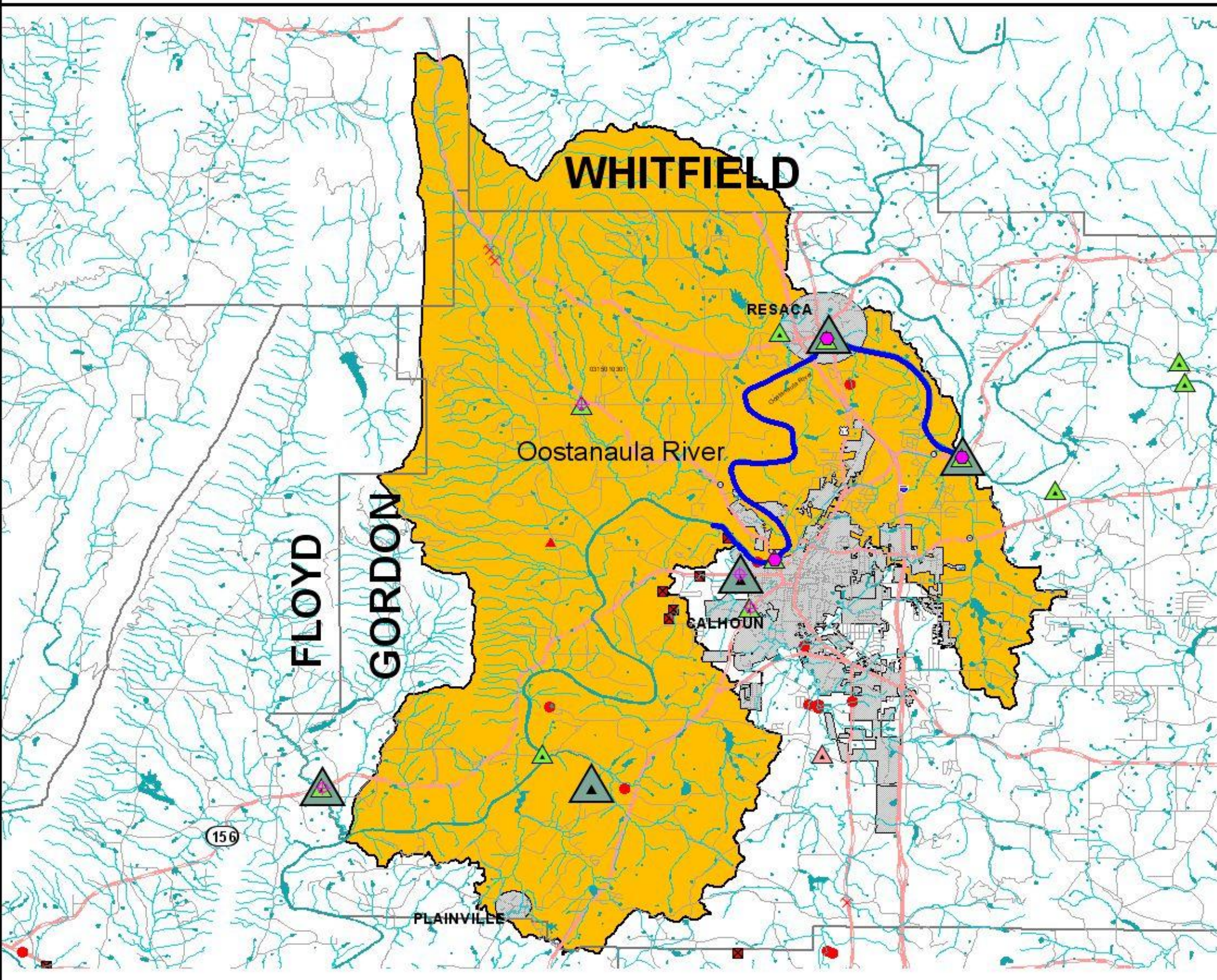
Best Management Practices for Georgia Agriculture: conservation practices to protect surface water Quality. March 2007. The Georgia Soil and Water Conservation Commission.

NRCS National Conservation Practices Standards (NHCP): Conservation Practice Information Sheets. Accessed at <http://www.nrcs.usda.gov/technical/standards/nhcp.html>

Gordon County Comprehensive Plan 2007-2027: Community Assessment prepared for Gordon County, City of Fairmount, City of Plainville, City of Ranger, Town of Resaca. MACTEC Engineering and Consulting, Inc., Project 6311-05-0067. Accessed at www.georgiaplanning.com.

City of Calhoun Comprehensive Plan 2006-2026: Community Assessment. October 18, 2006. Project 6311-05-0068. MacTec Engineering and Consulting, Inc. Accessed at www.georgiaplanning.com.

Phone Conversation with Beth Watson, CEA for Gordon County. 7/16/2009.



Tier 2 TMDL Implementation Plan
and
Extended Revisions

**Oostanaula River
Oostanaula Watershed
HUC10# 0315010301**

Conasauga/Coosawatee
to
Oothkalooga Creek



- 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