

STATE OF GEORGIA

TIER 2 TMDL Implementation Plan (Revision # 01)

Segment Name: Dry Creek Date: Sept. 30, 2009

River Basin: Tennessee River Basin

Local Watershed Governments:

- Catoosa County Government
- Walker County Government
- Whitfield County Government
- City of Ringgold
- City of Cohutta
- City of Tunnel Hill

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.

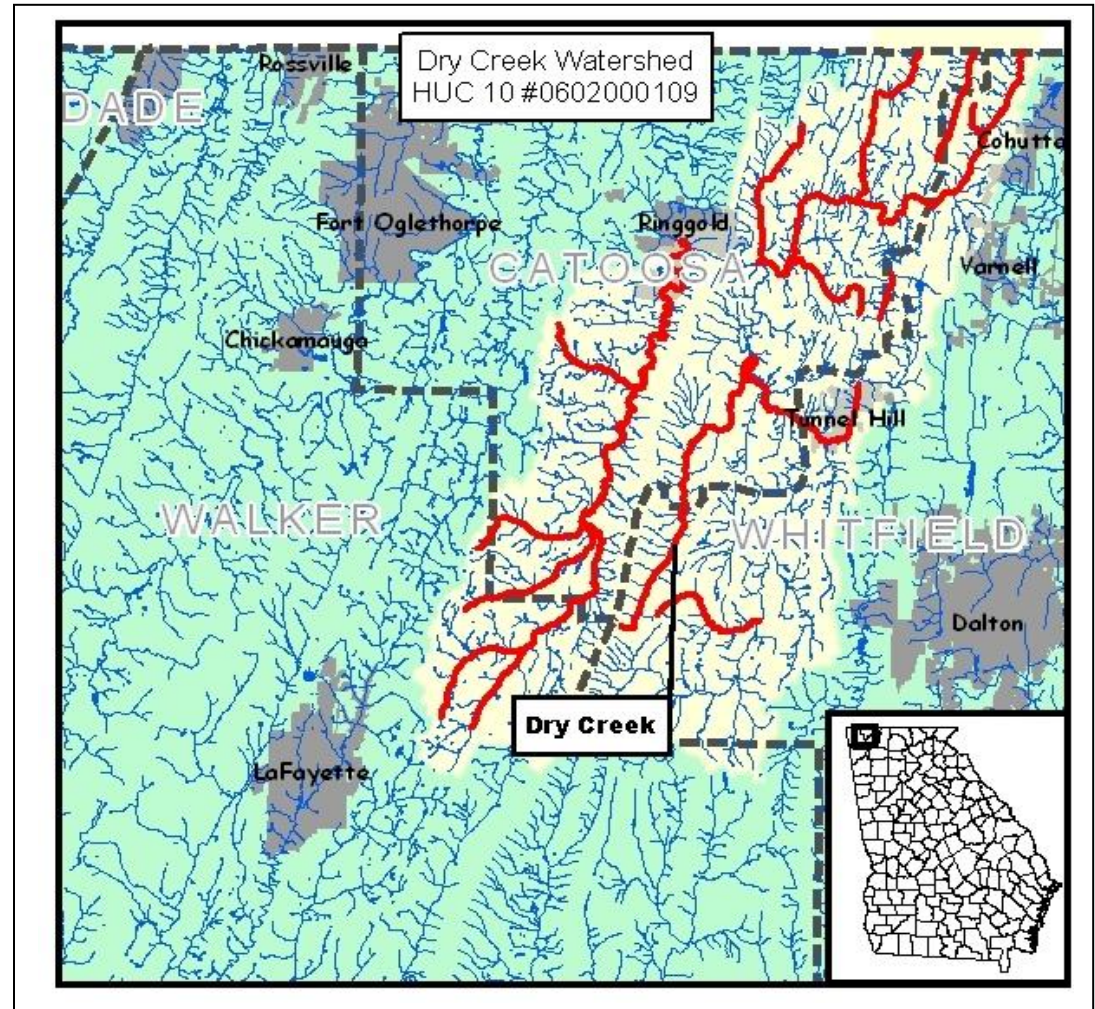


Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED

IMPAIRED SEGMENT	IMPAIRED SEGMENT LOCATION	EXTENT (mi/ac)	CRITERIA VIOLATED	EVALUATION
Dry Creek	Headwaters to East Chickamauga Creek	10	Fecal Coliform	NS
Little Chickamauga Creek	Coulter Creek to S. Chickamauga Creek	11	Fecal Coliform	NS

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. New conditions or changes to information contained in the TMDL study documents should be in **bold** and underlined.

