

**STATE OF GEORGIA**

**TIER 2 TMDL Implementation Plan (Revision # 01)**

Segment Name: Oothkalooga Creek Date: 9/30/2009

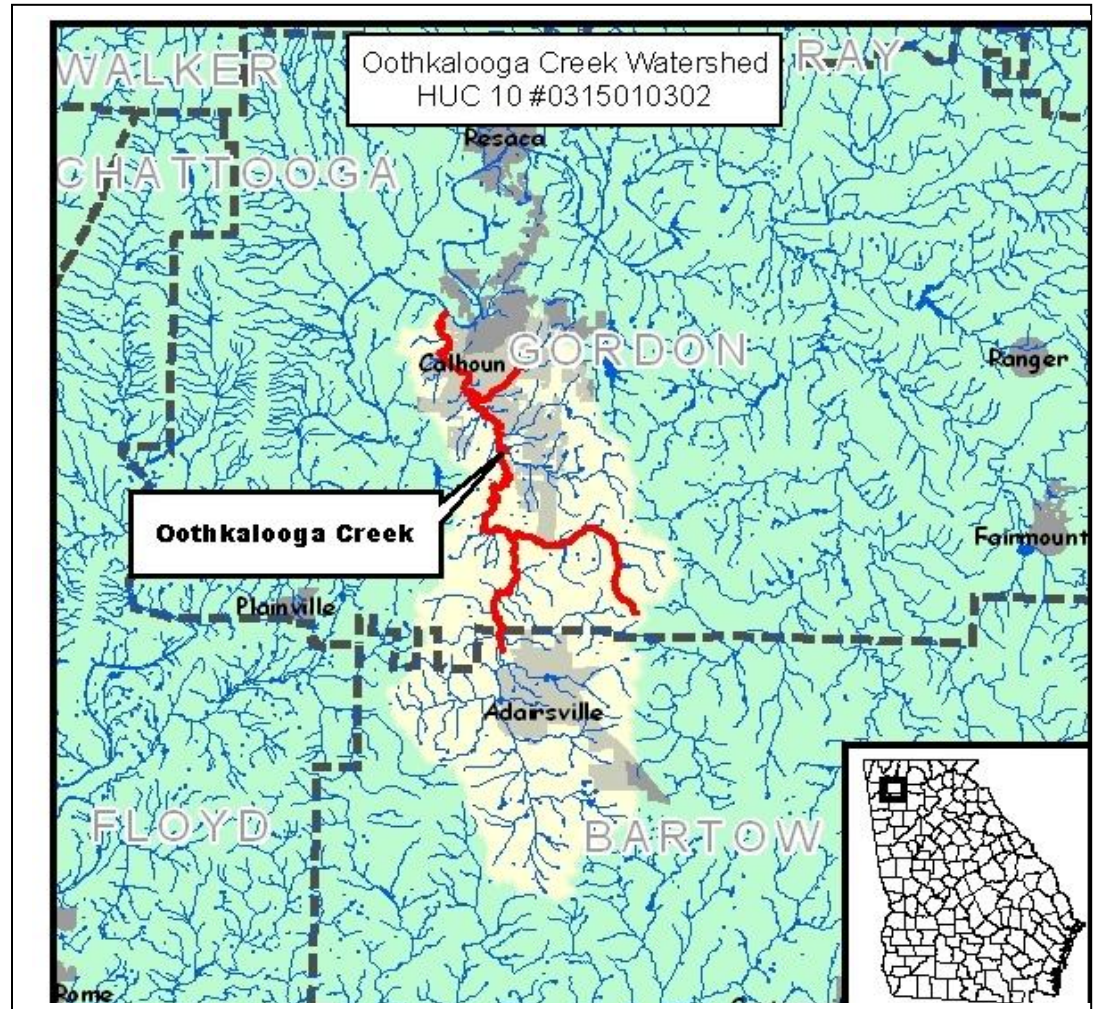
River Basin: Coosa River Basin

Local Watershed Governments: Gordon and Bartow Counties,  
Cities of Adairsville, Calhoun

**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
Oothkalooga Creek	U/S Bartow Co. Line to Oostanaula River	14 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 HUC 10 Watershed Information**

The 0315010302 HUC 10 Watershed drains an area of approximately 41,737 acres or 65 square miles. It stretches from the south in Bartow County to the north, containing much of the City of Calhoun in Gordon County. It shares its northern and western border with the 0315010301 HUC 10 watershed. We see it is a mostly forested and agricultural area.

