

STATE OF GEORGIA

TIER 2 TMDL Implementation Plan (Revision # 01)

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

River Basin: Tallapoosa River Basin

Local Watershed Governments:

Haralson County, Carroll County, Cities of Tallapoosa, Waco

Cleburne County (Alabama)

I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

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

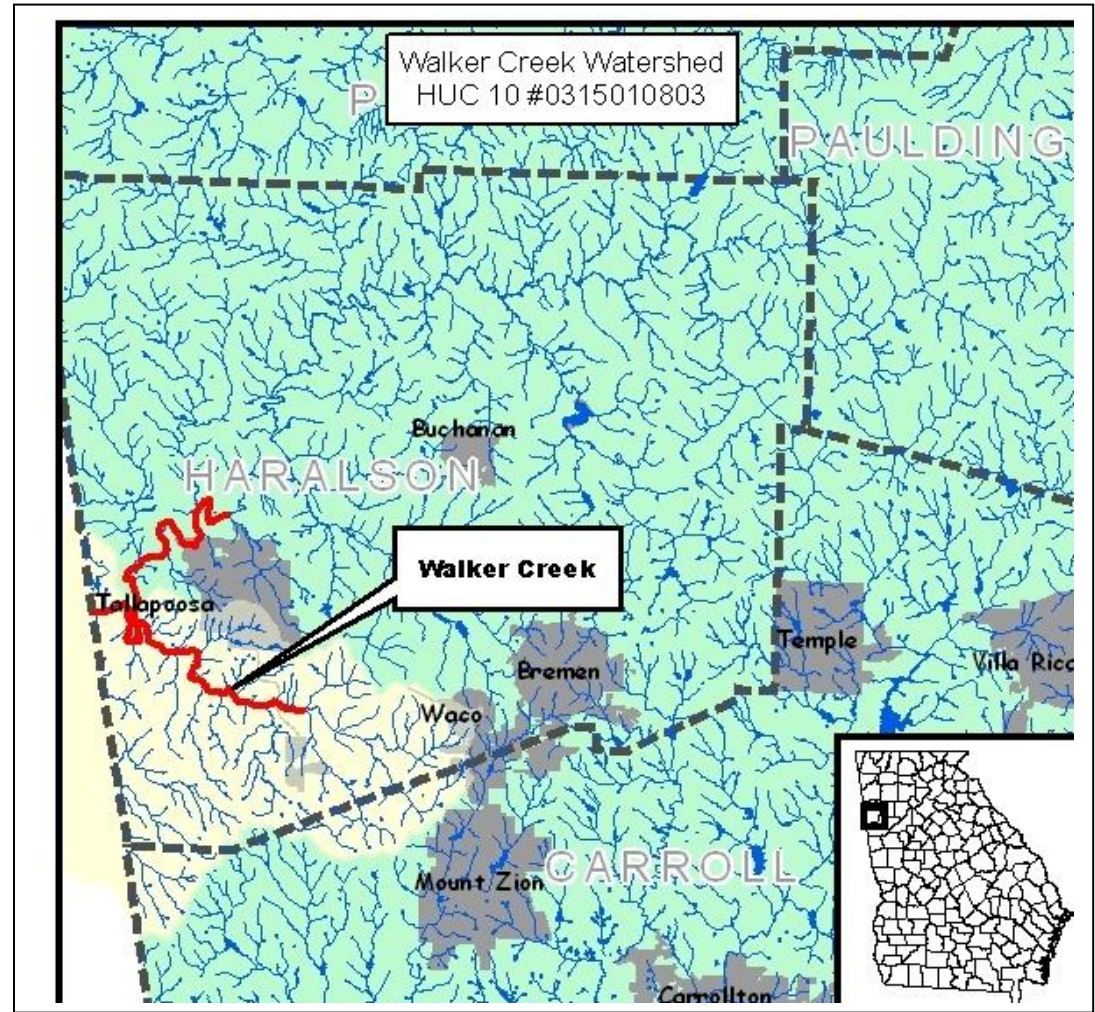


Table 1. IMPAIRED SEGMENTS IN THE HUC 10 WATERSHED

IMPAIRED SEGMENT	IMPAIRED SEGMENT LOCATION	EXTENT (mi/ac)	CRITERIA VIOLATED	EVALUATION
Walker Creek	Blalock Creek to Tallapoosa River	7 mi	Fecal Coliform	Not Supporting

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

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

Characteristics of the HUC #10 Watershed

The 03155010803 HUC 10 watershed drains an area of approximately 69,386 acres or 108 square miles. It is mostly in Haralson County, GA and Cleburne County, AL but also contains a small portion of northwestern Carroll County. It splits the City of Waco in half and includes the lower third of the City of Tallapoosa. The land use for this county is mostly forested and agricultural.