Dry Creek begins in Whitfield County as the headwaters flow out of the east side of Taylor Ridge. This particular area is located in the Houston Valley OHV Park of the Chattahoochee National Forest. Dry Creek then flows north by northeast through Houston Valley where it collects the drainage of the east side of Taylor Ridge and the west side of Dick Ridge. Dry Creek crosses into Catoosa County where it eventually flows into the East Chickamauga Creek. This watershed drains 7633.21 acres.

Land Use: The land use of this area is primarily forested with 80.8% at 6,170 acres. Agriculture is the second highest land use with 15.8% at 1,103 acres. Other Grasses were the next highest land use category at 2.6% with 196 acres. Open Water, Low Intensity Residential, High Intensity Residential, Bare Rock, and Woody Wetlands each make up less than a percentage point.

Dry Creek is in the Ridge and Valley physiographic 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.

The current TMDL of the Dry Creek stream segments indicates that the potential sources of fecal coliform contamination are from non-point sources. The possible non-point sources contributing to the fecal contamination are wildlife, agricultural, and urban development.

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. 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 Tennessee 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). However, feces deposited on the land surface can result in the introduction of fecal coliform to streams during runoff events. It should be noted that

between storm events, considerable decomposition of the fecal matter might occur, resulting in a decrease in the associated fecal coliform numbers.

Agricultural livestock are a potential source of fecal coliform to streams in the Tennessee 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 table shows the estimated amount of beef cattle, dairy cattle, swine, sheep, horses, goats, and chickens by category in the counties within this particular HUC 10. The following tables provide the estimated amount of farm animals in Catoosa for livestock and chicken.

Livestock Population in Catoosa 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
3,000	150	0	50	300	30	40	0	0

Sources: georgiastats.uga.edu (2008)

There is a significant presence of poultry operations in Catoosa County, which can be a source of the fecal coliform pollution. The chart below lays out an approximate number of chickens in each county from all poultry operations, broken down by type of chicken. 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.

Catoosa County Poultry Population, by type (Thousands)

Breeder Pullet Unit	Broiler Chickens	Hatching Layers	Table Layers	Totals
0	2,756	120	0	2,876

Sources: georgiastats.uga.edu (2008)

Fecal coliform from urban areas are attributable to multiple sources, including: domestic animals, leaks and overflows from sanitary sewer systems, illicit discharges, leaking septic systems, runoff from improper disposal of waste materials, and leachate from both operational and closed landfills. Fecal coliform bacteria enter streams by direct washoff from the land surface, or the runoff may be diverted to a storm water collection system and discharged through a discrete outlet structure.

A portion of the fecal coliform contributions in the Tennessee River Basin may be attributed to failure of septic systems and illicit discharges of raw sewage. The table below presents the number of septic systems that have been installed from 2004-2009, as well as the number of septic systems that have been repaired in this time period. Often, this is a reflection of population increases outpacing the expansion of sewage collection systems during this period. Hence, a large number of septic systems are installed to contain and treat the sanitary waste.

Septic History (2004-2009)

County	New Septic Systems (2004-2009)	Septic Systems Repaired (2004-2009)
Catoosa	1,109	946

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. There are 26 known landfills in the Tennessee River Basin. Of these, 1 is an active landfill, 3 are in the process of being closed and 22 are inactive or closed. There are 2 landfills in this HUC 10 watershed.

Wastewater Treatment Plants & 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 WWTP/WPCP's 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.

Facility	Permit #	Factory Type	Flow (MGD)	Receiving Stream
Cochran's Unocol Truck Stop	GA0021954	PID	0.012	East Chickamauga Creek
Waffle House	GA0034657	GEN PID	0.004	Little Chickamauga Creek Tributary

Data provided by EPD

The primary source of drinking water in Catoosa County comes from ground water at Yates Springs, which has a constant flow and a cool temperature throughout the year. Catoosa County has purchased land in this watershed in order to protect the springs. The City of Ringgold has its' primary intake for the city's water supply on South Chickamauga creek.