**Bartow County's Predominant Land Use**

Forestland: % of Total/ Acres	Land in Farms: % of Total Land/ Acres	Harvested Cropland: % of Total Land/Acres
65.2 % / 191,800	22.1%/ 65,106	5.3% / 15,565

**Gordon Count's Predominant Land Use**

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. 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 WWTPs – Oothkalooga Creek**

Facility Name	Receiving Waterway	Type of Facility	Discharge Flow (MGD)	Permit Number
Omnova Solutions Inc.	Oothkalooga Creek	Industrial	0	GA0000329
Adairsville - North WPCP	Oothkalooga Creek	Municipal	1	GA0046035
Adairsville - South WPCP	Oothkalooga Creek	Municipal	.5	GA0032832

### 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. A stakeholder at one of the meetings commented upon the large population of geese at a reservoir adjacent to Oothkalooga Creek. 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 and Bartow County.

**Livestock population by County (Bartow & 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
<b>Bartow</b>	14,500	8,000	0	700	4,000	200	1,800	100	150
<b>Gordon</b>	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 Bartow and Gordon counties that may 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, by type (thousands)**

County	Breeder Pullet Unit	Broiler Chickens	Hatching Layers	Table Layers	Totals
<b>Bartow</b>	144	5,850	220	0	6,214
<b>Gordon</b>	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 Oothkalooga Creek watershed is mostly forested and agricultural, which is representative of Bartow and Gordon counties land use as a whole. There are difference between the two counties demographics, as shown in the below chart, with Bartow county having a larger population, higher density, and a majority of people living in urban areas. In contrast, Gordon County is less populated, less dense, and more rurally populated. Though the watershed almost completely falls within Gordon County, urban development is still a potential source for fecal coliform contamination. Even small low- or high-density developments can have an adverse impact if there is a systemic problem. Also, since Bartow county lies upstream of the segment it remains a potential source.

**Urban/Rural Demographics of Bartow & Gordon Counties**

<b>County</b>	<b>County Pop., 2000 Census</b>	<b>Density/mi<sup>2</sup>, 2007</b>	<b>Population Projection for 2010<sup>1</sup></b>	<b>Density/mi<sup>2</sup> Projection in 2010</b>	<b>% of pop. in rural land, 2000</b>	<b>% of pop. in urban area, 2000</b>
<b>Bartow</b>	76,019	202.1	110,819	217.6	41.2	58.8
<b>Gordon</b>	44,104	146.7	55,506	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. Most of the residences of the headwaters of the Oothkalooga and the residences up to the Gordon County Line get sewer service from the City of Adairsville, so that largely limits the source of failed septic tanks in that area. Many of the residences surrounding the segment in within Calhoun City limits are on sewer, though coverage isn't citywide (Georgia DCA, <http://www.georgiaplanning.com/planners/SDmaps>; map from Jerry Crawford, Calhoun Sewer and Water Director).

There has been continued urban development in Bartow and Gordon Counties, as there has been along the I-75 corridors. 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, as is the inspection of repairs. The older septic tanks are more likely candidates to fail due to age, increased probability of irregular maintenance such as pump-outs, and their installation under a less stringent regulatory system. Those installed pre-1984 prior to which professional contracting was not 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, and 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 2,047 installations of septic tanks and 978 repairs in Gordon County and 2,692 installations and 1,323 repairs in Bartow County (Northwest Georgia EH). These numbers give a sense of how many new systems are in Gordon and Bartow Counties. But they don't tell the total number of septic tanks, and which ones are prone to failure in the Oothkalooga Creek 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. But septic failures as a whole in the region are a chronic problem

Urban runoff is a possible source as, as Bartow County's stormwater is covered under the NPDES Permit Program. Some stormwater is covered under this permitting, as 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. Bartow County is listed as a MS4 Phase II, a category for smaller municipalities.