Forest & Farmland Use for Haralson County - 2007

Forest Land: % of Total Land / Acres	Land in Farms: % of Total Land/ Acres	Harvested Cropland: % of Total Land/Acres
68 % / 123,000	19 % /34,398	2.3%/4,205

Source: www.georgiastats.uga.edu

Haralson County is in the Piedmont physiographic region known for its rolling hills. The soils of the area are usually clayey and fertile, plus they are more suitable for septic tanks than the Ridge and Valley physiographic soils. The Piedmont is composed of igneous and metamorphic rock originating from sediments that were subject to high temperatures and pressure.

Potential Sources

The potential sources of fecal coliform in the watershed are of the non-point source variety. 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. There are no permitted point sources in the watershed. A point source is defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. There are no such permitted stormwater, wastewater, or industrial discharges in the watershed.

Nonpoint Sources

Wildlife Sources

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

White-tailed deer populations are significant throughout the Tallapoosa 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 Tallapoosa 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 Haralson County: livestock and chicken.

Livestock in Haralson 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
6,250	250	0	500	150	25	300	75	0

Sources: www.georgiastats.uga.edu (2008)

There are no registered or permitted liquid manure CAFOs (Confined Animal Feeding Operations) located in the Tallapoosa River Basin. 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 approximately 1,560,000 broiler chickens in the county being raised in 52 houses. Broiler chickens are the only chickens raised in houses in Haralson County (www.georgiastats.uga.edu, 2007).

Agriculture in Northwest Georgia has been experiencing a long-term declining trend along with the increase of development. This is borne out by both conversations with USDA personnel and by the county farm numbers, which show an across the board decrease in the amount of farmland and harvested acreage. Plus, livestock is more often than not slowly decreasing year to year or just staying the same. Poultry levels have plateaued off, with actually a substantial decrease in Haralson County from 2007-08. 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

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, stormwater 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 collection system and discharged through a discrete outlet. Domestic animals are unlikely to be much of an issue in the Walker Creek watershed, as it is along with the rest of Haralson sparsely populated and spread out in rural areas, as seen below.

Haralson County Urban/Rural Demographics

County Pop., 2000 Census	Density/mi², 2007	Population, Projection in 2010¹	Density/mi² Projection in 2010	% of ppl. in rural land, 2000	% of ppl. in urban area, 2000
25,690	101.8	30,445	106.5	83	17

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

These numbers indicate is that more people live outside the reach of municipal sewer lines, so they rely on septic systems. A portion of the fecal coliform contributions into the waterways may be attributed to failure of septic systems and illicit discharges of raw sewage. The City of Tallapoosa, near the outlet of Walker Creek, extends sewerage services to most of the city as well as select service beyond the city limits (including to a planned children’s center), while the City of Waco lacks the service. (Georgia DCA, <http://www.georgiaplanning.com/planners/SDmaps>).

While Haralson County is not growing at the pace of the surrounding counties, there has been nonetheless expansion of households in the area with a corresponding increase of septic tank installation. These new developments are not usually identified as potential sources as the current oversight by the Department of Public Health’s Environmental Health Specialists of installation of new septic systems is rigorous, as is the inspection of septic system repairs. The potential for failing septic systems is higher with older systems that were installed during a period of a less rigorous regulatory framework - and of those the ones which also have not been properly maintained or are due for a replacement. Those installed pre-1984 prior 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.

There is also the remote but still significant potential for a sub-surface failure, where the septic tank isn’t working properly but this isn’t evident from above ground. Between 2004 and 2009 (partial year), there were 770 septic tanks installed and 350 repairs in Haralson County (Northwest Georgia EH). It is difficult to gauge how many septic systems that have the potential to fail exist in the Walker Creek area beyond what limited inference can be made from these numbers, as they are countywide numbers that don’t include the age of the systems. Also, the factors that contribute to making a system prone to failure are many: age, intensity of use, siting geology, size & type of tank, and others.