Relevant Watershed Planning and Management Activities

Stormwater

For large, medium, and small urban areas, the storm water outlets are regulated under MS4 permits. Phase I MS4 permits are issued for large urban areas with populations greater than 100,000. Phase II permits are issued for urbanized areas with a population of at least 50,000 and a density of 1,000 residents per acre. Catoosa County, Whitfield County, the City of Ringgold and the City of Cohutta have Phase II MS4 permits. However, Dry Creek is not located in an MS4. For smaller urban areas, the storm water discharge outlets currently remain unregulated. In addition to urban animal sources of fecal coliform, there may be illicit connections to the storm sewer system. As part of the MS4 permitting program, municipalities are required to conduct dry-weather monitoring to identify and then eliminate these illicit discharges. Fecal coliform bacteria may also enter streams from leaky sewer pipes, or during storm events when combined sewer overflows discharge.

Catoosa County and the City of Ringgold have an NPDES-permitted Small Municipal Separate Storm Sewer System (MS4) and are 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 Storm Water Discharge NPDES Permit is required for all manufacturers that discharge stormwater.

Region-wide Assessments and Plans

The National Forest Service and its Chattahoochee National Forest has a Watershed Management Area (WSMA) designation for a small part of the Little Chickamauga Creek Watershed, Dry Creek is a part of this watershed. Approximately 4% of the HUC 10 watershed is on N.F. land. The National F.S. has "Management Prescriptions" with their corresponding F.S. code for this area that falls within their boundaries: Botanical – Zoological Areas (4.D), Areas Managed to Restore/Maintain Old Growth (6.B), Dispersed Recreation Areas (7.E.1), 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 & 4-5, Land & Resource...).

Environmental Planning Criteria

The purpose of the environmental planning criteria is to offer standards that are used to protect an area's natural resource. Catoosa County has adopted and enforces the applicable environmental criteria. The environmental criteria adopted in Catoosa County are Water Supply Watersheds, Protection of Groundwater Recharge Areas, Wetlands Protection, and River Corridor Protection.

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 storm water 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.

Erosion and Sedimentation

Ringgold and Catoosa County are Local Issuing Authorities for E & S permitting of land-disturbing activities which are required to submit an NOI under the NPDES General Permit for Construction Activity.

The rules, regulations, and ordinances pertaining to erosion and sedimentation in Catoosa County are in compliance with the Manual for Erosion and Sediment Control in Georgia published by the Georgia Soil and Water Conservation Commission.

Georgia Forestry Commission Best Management Practices

The Forestry Commission has implemented best management practices on its lands to reduce sedimentation and erosion from silviculture practices. The Georgia Forestry Commission also provides education, technical and financial assistance through cost-share programs to private landowners especially in the Forestland Enhancement Program, a part of the 2002 Farm Bill. Ongoing Georgia Forestry Commission activities include the following programs.

- Federal Clean Water Act Section 404: GFC received referrals from EPA for compliance determinations in situations involving forestry. It requires normal ongoing agricultural and silvicultural practice to adhere to BMPs and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.
- Georgia's Best Management Practices: A GFC program to inform landowners, foresters, timber buyers, loggers site preparation and reforestation contractors and others involved with silvicultural operations about commonsense, economical effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.
- Georgia Forestry Commission Monthly BMP Assurance Examination: In an effort to document "reasonable assurance" that water quality will be proactively protected during regular ongoing silvicultural operations; the GCF will offer a monthly BMP assurance examination of active sites. All active of ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct examinations.
 - 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. In Catoosa County there was one BMP Assurance Examination given from June 15, 2008 – June 15, 2009. During this time the overall exam score for north Georgia was 95.96%.

- Memo to the Field: Application of BMPs to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast (Silviculture). Although overseen by the EPA/ US Army Corps of Engineers, cases are normally referred to GFC to make the initial determination. It identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.

Department of Natural Resources Best Management Practices

The Department of Natural Resources, Wildlife Management Division provides outreach to landowners on prevention of soil erosion and sedimentation from land-disturbing activities contributing to habitat destruction, advises landowners of best management practices and habitat development for increased wildlife on their property, and encourages landowners to implement conservation practices on their lands through the NRCS.