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 three landfills in the HUC 10, two of which are upstream of the creek segment and another one near it's confluence with the Oostanaula.

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.

## **Water Quality Planning and Management in the HUC 10**

### **Bartow County Measures and Plans**

- A Local Issuing Authority for erosion & sedimentation permitting of land-disturbing 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. The GSWCC also has updated requirements for E&SC plans to be submitted with each project. Certification requirements apply to all such persons in Bartow Counties. Certification is offered through the Rolling Hills Regional Conservation and Development Council (RC & D).
- The Bartow County Zoning Ordinances require a stream buffer of a minimum of fifty feet on each side. Access is allowed to the stream for livestock watering but must be constructed with Best Management Practices (BMPs) to minimize pollution and sedimentation to the stream.

### **Stormwater Management**

- Bartow County has an NPDES-permitted Small Municipal Separate Storm Sewer System (MS4) and is subject to the Phase II MS4 Stormwater Rules. These extended Phase II permitting rules include six parameters that deal with water quality including 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Runoff Control; 5. Post-Construction Runoff Control; 6. Pollution Prevention and Good Housekeeping.
- Industrial Stormwater Discharge NPDES Permit is required for all manufacturers that discharge stormwater. Construct Stormwater Discharge NPDES Permit is required for land disturbing activities over one acre. This permit requires implementation of erosion, sedimentation and pollution control plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.

### **Metropolitan North Georgia Water Planning District Model Ordinances**

Bartow County is a member of the Metropolitan North Georgia Water Planning District, which was created by the Georgia General Assembly to establish policy, create plans and promote intergovernmental coordination of all water issues in the area from a regional perspective. The county is included in the Metropolitan Water Planning District's Watershed Management Plan, which includes six protection strategy areas:

- Point Source Management
- Stormwater Management
- Total Maximum Daily Loads (TMDLs)
- Watershed Improvement
- Intergovernmental Coordination
- Long-term Monitoring

The MNGWPD Watershed Management Plan required each member to adopt these six model ordinances, as Bartow has done.

- Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Floodplain Management/Flood Damage Prevention Ordinance (in review)
- Conservation Subdivision/Open Space Development Ordinance
- Illicit Discharge and Illegal Connection Ordinance
- Litter Control Ordinance
- Stream Buffer Ordinance

### **Gordon County Measures and Plans**

- Issues its own Erosion & Sedimentation Control permits through its building inspector who also is in charge of compliance.
- 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.
- Has a groundwater recharge area, wetlands, and a 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 Measures and Plans**

- 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 Oothkalooga empties into the Oostanaula below these water intake points.
- Erosion & Sedimentation Controls: issues its own permits through its building inspector, who also runs compliance with the measure.

**Region-wide Watershed Assessments and Plans**

- 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 (USACE). 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 USACE. This study has four study sites in the City of Calhoun, one of them directly on this listed segment of the Oothkalooga Creek. Another site is located on Lynn Creek, a tributary of this Oothkalooga Creek segment.

**Individual Impaired Segment Information (HUC 12# 031501030202)**

The Oothkalooga has its headwaters in a small pond, reservoir south of the City of Adairsville and flows south to north. This individual segment doesn't start right at the Bartow County line as is stated in the location description but just inside Bartow County, north of Adairsville and just north of Woody Rd. The segment runs due north for 14 miles through mostly forested and agricultural land – a drainage area of approximately 41,048 acres- before emptying out into the Oostanaula in western Calhoun. The drainage area also contains a significant portion of parkland and other urban grasses. There were also a number of industrial businesses alongside the I-75/US-41 Highway Corridor which parallels the creek. These statistical findings, shown below, were largely verified during the land use verification survey and with the use of satellite imagery.