It’s important to note some mitigating factors that could limit septic systems’ contribution. 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. Some factors particular to the area are that the soils in Haralson County, with it being in the Piedmont region, are on average better suited for septic systems than those of the rest of the Coosa Valley. A final point that limits the potential contribution of septic tanks is that the drainage area for Little River is heavily forested with few residences mixed in with the developed agricultural land, and a corresponding fewer number of septic tanks.

Stormwater runoff from urban areas remains a possible source in the larger HUC 10, though a minor one. It is a mostly rural county, and the Walker Creek watershed is covered by mostly forest and farmland with very little urban use.

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

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

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

Relevant Management Activities in the HUC 10 Watershed

- The City of Tallapoosa has a Water Supply Watershed Protection Plan in place.
- Erosion and Sedimentation Controls: Haralson County issues its own Erosion and Sedimentation Control Permits, with the Building and Zoning office doing the permitting and the zoning administrator assuring compliance. The City of Tallapoosa has the EPD issue ES&C Permits, with the EPD Mountain District ensuring compliance with the permits.

Information on Walker Creek Segment (HUC 12#: 031501080302)

The Walker Creek segment, starting at Blalock Creek, lies south of the City of Tallapoosa and runs southeast to northeast for seven miles before emptying into the Tallapoosa River. Upstream of the segment the creek crosses the I-20 interstate twice to reach its headwaters southwest of the City of Waco in Haralson County. The sub-watershed drains an area of approximately 22,758 acres, which consists mostly of forests and agricultural land with a small percentage of low-intensity residential land use. See below chart for the full details

Land Use for the Walker Creek Sub-Watershed (HUC12 # 031501080302)		
	% of Land Use	Acres
Open Water	.3	77.7
Low Intensity Residential	3	67.2
High Intensity Residential	.4	92
High Intensity Commercial, Industry, Transportation	.2	50.3
Bare Rock, Sand, Clay	.3	76.1
Quarries, Strip Mines, Gravel Pits	0	0

Forest	67.4	15,339
Row Crops	20.8	4,739.3
Pasture, Hay	0	0
Other Grasses (Urban, recreational e.g. parks, lawns	5.8	1,322.1
Woody Wetlands	1.7	385.6
Emergent Herbaceous Wetlands	0	0
Totals	100%	22,758.4

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

This high level of row crop land use was not witnessed during the visual survey. Rather pastureland and hay fields were witnessed in much higher proportion to row crops – definitely much higher than zero acres. This is confirmed by the 2007 Farm Gate Value Report on Haralson County which shows only 232 acres of the entire county’s land being used for row crops. Even if the Farm Gate report is off, it is highly unlikely it is off by about 6,000 acres and all of that acreage is concentrated solely in the Walker Creek sub-watershed. The Farm Gate value shows 4,900 acres dedicated to straw and hay production in the county, which taken as representative of the HUC 12 confirms the visual survey and land use verification (2007 Georgia Farm Gate Value, *Center for Agribusiness and Economic Development, College of Agricultural and Environmental Sciences, The University of Georgia, Athens, GA 30602. 706-542-0760. http://www.caed.uga.edu*). There was a new large development in the sub-watershed that is soon to be occupied- the World Children’s Center.

Georgia Forestry Commission District and BMP assurance Exams

- 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 GFC conducts BMP Assurance Examinations on site to educate loggers about BMPs and to respond to any complaints. 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. Haralson Count is in GFC District 4 (Newnan). In the Walker Creek watershed, a total 4 exams were conducted at two different locations since 2003: one initial exam and one follow-up exam at each site. The overall average score for the both rounds of exams was 79.3% - an initial average score of 65.12% and a final exam average of 93.48%.

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
Walker Creek	Blalock Creek to Tallapoosa River	FC			9.41E+11	1.05E+12

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)	Wildlife	8%
		Agricultural Runoff	
		Leaking Septic Systems	
		Urban Runoff	
		Silvicultural Runoff	

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, feedback from the stakeholder group, and reference to satellite imagery through Google maps and to information in the TMDL study document. The visual survey of the Walker Creek drainage area was conducted on March 27, 2009 by the staff of the Northwest Georgia Regional Commission. Photographs of the stream channel were taken, and the survey of the land use, wildlife, stream conditions, and weather conditions were recorded. A visual survey of the area contradicted two land use categories established for the Walker Creek HUC 12. The surveyors saw significant agricultural use, but much less row crops than stated - 27% - and a large proportion of pastureland, hay fields than stated in the study documents – 0%. Other than that discrepancy, the land use surveyed fell in line with what was stated in the TMDL study document.

