

STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN REVISION 1

Segment Name Coahulla Creek
Coosa River Basin
April 28, 2006

Local Watershed Governments Whitfield County,
Cities of Dalton, Varnell and Cohutta

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 pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.

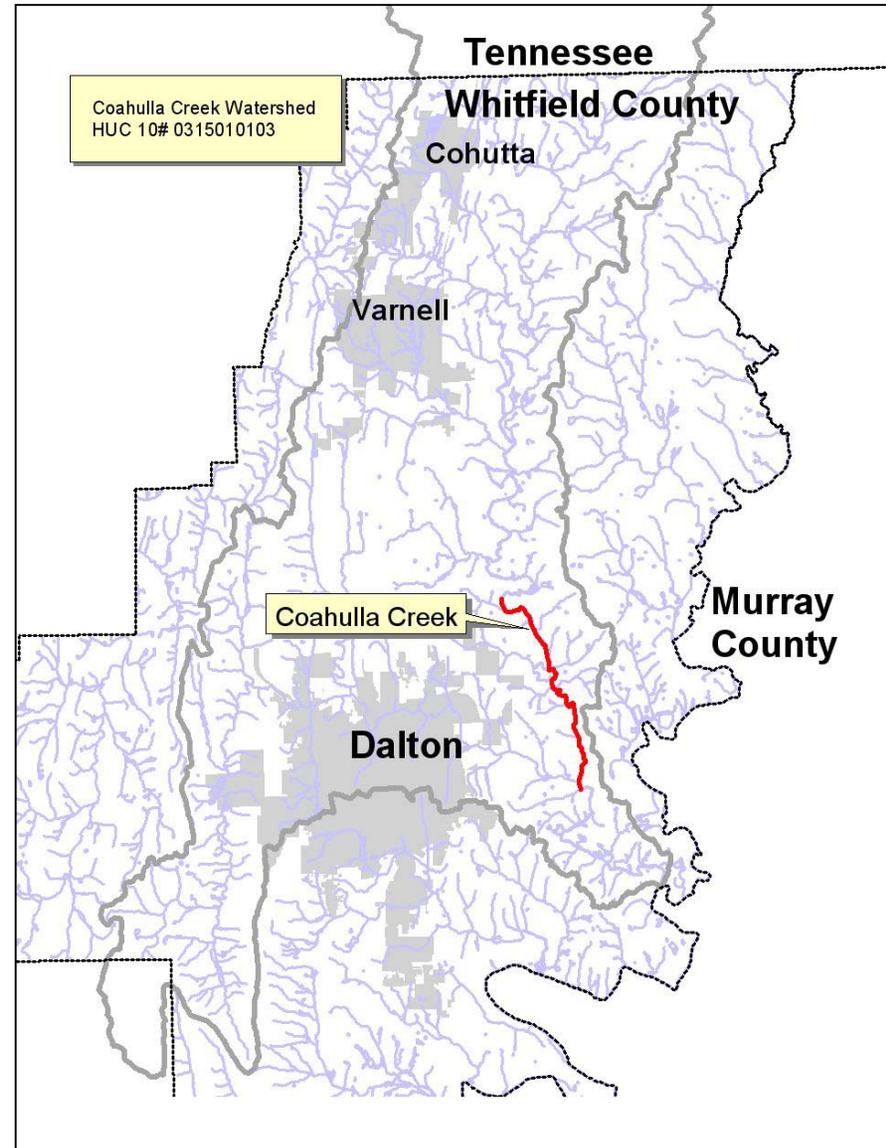


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Coahulla Creek	Below County Road 728 to Mill Creek	Fecal Coliform Bacteria	CSA0000010

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10# 0315010103. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features that could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities that could influence water quality. See the “Instructions for Completing the Georgia Total Maximum Daily Load (TMDL) Tier 2 Implementation Plan” for more information on what to include.