2008 Farm Bill, US Department of Agriculture Natural Resources Conservation Service and Farm Service Agency

The Food, Conservation, and Energy Act of 2008 (Farm Bill 2008) funded conservation practices for farmers and ranchers with a focus on environmental issues by making existing programs simpler as well as funding new programs. The 2008 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources. This bill provides several opportunities for receiving cost share to improve water quality. These include the following programs administered by the US Department of Agriculture, Natural Resources Conservation Service and Farm Service Agency. The Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), Grasslands Reserve Program (GRP), and the Continuous Conservation Reserve Program (CCRP). Farmers in this area have applied for EQIP and CCRP in particular. EQIP is widely used for the area's poultry and cattle operations. Through this program agricultural best management practices installed as systems include prescribed grazing, pest management, nutrient management, fencing, livestock watering facilities, stream crossings, heavy use areas, animal waste storage structures and composters to address animal mortality. Environmental Quality Incentives Program (EQIP) is a voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health. It is currently a 75% cost share with incentive payments for management for selected practices. The Continuous Conservation Reserve Program (CCRP) is a voluntary program that helps agricultural producers safeguard environmentally sensitive land. Participants plant long-term, resource-conserving covers to improve the quality of water, control soil erosion, and enhance wildlife habitat. Rental payment is provided for the participant as well as incentives that result in up to 90% cost share. This program has been used extensively to provide livestock exclusion along streams while providing alternative livestock watering facilities. Land is enrolled in this program for 10-15 years, providing long-term resource protection.

A Land Treatment Watershed Project addressing the entire South Chickamauga Creek Watershed has been underway since 2001 funded by PL-566. The project is implemented similarly to the EQIP process. Several landowners within the Dry Creek watershed have participated implementing extensive farm plans addressing agricultural resource concerns.

Dry Creek

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 storm water 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
Dry Creek	Headwaters to East Chickamauga Creek	Fecal Coliform Bacteria	0	0	6.08E+11	6.75E+11

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 Bacteria	1,000 per 100 ml (geometric mean November- April) 200 per 100 ml (geometric mean May- October)	Wildlife Agricultural Livestock <ul style="list-style-type: none"> • Animal grazing • Animal access to streams • Application of manure to pastureland and cropland 	86

		Urban Development <ul style="list-style-type: none"> • Leaking sanitary sewer lines • Leaking septic systems • Land Application Systems • Landfills • Urban Runoff • Domestic Animals 	
		Erosion and Sedimentation from Silviculture	

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.

Identification and ranking of potential sources or causes of impairment were performed through a visual survey of the watershed and involvement of a stakeholder group. The visual survey was conducted on April 9, 2009. Images of the stream and land use were recorded, as well as, possible sources of fecal coliform bacteria. During the visual survey the land use of the Dry Creek watershed was confirmed.

During the visual survey it was determined that leaking septic systems were probably the major contributor of fecal coliform in the area. Some beef cattle operations and chicken farms were also noticed; however cows at most of these locations were fenced out of stream with the exception of a farm in Whitfield County. The majority of this watershed is forested which would indicate that wildlife is also contributing to the fecal coliform in this area.

When Dry Creek was discussed at the stakeholder meeting it was determined that leaking septic systems were probably the major contributor of fecal coliform into this watershed. A representative from the Catoosa County Environmental Health Department said that leaking septic systems were a major problem in this area. When agriculture in this watershed was mentioned an NRCS representative stated that the majority of the farms in the area have had BMP's installed. Wildlife is present and could be a source of fecal coliform.

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)	
Wildlife	Large	5	Medium	3	15
Urban Development • Leaking Septic Systems	Medium	3	Medium	3	9
Agriculture	Medium	3	Medium	3	9

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:

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)
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<p>Georgia Growth Planning Act, Part 5</p>	<p>City of Ringgold/Catoosa County Government</p>	<p>Coordinated Planning Program, managed by Georgia DCA, assigns local governments Environmental Planning Criteria (set by Georgia DNR) to include in local long-term comprehensive plans:</p> <ul style="list-style-type: none"> • Water Supply Watersheds • Groundwater • Wetlands • Protected Rivers • Protected Mountains <p>Program also requires local governments to identify Developments of Regional Impact (DRI) and develop plans to protect and manage Regional Impact Resources (RIR).</p>	<p>City of Ringgold/Catoosa County Governments Impact Fees</p>	<p>Urban Development Agriculture Wildlife</p>	<p>1989</p>	<p>Effectiveness varies with the specific BMPs applied.</p>
<p>Georgia's Best Management Practices</p>	<p>Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)</p>	<p>GFC program to inform landowners, foresters, timber buyers, loggers site preparation and reforestation contractors and others involved with silvicultural operations about commonsense, economical effective practices to minimize nonpoint source and thermal pollution. GFC encourages and monitors compliance and conducts a complaint resolution program.</p>	<p>On private land the responsibility/cost for installing and maintaining BMPs would be on the landowner, or the timber harvester when a company is logging on someone's land.</p>	<p>Silviculture Runoff</p>	<p>Ongoing</p>	<p>>75% when properly applied to site preparation and harvesting activities.</p>
<p>Georgia Forestry Commission Monthly BMP Assurance Examination</p>	<p>Georgia Forestry Commission (matters involving enforcement are generally referred to GA EPD)</p>	<p>In an effort to document "reasonable assurance" that water quality will be proactively protected during regular ongoing silvicultural operations, the GCF will offer a monthly BMP</p>	<p>Federal and State</p>	<p>Silviculture Runoff</p>	<p>Ongoing</p>	<p>5</p>