As the area is almost 70% forested and the next highest land use is agriculture, wildlife is sure to be a source of some of the contamination since both of these uses are the habitats for wildlife. It is unknown how much such animals contribute, though one can make an educated guess of the range of contribution. It is known that deer are not as likely of culprits as beavers, waterfowl, and other aquatic warm blooded fauna as deer spend

less time in the water than such animals. From what was gathered from stakeholders, a significant amount of timber harvesting occurs in the area as well, which has the potential (if BMPs aren't followed properly) to lead to silviculture runoff carrying wildlife waste into nearby bodies of water.

Agricultural runoff is also a likely source, though this is hard to verify without access to private property and/or private records concerning the installation of agricultural BMPs. But Haralson County farmers have, by and large, not taken advantage of the help with BMPs offered by agencies like the USDA Farm Service Agency and the Natural Resource and Conservation Service. There doesn't appear to be many chicken houses in the area except for one regular sized one and a half sized one. This is not to definitively say these poultry & livestock operations are causing the problem, but to note their presence and their potential to contribute to elevated fecal coliform levels.

As there is little commercial, industrial, or residential land use in this watershed, urban runoff doesn't have much of a geographic extent to contribute and also is limited in its contribution to any contamination.

Failing septic tanks are a potential source as the area is mostly on septic - though it is sparsely populated area. There is some sewer extended past Tallapoosa city limits, including a large development to the south (The World Children's Center) and most but not all of the city of Tallapoosa is on sewer. The soils of Haralson County are also recognized to typically be better suited for onsite sewage systems than the rest of Northwest Georgia. The status of septic systems is hard to determine because they are on private property, underground, and because they typically don't exhibit signs of the potential to fail until they fail unless they are regularly maintained. When they do fail they are commonly recognized and fixed by trained installers with the oversight of the Environmental Health Department. Rarely but still on occasion, failing septic systems are not apparent to the human eye because they lack the common signs of bubbling up sewage or unusually green grass – what's called 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.

Stakeholder input identified commercial forestry as the largest land use in the sub-watershed. It is unknown if this contributes to the fecal coliform impairment beyond serving as a habitat for wildlife.

There is a large reservoir near Walker Creek's confluence with the Tallapoosa River of unknown ownership- possibly the City of Tallapoosa's water supply.

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		3		1	3
Agricultural Runoff		3		3	9
Urban Runoff		.5		.5	.25
Leaking Septic Tanks		1		3	3
Silvicultural Runoff		3		.5	1.5

V. CURRENT AND ACTIVE MANAGEMENT MEASURES AND ACTIVITIES

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

Haralson County Management Measures

- Issues its own Erosion and Sedimentation Control Permits, with the Building and Zoning office doing the permitting and the zoning administrator assuring compliance.
- Not adopted any of the voluntary plans/ordinances jointly issued by the state Department of Community Affairs and the EPD i.e. the Part V the Environmental Planning Criteria: river corridor, water supply watershed, wetland, and groundwater recharge area protection plans.
- No mandated riparian buffers beyond the state minimum of 25 feet.

City of Tallapoosa Measures

- EPD issues ES&C Permits, with the EPD Mountain District ensuring compliance with the permits.

- Ordinances concerning Water Supply Watershed and Wetland Protection in voluntary accordance with two provisions of the Part V Environmental Planning Criteria.

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 GFC conducts BMP Assurance Examinations on site to educate loggers about BMPs and to respond to any complaints. 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. Haralson Count is in GFC District 4 (Newnan).

Developments of Regional Impact

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

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

The following BMPs in Table 5A are ones being used in all of Haralson County, and should not be taken as what BMPs are necessarily installed in the watershed, though they might be representative of BMPs particular to Walker Creek. They were all installed using the USDA Natural Resources Conservation Service (NRCS) and Farm Services Agency (FSA) programs. The most widely used programs representative of Haralson County’s utilization of BMP funding are the Environmental Quality Incentives Program (EQIP), Continuous Conservation Reserve Program (CCRP), and Wildlife Habitat Incentive Program (WHIP). Like the BMPs, these funding sources might not all be used in the watershed or they might not be used at all in the watershed.