<b>Land Use for the Oothkalooga Creek Sub-Watershed (HUC 12 # 031501030202)</b>		
	<b>% of Land Use</b>	<b>Acres</b>
<b>Open Water</b>	.4	165.7
<b>Low Intensity Residential</b>	5.2	2,117.1
<b>High Intensity Residential</b>	2	824.8
<b>High Intensity Commercial, Industry, Transportation</b>	1.7	688.3
<b>Bare Rock, Sand, Clay</b>	.2	100.74
<b>Quarries, Strip Mines, Gravel Pits</b>	.7	285.1
<b>Forest</b>	49.5	2,0313.5
<b>Row Crops</b>	24.9	1,0214.2
<b>Pasture, Hay</b>	2.6	1,051.2
<b>Other Grasses (Urban, recreational e.g. parks, lawns</b>	12.6	5,154.3
<b>Woody Wetlands</b>	.3	132.5
<b>Emergent Herbaceous Wetlands</b>	.003	1.11
<b>Totals</b>	<b>100</b>	<b>41,048.63</b>

Source: GAEPD publication

"Total Maximum Daily Load Evaluation for Twenty-Nine Stream Segments in the Coosa River Basin for Fecal Coliform." (2009)

**Major BMP Program in Sub-Watershed**

- Environmental Quality Incentives Program (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 smaller part of the Oothkalooga segment near the headwaters there have been a Pasture Planting BMP put in place.

**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 Gordon County forestry.

**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<sub>sw</sub>) 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 <sub>sw</sub>	LA	TMDL
Oothkalooga Creek	U/S Bartow Co. Line to Oostanaula River	FC	1.58E+11	0	9.82E+12	1.11E+13

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	64%
		Agricultural Runoff	
		Wildlife	
		Failing Septic Systems	

#### 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.

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Based on land use data plus field surveys and other tools, 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.

At just over 25% of the sub-watershed's land use, agriculture is a significant potential contributor to the bacterial levels in the creek – whether through runoff from livestock or poultry operations or runoff from the use of those operations' manure as fertilizer on crop land. There are not as many chicken houses in the immediate watershed as in other Gordon County creeks – approximately 14 that are nearby in adjacent land and then 19 whose potential runoff could either possibly flow to the east to the Oothkalooga or to the west into the Oostanaula River. Livestock are also a potential source. There was one spot on the creek where cattle access was possible with an unfenced creek and no buffer. This is not to definitively say these poultry & livestock operations are causing most of the problem, but to note their presence and their potential to contribute to elevated fecal coliform levels.

Urban runoff remains an issue since the creek runs between two urban areas: the cities of Adairsville and Calhoun, with Calhoun being the larger of the two. And the span between these two cities is not without urban impact either: along the US 41/ I-75 corridor, there is also a significant degree of industrial and commercial development such as the Tom B. David Field Airport. All of these impermeable surfaces of asphalt and factory/warehouse roofs can possibly lead to a stormwater runoff into the creek.

Failing septic systems can also be a problem in the area, though much if not most of the watershed is covered by sewer from either the City of Adairsville or the City of Calhoun. Septic tanks are in the area though, and they could contribute a portion to the contamination as they can flow into surface water or seep into the groundwater. 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 usually promptly recognized and fixed by trained installers under the oversight of the Environmental Health Department. There is also the remote but significant possibility that failing septic systems are not 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.

Wildlife remains a usual suspect in this sub-watershed, even though it has a higher degree of urban and commercial uses than some comparable waterways. It is almost 50% forested and 25% agricultural - both land uses very conducive to wildlife habitation and it has a statistically significant area of low-intensity residential, which is also known to be used as a habitat for wildlife. Deer are unlikely to contribute much to the problem since they do not spend as much time in the water as other creatures, and it is not in their normal behavior to leave droppings in creeks. On the other

hand, waterfowl and other water-friendly animals like raccoons are more likely contributors. A local stakeholder familiar with the watershed stated that there is a large geese population on a reservoir adjacent to the Oothkalooga Creek, right where the EPD pulled the high fecal samples.