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		assurance examination of active sites. All active of ongoing sites will be identified either through monthly air patrol flights, courthouse records, riding the roads, notification or by landowners. Sites located within watersheds of specific biota (sediment) impaired streams will be given a higher priority to identify and conduct examinations.				
Georgia Erosion and Sedimentation Control Act, Construction Permit	Catoosa County, Georgia DNR/EPD, Georgia Soil and Water Conservation Commission	County certified as Local Issuing Authority for land-disturbing activities. Requires Erosion and Sedimentation Control Plan incorporating best management practices plus "Qualified Personnel" Training and Certification Program adopted from Georgia Soil and Water Conservation Commission. Certification of on-site "Qualified Personnel" to ensure proper design, construction, and maintenance of standard E & S control measures and storm water management practices	Catoosa County	Urban Development	UNK	5
Phase II NPDES Storm Water Permit for Small MS4	Georgia DNR & EPD, Catoosa County, Whitfield County, City of Ringgold, and City of Cohutta	Requires local jurisdictions to develop a comprehensive Storm Water Management Program (SWMP) to include 1. Public Education and Outreach; 2. Public Participation and Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Storm Water Runoff Control; 5. Post-Construction Storm Water Management in New Development	Catoosa County, Whitfield County, City of Ringgold, and City of Cohutta	Urban Development	UNK	5

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		and Redevelopment; 6. Pollution Prevention and Good Housekeeping related to municipal operations, reporting, monitoring and program implementation.				
Industrial Storm Water Discharge NPDES Permit	Georgia DNR/EPD	General storm water discharge permit for manufacturing facilities; mining, oil & gas operations; hazardous waste treatment; storage or disposal facilities; recycling centers; steam electric power generating facilities; transportation facilities; domestic sewage or sewage sludge treatment. Requires implementation of Storm Water Pollution Prevention Plan. May require storm water monitoring program targeting discharges into/near 303(d) listed waters.	State	Urban Development	UNK	5
Construction Storm Water Discharge NPDES Permit	Georgia DNR/EPD	General storm water discharge permit for stand-alone construction sites; infrastructure projects; and common developments. Requires implementation of Erosion, Sedimentation and Pollution Control Plan plus monitoring of discharge for compliance with Georgia's in-stream water quality standards.	State	Urban Development	UNK	5
National Pollution Discharge Elimination System (NPDES) Permit Regulations for CAFOs over	U.S. Environmental Protection Agency & GA Environmental Protection Division	U.S, Environmental Protection Agency and GA Environmental Protection Division	Federal and State	Agriculture	UNK	5

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1,000 animal units.						
Catoosa County Greenspace Trust Fund	State of Georgia Catoosa County	Participation in Georgia Greenspace Program with the conditions that concentration be on lands that would not significantly impact the tax digest and would improve the quality of life	Catoosa County	Erosion and Sedimentation	UNK	UNK
Sanitary Sewer Maintenance Program	City of Ringgold	Sanitary sewer system inventory and inspection (mapping, television inspections); infiltration & inflow identification and reduction (flow monitoring, smoke testing); sewer line rehabilitation (pipe bursting, relining, cleaning) and manhole rehabilitation	City of Ringgold	Urban Development	Ongoing	UNK
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Services	EQIP is a voluntary program that provides technical and cost share assistance for protection of ground and surface water, erosion control, air quality, wildlife habitat, and plant health. It is currently a 75% cost share with incentive payments for management for selected practices. <ul style="list-style-type: none"> • prescribed grazing • pest management • nutrient management • Fencing • livestock watering facilities • stream crossings • heavy use areas • animal waste storage structures • composters to address animal mortality 	Federal (Farm Bill 2008) 75% cost share with incentive payments for management for selected practices	Agriculture	Ongoing	Effectiveness will vary with the specific application and must be individually determined.
Continuous	Natural Resources	Voluntary program that helps	Rental payment	Agriculture	Ongoing	Effectiveness will