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)
No-Till Planting (NRCS#329)	NRCS/Contracted Agricultural Producer	364 acres were planted in Haralson County using this low-impact procedure that prevents erosion in which crops are grown on areas that have previously not been tilled using specialized (often rented) equipment	UNK or Various	Agricultural runoff: row-crop soil erosion.	2007-2009	
Forest Stand Improvement (NRCS#666)	NRCS/Contracted Agricultural Producer	200 acres of forestland in Haralson had this measure applied, which consists of manipulating species of trees by cutting or killing selected trees and understory vegetation.	UNK or Various	None	2007-2009	1: None as Not applicable
Heavy Use Area Protection (NRCS#561)	NRCS/Contracted Agricultural Producer	4 ac. in Haralson: The establishment of vegetation and/or the installation of erosion prevention materials that protect areas where heavy traffic is expected. Not recommended directly for FC, but can reduce the runoff that FC can travel with	UNK or Various	Agricultural runoff : Livestock Soil Erosion	2007-2009	1
Prescribed Grazing (NRCS#528)	NRCS/Contracted Agricultural Producer	608 ac. in Haralson: A grazing system that promotes vegetative quality and quantity by managing grazing animals to promote stand longevity animals.	UNK or Various	Agricultural runoff: row-crop soil erosion	2007-2009	1
Fence (NRCS# 382)	NRCS/Contracted Agricultural Producer	12,918 feet installed in Haralson. These barriers limit animal, human and/or wildlife entry into specified areas and water sources. When used to exclude cattle from creeks, it can prove to be very effective in reducing FC.	UNK or Various	Fecal Matter from Wildlife and/or livestock	2007-2009	1-5, depending on type of fencing & buffer establishment
Forage Harvest Management (NRCS #511)	NRCS/Contracted Agricultural Producer	90 ac. in Haralson: Management system designed to maximize yield and forage quality and to reduce erosion and water quality degradation by maintaining forage stand.	UNK or Various	Agricultural Runoff: Soil Erosion from Hay/Grazing land.	2007-2009	1
Waste Storage Facility (NRCS#313)	NRCS/Contracted Agricultural Producer	1 Facility in Haralson: A storage facility constructed to temporarily store waste, wastewater and contaminated runoff as part of an agricultural waste management system. Reduces fecal coliform by up to 96% when waste is held for 2 weeks.	UNK or Various	Agricultural Runoff: Fecal Matter from Poultry, Livestock.	2007-2009	3-5: Depending on GA rating vs. NRCS rating
Upland Wildlife Habitat Management (NRCS# 645)	NRCS/Contracted Agricultural Producer	339 ac. in Haralson: Planting and managing trees, shrubs, and other vegetation that provide cover and food will attract wildlife to area.	WHIP	Agricultural Runoff: Soil Erosion Not defined as applicable to FC	2007-2009	.5 to actually increasing FC if wildlife have substantial impact

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Prescribed Burning (NRCS # 338)	NRCS/Contracted Agricultural Producer	Controlled fire applied to a predetermined area to, among other purposes, control undesirable vegetation, improve wildlife habitat, and restore and maintain ecological sites. It can also have a slight effect on streambank erosion and runoff into streams.	UNK or Various	Agricultural Runoff: Soil Erosion Not defined as applicable to FC	2007-2009	.5
Composting Facility (317)	NRCS/Contracted Agricultural Producer	1 facility in Haralson: used to dispose of carcasses and waste in a sanitary method that results in a usable soil additive by-product.	UNK or Various	Agricultural Runoff: Bacteria from decomposing waste & carcasses	2007-2009	1-3, depending on prior load
Comprehensive Nutrient Management Plan (NRCS #103)	NRCS/Contracted Agricultural Producer	2 Properties with Plans in Haralson: A site-and owner-customized conservation plan that is unique to animal feeding operations. It is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on water quality, which may derive from an AFO.	UNK or Various	Agricultural Runoff: Fecal Coliform from livestock waste	2007-2009	Based on number of BMPs in plan and effectiveness on the farms' prior issues of waste and erosion.

LRP Sources: Best Management Practices for Georgia Agriculture. The Georgia Soil and Water Conservation Commission; NRCS National Conservation Practices Standards (NHCP): Conservation Practice Information Sheets; Booklet: Conservation Choices: Your guide to 30 conservation and environmental farming practices. USDA NRCS. Des Moines, IA. June 2007.