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:

<b>Rating A:</b> Rating Chart to Estimate Geographic Extent of the Source or Cause in the Contributing Watershed	<b>Rating B:</b> Rating Chart to Estimate Portion of Contribution from the Source to the Pollutant Load Causing the Impairment	<b>Rating</b>
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		3		3	9
Agricultural Runoff		1		3	3
Wildlife		3		1	3
Failing Septic Systems		.5		3	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:

**Bartow County Ordinances**

- Local Issuing Authorities for erosion & sedimentation permitting of land-disturbing 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. The GSWCC also has updated requirements for E&SC plans to be submitted with each project. Certification requirements apply to all such persons in Bartow Counties. Certification is offered through the Rolling Hills Regional Conservation and Development Council (RC & D)
- The Zoning Ordinances require a stream buffer of a minimum of fifty feet on each side. Access is allowed to the stream for livestock watering but must be constructed with Best Management Practices (BMPs) to minimize pollution and sedimentation to the stream.

### **Stormwater Management**

- Bartow County has an NPDES-permitted Small Municipal Separate Storm Sewer System (MS4) and is subject to the Phase II MS4 Stormwater Rules. These extended Phase II permitting rules include six parameters that deal with water quality including 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Runoff Control; 5. Post-Construction Runoff Control; 6. Pollution Prevention and Good Housekeeping.
- Industrial Stormwater Discharge NPDES Permit is required for all manufacturers that discharge stormwater. Construct Stormwater Discharge NPDES Permit is required for land disturbing activities over one acre. This permit requires implementation of erosion, sedimentation and pollution control plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.

### **Metropolitan North Georgia Water Planning District Model Ordinances**

**Bartow County** is a member of the Metropolitan North Georgia Water Planning District, which was created by the Georgia General Assembly to establish policy, create plans and promote intergovernmental coordination of all water issues in the area from a regional perspective. The county is included in the Metropolitan Water Planning District's Watershed Management Plan, which includes six protection strategy areas:

- Point Source Management
- Stormwater Management
- Total Maximum Daily Loads (TMDLs)
- Watershed Improvement
- Intergovernmental Coordination
- Long-term Monitoring

The MNGWPD Watershed Management Plan required each member to adopt these six model ordinances:

- Ordinance for Post-Development Stormwater Management for New Development and Redevelopment
- Floodplain Management/Flood Damage Prevention Ordinance (in review)
- Conservation Subdivision/Open Space Development Ordinance
- Illicit Discharge and Illegal Connection Ordinance
- Litter Control Ordinance
- Stream Buffer Ordinance

Bartow has adopted all of the Model Stormwater Management Ordinances that address Post Development Stormwater Management for New Development and Redevelopment, Floodplain Management/Flood Damage Prevention, Conservation Subdivision/ Open Space Development, Illicit Discharge and Illegal Connection, Litter Control, and Stream Buffer Protection.

### **Gordon County Ordinances**

- The Gordon County Soil and Erosion and Sedimentation Control Ordinance (enacted 3-16-2004; Chapter 14) covers generally all land disturbing activity over one acre and mandates the use of BMPs from the “Manual for Erosion and Sediment Control in Georgia’ specified in O.C.G.A. § 12-7-6(b) and decreed by the Georgia Water Quality Control Act (O.C.G.A. § 12-5-30(f))”.
- A riparian buffer requirement over the 25 feet for regular waterways or 50 feet for trout streams required by Georgia is not in place
- Has 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; also respectively found in Article VI,; Article VII; Article IV; and Article V – all enacted 9-15-1998 and part of Chapter 14). These are in voluntary accordance with the Part V. Environmental Planning Criteria jointly issued by the Georgia EPD and the Department of Community Affairs.
- 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.**

- 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.
- 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 increased 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.

### **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. Bartow County had one such complaint and subsequent exam. Both Bartow and Gordon County fall in the GFC District 1 (Rome). Both Bartow and Gordon County fall within 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 smaller part of the Oothkalooga segment near the headwaters in Bartow County there have been a Pasture Planting BMP put in place.

**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 2<sup>nd</sup> Avenue, Suite J, Rome, Georgia 30161-3359, Telephone: 706-295-6131).