Conservation Reserve Program (CCRP)	Conservation Services	<p>agricultural producers safeguard environmentally sensitive land. Participants plant long-term, resource-conserving covers to improve the quality of water, control soil erosion, and enhance wildlife habitat.</p> <ul style="list-style-type: none"> This program has been used extensively to provide livestock exclusion along streams while providing alternative livestock watering facilities. Land is enrolled in this program for 10-15 years, providing long-term resource protection. 	is provided for the participant as well as incentives that result in up to 90% cost share.			vary with the specific application and must be individually determined.
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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)
Wildlife	15	N/A	N/A	N/A
Urban Development	9	N/A	N/A	N/A

Agriculture	9	<ul style="list-style-type: none"> • prescribed grazing • pest management • nutrient management • fencing • livestock watering facilities • stream crossings • heavy use areas • animal waste storage structures • composters to address animal mortality • alternative watering facilities 	Farmers in this watershed believe that the BMP's offered from the NRCS are the best available, however some farmers do not have the necessary funds to implement them.	N/A
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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)
Stormwater BMP's	Industry, local government	NEW	Various	Urban Runoff	N/A	UNK
Agricultural BMP's	USDA, NRCS, farmers	NEW	Various	Livestock waste	N/A	UNK
Septic Tank Outreach	Local environmental health department	Use 319 grant funds to enhance septic tank maintenance outreach.	Various	Leaking septic systems	N/A	UNK

VI. MONITORING PLAN

This section describes parameters to be monitored, status, whether monitoring is required for watershed assessments or storm water 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 [] No [X].

Table 6. MONITORING PLAN

APPLICABLE TO CRITERION 1: Fecal Coliform

PARAMETER (S) TO BE MONITORED	RESPONSIBLE ENTITY (2)	STATUS (CURRENT, PROPOSED, OR RECOMMENDED)	TIME FRAME (4)	PURPOSE (If for listing assessment, date of SQAP submission)

(1)		(3)	START	END	(5)
Fecal Coliform	EPA	Proposed	2009		

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: Fecal Coliform

RESPONSIBILITY (1)	DESCRIPTION (2)	AUDIENCE (3)	START OR COMPLETION DATE (4)
NWGRC	Meeting to determine a monitoring plan for streams in Catoosa County.	Stakeholder Advisory Group	June 2009
Catoosa 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.	Packets of information are issued for every permit issued as well as every repair permit issued. Information is also given to people concerned with this issue.	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.
Prescribed Grazing	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Pest Management	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Nutrient Management	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Fencing	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Livestock Watering Facilities	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Stream Crossings	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Heavy Use Areas	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Animal Waste Storage Structures	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Composters to address animal mortality	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Alternative Watering Facilities	N/A	NRCS, USDA, and contracted farmer	UNK	x	
Meeting to determine monitoring plan for streams in Catoosa County	N/A	NWGRC, GAEPD,EPA	UNK		x
Education and Outreach concerning septic tanks	N/A	Catoosa County Environmental Health	UNK	x	

		Department	
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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.

April 1, 2009 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. Chris Falkner, Environmental Outreach Coordinator from the Environmental Protection Department gave a PowerPoint presentation that explained the TMDL process and how they are developed, as well as a list of the streams that are currently on the 303 (d) list. At the end of the meeting it was determined that the people in attendance compile a list of people that they would like to act as stakeholders for the impaired streams in their particular watershed.

June 4, 2009 Tri-County Stakeholder Meeting concerning impaired streams in Catoosa, Walker, and Whitfield Counties held at the Walker County Civic Center (20 attendees) The meeting began with a PowerPoint presentation that described the TMDL process and the contractor's responsibilities under this contract, as well as the timeline for the TMDL process. Cindy Askew of the NRCS gave a presentation about agricultural Best Management Practices that her agency has implemented on some of the farms in the area. The Continuous Conservation Reserve Program (CCRP) and Environmental Quality Incentives Program (EQUIP) were just a few of the programs that she described. The meeting was then opened to discussion and the ranking the potential pollution sources in each of the impaired stream segments. It was mentioned that the sampling data for Little Chickamauga Creek and Dry Creek were from 2001, but TVA sampled these streams more recently. Dry Creek was sampled for E-coli in 2004 and Little Chickamauga Creek was sampled for E-coli at three locations from 2003-2007. It was stated that leaking septic systems in this watershed are probably the main contributor of fecal coliform. The majority of the agricultural operations on Dry Creek have had BMP's installed since the creek was last sampled. Wildlife is also present in the watershed.