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	3	N/A	N/A	N/A
Leaking Septic Tanks	3	N/A	N/A	N/A
Agricultural Runoff	9	Heavy Use Area Protection Prescribed Grazing Fence Forage Harvest Management Waste Storage Facility Upland Wildlife Habitat Management Prescribed Burning Composting Facility Comprehensive Nutrient Management Plan	N/A	If BMP implementation is judged by qualified experts & stakeholders to be inadequate, modification based off of targeted water monitoring and/or assessment should be considered
Urban Runoff	.25	N/A	N/A	N/A
Silvicultural Runoff	1.5	N/A	N/A	N/A

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

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

Table 5B. RECOMMENDED NEW MANAGEMENT MEASURES AND ACTIVITIES

APPLICABLE TO CRITERION 1: Fecal Coliform.

NEW BMPs (1)	RESPONSIBILITY (2)	DESCRIPTION (Identify whether new or enhanced) (3)	FUNDING & RESOURCES (4)	IMPAIRMENT SOURCES (5)	TARGET DATE (6)	NEW BMP LRP RATING (7)
Agricultural BMPS	Farmers; USDA; local environmental groups	New and Enhanced	Various	Agricultural Runoff	TBD	UNK
Education of homeowners concerning stormwater BMPs	Haralson County	New	Various	Urban Runoff	TBD	UNK
Septic Tank BMPs: Educational and Structural Programs	County Environmental Health Office; and concerned citizens.	Enhanced from existing Environmental Health outreach with their pamphlets. Possibly new with 319 (h) grant program.	Various	Failed Septic Tanks	TBD	UNK

VI. MONITORING PLAN

This section describes parameters to be monitored, status, whether monitoring is required for watershed assessments or 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 (1)	RESPONSIBLE ENTITY (2)	STATUS (CURRENT, PROPOSED, OR RECOMMENDED) (3)	TIME FRAME (4)		PURPOSE (If for listing assessment, date of SQAP submission) (5)
			START	END	
E. coli	County Extension Coordinator/ County Building Permit Officer/	Proposed	2008	TBD	Get more current data on water quality with Adopt-a-Stream program; identify multiple sampling sites (including at tributaries) in order to narrow down potential sources based on land use surrounding sites.
E. coli and/or FC, with possibility for more	Outside water quality expert – perhaps from UWG	Proposed	Contingent upon initial results of preliminary screening.		If the preliminary screening shows there is a sufficient enough problem to hire an outside consultant, either do sampling of the full slate of parameters in a monitoring plan or just monitor FC, depending on budget constraints.

- Enlisting the assistance of 4-H volunteers through the Haralson County Extension Office, and with the supervision of the County Extension personnel, teachers, and city/county personnel, an Adopt-a-Stream program will commence in Haralson County, specifically for the Little River and Walker Creek watersheds. The samples can be taken by the children under adult supervision, and the lab work can be done by a local science teacher or other interested adult. Other interested persons, including older children such as high schoolers can also be brought in to increase both the outreach and to obtain more data. Expanding beyond just 4-Hers could also make sure someone is sampling over the summer, when school is out.
- A monitoring plan should be drafted by the coordinating partners with the help from Adopt-a-Stream staff, which should include the parameter(s) to be studied, the sampling sites, any permissions from landowners necessary if sites are on private property, and the frequency of sampling. Sampling sites should be placed at or directly below the mouth of feeder streams and other tributaries, along with other points along the segment, in order to narrow down the possible sources. Also to be discussed would be identification of other partners in this effort, delegating specific responsibilities, and securing funding for such a program.

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)
Haralson County Office of Environmental Health/DPH	Conduct outreach concerning proper septic tank installation and maintenance with instructional pamphlet and DVD.	New Homeowners, homeowners who had their failing system repaired, and any other interested Haralson County homeowner	Ongoing
4-H program leader/County extension	Conduct in-class workshops tied to field trips to local waterways to educate children on water quality and quantity issues; can be tied into Project WET and Adopt-a-Stream program or separated.	Haralson County and city elementary schoolchildren.	Proposed: Implementation timeline TBD
Haralson County	Targeted outreach to home- and landowners in pollution prone areas concerning the BMPs available to control runoff; septic tank maintenance; and other practices which protect water quality	Haralson County landowners & homeowners who live either on the red-lined listed segment or in close proximity in the watershed.	Proposed: Implementation timeline TBD
Haralson County and its municipalities	General environmental outreach using PSAs through bulk mailings, radio & print media, tips included on water bills, and other mediums.	Residents of Haralson County	Proposed: Implementation timeline TBD