<b>BMP Load Reduction Potential Rating Chart</b> (Percent Removal of Pollutant by the BMP)	<b>Rating</b>
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**

<b>BMPs</b> <b>(1)</b>	<b>RESPONSIBILITY</b> <b>(2)</b>	<b>DESCRIPTION OF MEASURES</b> <b>(3)</b>	<b>FUNDING &amp; RESOURCES</b> <b>(4)</b>	<b>IMPAIRMENT SOURCES</b> <b>(5)</b>	<b>DAT E</b> <b>(6)</b>	<b>BMP LRP RATING</b> <b>(7)</b>
Pasture Planting (NRCS # 512)	USDA NRCS/ Contract-bound Farmer	A management strategy that reduces soil erosion and improves water quality by establishing native or introduced forages infields or pastures. Can target FC along with addressing nutrient and erosion concerns.	EQIP	Agricultural Sedimentation and Runoff: Livestock operations		1 to potentially a negative, load increasing impact <sup>2</sup>

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.**

<b>IMPAIRMENT SOURCES (1)</b> (From Table 4)	<b>IMPACT RATING (2)</b> (From Table 4)	<b>APPLICABLE BMPs (3)</b> (From Table 5A)	<b>EVALUATION SUMMARY (4)</b>	<b>ADDITIONAL INFORMATION / ACTIONS NEEDED (5)</b>
Urban Runoff	9	N/A	N/A	N/A
Agricultural Runoff	3	Pasture Planting	N/A	If this BMP implementation is judged by qualified experts & stakeholders to be inadequate, modification based off of targeted water monitoring and/or assessment should be considered
Failing Septic Systems	1.5	N/A	N/A	N/A
Wildlife	3	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:

<b>New or Enhanced BMP Load Reduction Potential Rating Chart</b> (Percent Removal of Pollutant by the BMP)	<b>Rating</b>
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.**

<b>NEW BMPs (1)</b>	<b>RESPONSIBILITY (2)</b>	<b>DESCRIPTION (Identify whether new or enhanced) (3)</b>	<b>FUNDING &amp; RESOURCES (4)</b>	<b>IMPAIRMENT SOURCES (5)</b>	<b>TARGET DATE (6)</b>	<b>NEW BMP LRP RATING (7)</b>
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; City of Adairsville and City of Calhoun 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
Nuisance Geese BMPs	City of Calhoun and City of Adairsville; Gordon County	Explore the possibility of adopting measures like letting underbrush grow up to curtail geese population.	Various	Wildlife Geese	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 (CRBI)/ New Echota River Alliance (NERA)	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	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	Instruct kids about water quality issues with UGA supplied environmental education module, “Poisoned Pump.”	5 <sup>th</sup> Graders in Gordon County and City Schools	Ongoing
UGA Cooperative Extension Service – Gordon County Agent	Instruct kids about water quality and conservation with UGA supplied environmental education module, “Drought and Georgia Curriculum.”	6 <sup>th</sup> Graders in Gordon County and City Schools	Ongoing
Gordon and Bartow 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 and Bartow 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.
Pasture Planting				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 <sup>th</sup> and 6 <sup>th</sup> Grade Environmental Education		UGA Cooperative Extension Service/ 4-H		X	
Septic Tank Education		Environmental Health Departments of Gordon and Bartow Counties		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 to out to local government officials in cities and counties that had impaired streams in their watershed. For the initial meeting 62 people were emailed and 24 attended. Officials from the Cities of Adairsville and Calhoun represented Oothkalooga Creek interests, with only Gordon County missing. 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 the 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.

Oothkalooga Creek came up in reference to how long the sewer lines extended along its watershed, which lies along the US Hwy. 41 corridor. Doug Cabe and Christy Blair said it didn't stretch all the way down to the Bartow County line, while the Jerry Crawford of the city sewer said it did. There were two landowners who have farms on the creek present: Sam Payne and Arthur Bowman. Sam Payne has stated previously that the Oothkalooga creek has progressively appeared much clearer and free of sediment over the decades.