August 4, 2009 Tri-County Stakeholder Meeting held at the Walker County Civic Center (17) A condensed version of the earlier presentation on the basics of TMDLs, their plans and fecal coliform was given. Also covered were the BMPs and the BMP programs that can help address the nonpoint pollution. Questions were fielded from the audience, along with asking a few questions asked of the audience. Adopt-a-Stream monitoring was brought up at this point as a possible remedy to these obstacles and lack of current data. James Burton asked a question about youth groups doing this monitoring, and the response was that his Young Farmers of Walker County group, a 4-H group, or any other group could participate. One man from Ringgold told of past grease spills at a kitchen grease collection business that could affect the drinking water supply of Ringgold. He stated this has not been fully addressed.

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

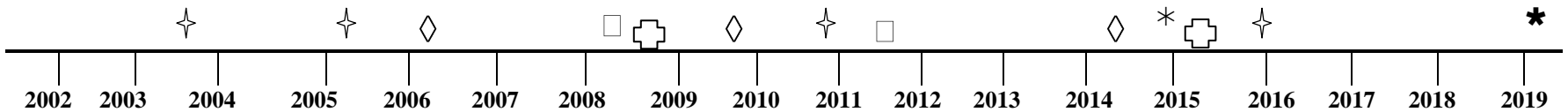
NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Bill Melville/USEPA	61 Forsyth St.	Atlanta	GA	30303	(404) 562-9266	Melville.william@epa.gov
Cindy Askew/NRCS	208 N. Duke St	LaFayette	GA	30728	(706) 638-2207 x 3	Cindy.askew@ga.usda.gov
David Ashburn/Walker County	PO Box 445	LaFayette	GA	30728	(423) 421-6307	
Norman Edwards/Walker Co. Extension	PO Box 827	LaFayette	GA	30728	(706) 638-2548	nedwards@uga.edu
R. Ellis Walter/Catoosa County Env. Health	182 Tiger Tr.	Ringgold	GA	30736	(706) 935-6322	rewalters@dhr.state.ga.us
Charles Lancaster/Catoosa Extension	43 maple St.	Ringgold	GA	30736	(706) 935-4211	clancast@uga.edu
Brenda Jackson/Whitfield County Extension	PO Box 1385	Dalton	GA	30720	(706) 278-8207	bljackson@whitfieldcountyga.com
Linda Harris/TVA	1101 Market St. PSC-1E	Chattanooga	TN	37402	(423) 876-4178	lbharris@tva.gov
Rebecca Bolden/Mohawk Ind.	405 Virgil Drive Dalton, GA	Ft. Oglethorpe	GA	30722	(706) 428-8080	Rebecca_bolden@mohawkind.com
Michele Jones/Chattahoochee	3941 Hwy 76	Chatsworth	GA	30705	(706) 695-6736 x 102	mbjones@fs.fed.us

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National Forest						
Ruth Stokes/US Forest Service	3941 Hwy 76	Chatsworth	GA	30705	(706) 695-6736	rbstokes@fs.fed.us
Brandon Whitley/Walker County Water	PO Box 248	Flintstone	GA	30725	(706) 375-3028	bjwhitley@nexband.com
Dan Wright/City Manager Ringgold	150 Tennessee St.	Ringgold	GA	30736		danwright@catt.com
Jason Hall/Ringgold						Jasonhall@catt.com
Dena Haverland/Dalton Utilities					(706) 529-1010	dhaverland@dutil.com
Kelia Kimbell/Walker County	101 Napier St. Suite A	LaFayette	GA	30728	(706) 638-4048	klkimbell@aol.com
Kathy Ward/Walker County	101 Napier St. Suite A	LaFayette	GA	30728	(706) 638-4048	planning@walkerga.us
Charlie Jones/NWGRC		Rome	GA		(706) 295-6485	cjones@nwgrc.org
Buster Brown/Catoosa County	184 Tiger Trail	Ringgold	GA	30736	(706) 965-3787	buster@catoosa.com
Edward Wright/ Concerned citizen	1180 Yates Spring Rd.	Ringgold	GA	30736	(706) 965-3084	Eswright31@yahoo.com
Mike Parker/ Aqua Shield, Inc.		Chattanooga	TN	37343	(423) 468-1763	mparker@aquashieldinc.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

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Prepared By:	Ben Robinson & Jonathan Bridges		
Agency:	Northwest Georgia Regional Commission		
Address:	PO Box 1798		
City:	Rome	ST:	GA ZIP: 30162-1793
E-mail:	brobinson@nwgrc.org jbridges@nwgrc.org		
Date Submitted to EPD:	Sept. 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.