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.
Heavy Use Area Protection		USDA NRCS		x	
Prescribed Grazing		USDA NRCS		x	
Fence		USDA NRCS		x	
Forage Harvest Management		USDA NRCS		x	
Waste Storage Facility		USDA NRCS		x	
Upland Wildlife Habitat Management		USDA NRCS		x	
Prescribed Burning		USDA NRCS		x	
Composting Facility		USDA NRCS		x	
Comprehensive Nutrient Management Plan		USDA NRCS		x	
Onsite sewage outreach		GADPH/ Haralson County Environmental Health			x
Outreach to schoolchildren		4-H; County Extension			x
Targeted Outreach to Watershed Residents and commercial interests		Haralson County			x
General Environmental Outreach to Public thru PSAs		Haralson County and its Municipalities			x
Adopt-a-Stream Water Monitoring		Extension Office; 4-H; Haralson County Building Inspector; other partners as identified			x
Intensive Water quality sampling		Haralson County/ Contracted Environmental Consultant			x

X. 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. Patrick Clarey, Tallapoosa Planner, attended and was the representative for the Walker Creek watershed. 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 it generated very few responses.

A total of two other meetings were held for Haralson County. The initial outreach and informational meeting occurred on May 12, 2009 and was attended by 16 people, including 3 staff persons from the Northwest Georgia Regional Commission. It was mostly government officials from the municipalities, county, sewer & water, and environmental health sections. The other stakeholder representation came from 3 farmers and a local farmer who also serves West Georgia Soil & Water Conservation District supervisor. It was a somewhat difficult but ultimately successful meeting with the main source of contention arising from the lack of current data on the two Haralson County waterways, and the uncertainty arising from the source of funding for new water sampling. There was also to-be-expected difficulty in pinpointing the vague non-point sources. But it served as a good meeting to introduce all involved to the process of TMDL planning and the potential benefits that come from completing a plan.

Another public meeting was held on July 13, 2009 and it was attended by 9 people, mostly the same persons who attended the earlier meeting. This was a very productive meeting, with it getting the ball rolling on many positive efforts: starting up an Adopt-a-Stream program with the 4-H club members, reviewing county ordinances concerning water pollution, and conducting both general and watershed-targeted public outreach campaigns that seek to spread the word about BMPs and shared responsibility in maintaining a healthy watershed. These programs were the result of the brainstorming and cooperation of those present. It was requested that the attendees read over the draft plans and submit comments on them. This request was honored with some constructive review of the plans.

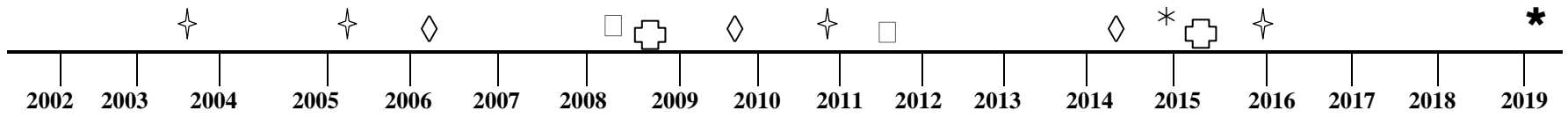
Table 9. STAKEHOLDER ADVISORY GROUP MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Charlie Walker/ Haralson County Water Auth.	P.O. Box 429	Buchanan	GA	30113	(770)646-5375	Hch20@bellsouth.net
Jackie Holcombe/ Haralson County Water Authority	P.O. Box 429	Buchanan	GA	30113	(770) 646-6633	
Billy Sims/ West Georgia Soil & Water Conservation District	969 7 th Court Ground	Bremen	GA	30110	N/A	N/A
John Congleton/ University of West Georgia	1601 Maple St.	Carrolton	GA	30018	(678) 839-4066	jconglet@westga.edu
Jacki Congleton/Terra Consulting	PO Box 1738	Carrollton	GA	30112	(770) 573-3055 (404) 402-4246	jacki@terraconsultingllc.com
Dean Tanner/ City of Buchanan						dtanner@buchana.ga.com
Jason Robinson/ City of Bremen WPCP					(770) 537-4873	
Patrick Clarey/ City of Tallapoosa Planning	25 East Alabama St.	Tallapoosa	GA	30176	(770) 574-2345	tallyplanning1@bellsouth.net
Susan Pullen/ Rolling Hills RC & D	512 Main Street	Cedartown	GA	30125	(770) 490-5916	nspullen@bellsouth.net
Joe Griffith/ Farmer						gwhizfarms@aol.com
Stanley Williams/ Farmer						stanleyPWilliams@aol.com
Keith R. Williams/Farmer					N/A	N/A
Melissa Sherman/ Haralson County Environmental Health Department	133 Buchanan Bypass, P.O. Box 40	Buchanan	GA	30113	770/646/9212	masherman1@dhr.state.ga.us
Paul E Thompson/ UGA Cooperative Extension	P.O. Box 10	Buchanan	GA	30113-0010	770/646/2026	pault3@uga.edu