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 implementations 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 mentioned that there are many places in Calhoun that have large populations of Canadian geese- particularly on a reservoir behind the Calhoun Wal-Mart which empties during storms into the Oothkalooga right where it is monitored. It was also stated that along the Oothkalooga the waters are very muddy, possibly due to agriculture. 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, especially on the Oostanula was discussed as was the presence of a large cattle feedlot that lack BMPs in Oothkalooga's upper section in Bartow County. 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.

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**

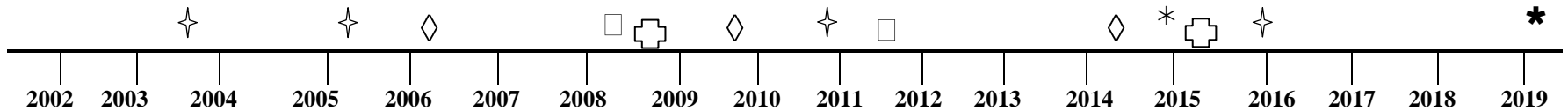
NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Larry Pratt/ City of Adairsville	116 Public Square	Adairsville	GA	30103	(770) 773-2605	lvp2853@bellsouth.net
Wade Wilson/City of Adairsville, Wilson Engineering	105 S. Main St.	Adairsville	GA	30103	(770) 773-1717	wade_wilson@comcast.net
Christy Blair/GCHD, 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

Plan for Oothkalooga Creek  
HUC 10 # 0315010302

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	jcook@coosa.org
Dan McBee/NERA	1721 Pine Chapel Rd.	Calhoun	GA	30701	(706) 263-4002	<a href="mailto:McBee.Dan3@gmail.com">McBee.Dan3@gmail.com</a>
Catherin Fox/Fox Environmental					(404) 441-7568	<a href="mailto:cfox@foxenvironmental.net">cfox@foxenvironmental.net</a>

### 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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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.

<b>NAME/ORGANIZATION</b>	<b>ADDRESS</b>	<b>CITY</b>	<b>STATE</b>	<b>ZIP</b>	<b>PHONE</b>	<b>E-MAIL</b>
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
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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/Farmer	813 Plainville Rd.	Adairsville	GA	30103	(770) 773-6181	

Plan for Oothkalooga Creek  
HUC 10 # 0315010302

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
Catherin Fox/Fox Environmental					(404) 441-7568	<a href="mailto:cfox@foxenvironmental.net">cfox@foxenvironmental.net</a>

**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.

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N/A: This is a new TMDL implementation plan

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**APPENDIX C.**

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

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The NGRDC surveyed Oothkalooga Creek during a very rainy period on March 26, 2009 when the creek was swollen to near flood stage and muddy with sediment. The creek segment goes through a mostly agricultural and forested area upstream towards the Bartow County line. There is also some light industry in the lower part of the Gordon segment along US Hwy. 41. There was one cattle farm where it was seen that the cattle had free access to the creek. When it gets to the GA Hwy. 53 crossing in the City of Calhoun, it enters into the floodplain where it could potentially pick up more sediment and bacterial contamination. Near downtown Calhoun, it flows past the George Chambers Resource Center and Park where

Plan for Oothkalooga Creek  
HUC 10 # 0315010302

there is a lot of parkland and recreational fields. Nearby there is land that has been zoned industrial and which is for sale. As it continues its path into the Oostanaula, it enters an area with some urban residences and businesses. Road crossings visited include: GA Hwy. 156, George Chambers Resource Center at GA Hwy 53 Spur, Main Street/ Hwy. 53, Salem Rd., McDaniel Rd. near railroad tracks, Taylor Bridge Rd., and GA Hwy 41 near Adairsville.





Plan for Oothkalooga Creek  
HUC 10 # 0315010302



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

[www.georgiastats.uga.edu](http://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.

Phone Conversation with Harry Pierce, Mayor, City of Fairmount. Phone Conversation with Fairmount WWTP Operator.