NAME/ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Bill Melville/USEPA	61 Forsyth St.	Atlanta	GA	30303	(404) 562-9266	Melville.william@epa.gov
Cindy Askew/NRCS	208 N. Duke St	LaFayette	GA	30728	(706) 638-2207 x 3	Cindy.askew@ga.usda.gov
David Ashburn/Walker County	PO Box 445	LaFayette	GA	30728	(423) 421-6307	
Norman Edwards/Walker Co. Extension	PO Box 827	LaFayette	GA	30728	(706) 638-2548	nedwards@uga.edu
R. Ellis Walter/Catoosa County Env. Health	182 Tiger Tr.	Ringgold	GA	30736	(706) 935-6322	rewalters@dhr.state.ga.us
Charles Lancaster/Catoosa Extension	43 maple St.	Ringgold	GA	30736	(706) 935-4211	clancast@uga.edu
Brenda Jackson/Whitfield County Extension	PO Box 1385	Dalton	GA	30720	(706) 278-8207	bljackson@whitfieldcountyga.com
Linda Harris/TVA	1101 Market St. PSC-1E	Chattanooga	TN	37402	(423) 876-4178	lbharris@tva.gov
Rebecca Bolden/Mohawk Ind.	405 Virgil Drive Dalton, GA	Ft. Oglethorpe	GA	30722	(706) 428-8080	Rebecca_bolden@mohawkind.com
Michele Jones/Chattahoochee National Forest	3941 Hwy 76	Chatsworth	GA	30705	(706) 695-6736 x 102	mbjones@fs.fed.us
Ruth Stokes/US Forest Service	3941 Hwy 76	Chatsworth	GA	30705	(706) 695-6736	rbstokes@fs.fed.us
Brandon Whitley/Walker County Water	PO Box 248	Flintstone	GA	30725	(706) 375-3028	bjwhitley@nexband.com
Dan Wright/City	150 Tennessee St.	Ringgold	GA	30736		danwright@catt.com

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Manager Ringgold						
Jason Hall/Ringgold						Jasonhall@catt.com
Dena Haverland/Dalton Utilities					(706) 529-1010	dhaverland@duil.com
Kelia Kimbell/Walker County	101 Napier St. Suite A	LaFayette	GA	30728	(706) 638-4048	klkimbell@aol.com
Kathy Ward/Walker County	101 Napier St. Suite A	LaFayette	GA	30728	(706) 638-4048	planning@walkerga.us
Charlie Jones/NWGRC		Rome	GA		(706) 295-6485	cjones@nwgrc.org
Buster Brown/Catoosa County	184 Tiger Trail	Ringgold	GA	30736	(706) 965-3787	buster@catoosa.com
Edward Wright/ Concerned citizen	1180 Yates Spring Rd.	Ringgold	GA	30736	(706) 965-3084	Eswright31@yahoo.com
Mike Parker/ Aqua Shield, Inc.		Chattanooga	TN	37343	(423) 468-1763	mparker@aquashieldinc.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 TMDL implementation plan.

APPENDIX C.

VISUAL FIELD SURVEYS, NOTES, PHOTOGRAPHS, AND MAPS.

**Dry Creek- Headwaters to E. Chickamauga Creek
Catoosa/Whitfield County
Surveyors: Ben Robinson, Jonathan Bridges**

4/9/09

Site #1: Houston Valley Rd. downstream

Moderate flow with a fairly clear flow. There is a 6" PVC pipe runs into creek. There is some litter in stream. Chicken houses on downstream side along with fenced off pasture. Behind the chicken farm it is clear cut forest. Mostly wooded on the upstream side.



Site #2: Houston Valley Rd. at a newly cut road across creek

Rocky bottom; fairly clear with good flow & wooded buffers. There could be some sedimentation runoff of the steep dirt road.





Site #3: Houston Valley Rd. after Hickory Grove Rd. – near Addis Rd.

This is the only survey site on the Whitfield County side. Stream flows downstream unfenced through cow grazing pasture. It is narrower here with a moderate flow. It is wooded upstream with the Chattahoochee National Forest a mile or so upstream. This area is mostly residential with some agricultural. Small fish were seen in the creek.



Sources

www.georgiastats.uga.edu

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

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

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

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

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

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

CODE OF ORDINANCES County of Catoosa, GEORGIA http://www.municode.com/Resources/ClientCode_List.asp?cn=Catoosa%20County&sid=10&cid=5273

Land and Resource Management Plan: Chattahoochee-Oconee National Forests. January 2004. USDA National Forest Service: Southern Region.