Sam Sharpe/USDA NRCS	408 N WHITE ST	Carrollton	GA	30117-2441	770/ 832/8942	sam.sharpe@ga.usda.gov
Patrick Clarey/ City of Tallapoosa Planning Dept.	25 East Alabama St.	Tallapoosa	GA	30176		tallyplanning1@bellsouth.net
Allen Poole/ Haralson County Board of Commissioners	P.O. Box 489	Buchanan	GA	30313	770-646-2002	h_ofc@bellsouth.net

PROJECTED IMPLEMENTATION TIMELINE

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



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

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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.

NAME/ORGANIZATION	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Billy Sims/ West Georgia Soil and Water Conservation District	969 7 th Court Ground	Bremen	GA	30110		
Dr. John Congleton/University of West Georgia	1601 Maple St.	Carrolton	GA	30018	678/839-4066	jconglet@westga.edu
Jacki Congleton/Terra Consulting	PO Box 1738	Carrollton	GA	30112	(770) 573-3055 (404) 402-4246	jacki@terraconsultingllc.com
Charlie Walker/ Haralson County Water Department	P.O. Box 429	Buchanan	GA	30113	770/646/5375; 770-646-6633	Hch20@bellsouth.net
Jackie Holcombe/ Haralson County Water Authority	P.O. Box 429	Buchanan	GA	30113	(770) 646-6633	
Susan Pullen/ Rolling Hills RC& D	512 Main Street	Cedartown	GA	30113	770/490/5916	nspullen@bellsouth.net
Dean Tanner/ City of Buchanan		Buchanan	GA	30313		dtanner@buchana.ga.com
Joe Griffith/ Farmer						gwhizfarms@aol.com
Stanley Williams/ Farmer						stanleyPWilliams@aol.com
Keith R. Williams/Farmer					N/A	N/A
Paul E Thompson/ UGA Cooperative Extension	P.O. Box 10	Buchanan	GA	30113-0010	770/646/2026	pault3@uga.edu
Melissa Sherman/ Haralson County Environmental Health Department	133 Buchanan Bypass, P.O. Box 40	Buchanan	GA	30113	770/646/9212	masherman1@dhr.state.ga.us

Sam Sharpe/USDA NRCS	408 N WHITE ST	Carrollton	GA	30117-2441	770/ 832/8942	sam.sharpe@ga.usda.gov
Jason Robinson/ Bremen, Buck Creek Wastewater Treatment Plant					770/537/4873	
Patrick Clarey/ City of Tallapoosa Planning Dept.	25 East Alabama St.	Tallapoosa	GA	30176		tallyplanning1@bellsouth.net
Allen Poole/ Haralson County Board of Commissioners	P.O. Box 489	Buchanan	GA	30313	770-646-2002	h_ofc@bellsouth.net

**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.**

During the land use verification, visual creek survey, the stated predominant land uses of forestry and agriculture were verified. Yet as stated above in the individual stream characterization, the agricultural categories of row crops and pastureland, hay fields were seen to be reversed with much more hay production and grazing land than row crop land, little of which was observed. It was a rainy day on March 27, 2009 so the water was high and muddy and the flow was strong. The rain did give the surveyors the opportunity to see the effects of the runoff upon the river – the sediment runoff with possibly bacteria travelling along with the soil – plus the effectiveness of various types of stormwater best management practices. There was one stream crossing in the countryside where unimpeded cattle access to the creek was documented, as seen in the one of the below photographs. There were some chicken and horse farms in the vicinity of the creek. The road crossings that were visited were: GA Hwy 100, Stone Mountain Street (Old Hwy. 100), Kelley Creek Road, and Providence Church Road.







Appendix D: Sources

www.georgiastats.uga.edu

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

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

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E-mail Correspondence with Patrick Clarey, City of Tallapoosa, Planning Coordinator. 7/22/2009

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