“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>

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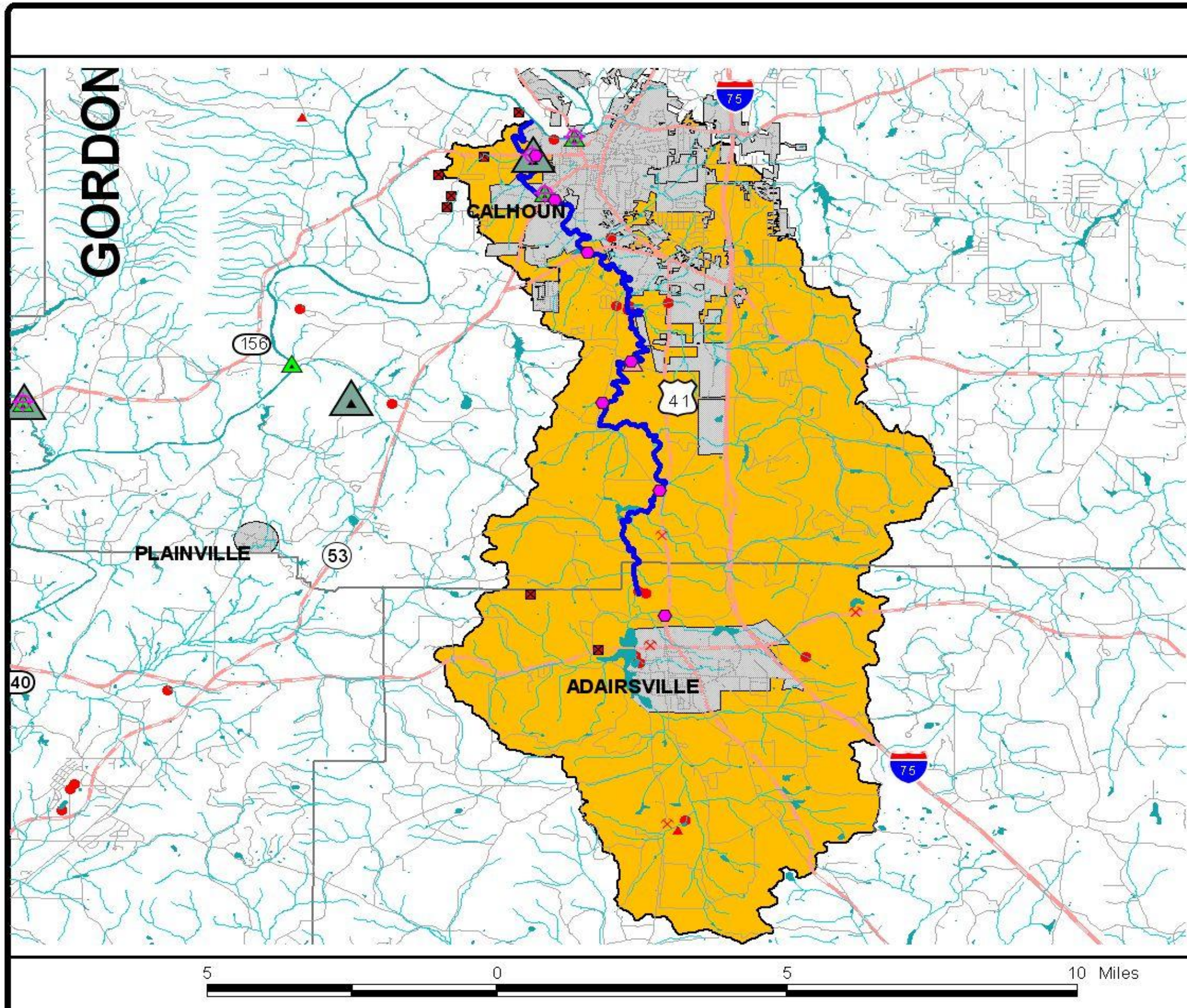
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Tier 2 TMDL Implementation Plan  
and  
Extended Revisions

**Oothkalooga Creek  
Oostanaula Watershed  
HUC10# 0315010302**

Bartow County Line  
to Oostanaula River



- 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