Coahulla Creek watershed (HUC10# 0315010103) is comprised of 74,685 acres within the portion located in Georgia. A considerable portion of the watershed also extends into Tennessee. The portion in Georgia is located entirely in Whitfield County. One of the stream segments identified by the Georgia Environmental Protection Division’s 303(d) list in HUC 10 # 0315010103 is Coahulla Creek from below County Road 728 to Mill Creek. The northern areas of the watershed are very rural and sparsely settled. There are three municipalities located in the watershed including Dalton, Varnell and Cohutta. The southern areas of the watershed are more intensely developed, particularly around and within the City of Dalton, which has a population of approximately 31,000 persons. Major highways traveling through the watershed include State Routes 71, 2, 201 and 52, and U.S. Routes 41 and 76 and Interstate 75. The following land use data is for that portion of the watershed contained only within Whitfield County. The data is derived from land use surveys conducted in conjunction with a Comprehensive Plan update completed in 2002. These acreages and percentages may differ from the land cover information provided in the TMDL.

Coahulla Creek Watershed HUC 10 # 0315010103

Land Use Classification	Area (Acres)	% of total area
Agriculture	16228.1	21%
Conservation	2155.5	3%
Commercial	1111.2	1.50%
Industrial	1527	1.50%
Public, Institutional	837.8	1%
Residential	12484.8	17%
Transportation, Communication, Utilities	258.4	<1%
Right of Way	3225.5	4%
Vacant	36321.4	49.00%
Water	535.8	1%
Total	74685.5	100%

As seen in the adjoining table, a moderate percentage of land use within the watershed is vacant (49%). Agriculture represents 21% of land use and consists of primarily of pastures for cattle and horse grazing as well as 30 poultry producers. The next largest land use category is residential at 17%. Residential land use is scattered throughout the watershed in the form of developed subdivisions and scattered lots located along county roads. Residential concentrations are found within the cities of Dalton, Varnell and Cohutta. The most densely settled areas are in Dalton. Residential development is steadily increasing throughout the watershed. Dalton Utilities provides sewer service within the city of Dalton, and also provides sewer service to some areas in the incorporated areas along Cleveland Highway and areas located north and east to the city of Dalton that are located in this watershed. There is also a private wastewater system located on Bay Drive. The remainder of the watershed is primarily served by individual septic systems. Dalton and Whitfield County are Phase II permitted MS4s and are

Source: Whitfield County Comprehensive Plan, February, 2002
in the process of developing a storm water management program.

Coahulla Creek is a major source of water supply for Dalton Utilities, which provides potable water to Whitfield County, approximately 10% of Murray County, and small portions of Gordon and Catoosa Counties. A Source Water Assessment (SWAP) was completed in August, 2001 by Dalton Utilities. As it concerns potential sources of fecal coliform, the SWAP identified 30 CAFOs in the watershed, which were presumed to be

poultry houses. There are also two sewer lift stations and two NPDES permits (Varnell Elementary School and Whispering Pines Mobile Home Park) located in the watershed.

Whitfield County has prepared and adopted a Greenspace Conservation Plan, which recommends the preservation of permanent greenspace within all floodplains within the County including those along Coahulla Creek. This plan is proposed to be implemented via voluntary conservation easements. Since Coahulla Creek is a water supply watershed, watershed streams will also be subject to the Georgia Planning Act Part V Environmental Protection Regulations promulgated by the Georgia Department of Community Affairs and the Georgia Environmental Protection Division.

Major organizations, which are pursuing water quality improvements in the watershed include The Nature Conservancy, which works closely with landowners, government agencies, and industries to establish best management practices, restore and protect riparian habitat, and establish permanent conservation easements; the Conasauga River Alliance, whose goals are to educate local citizens regarding water quality issues, and conduct demonstration projects such as re-establishing riparian buffers, stream bank restorations, and implementing agriculture best management practices; and the Natural Resource Conservation Service, who works with farmers to implement agriculture best management practices. Dalton Utilities also strives to protect the environment and is a member of various associations and partnerships that focus on environmental issues. Dalton Utilities has also enlisted assistance from these groups on several occasions such as coordinating with The Nature Conservancy for stream buffer restoration projects on land owned by Dalton Utilities that borders the Conasauga River. The utility has purchased some land upstream that may erode water quality. In addition, the utility has implemented various security measures, such as restricted access, to protect the water quality at the raw water intake and water treatment plant.

{COAHULLA CREEK}

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Coahulla Creek	Below County Road 728 to Mill Creek	5	Fishing	NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with the information found in the TMDLs. List each parameter for which the stream segment is impaired and the water quality standard not met. See the “Instructions for Completing the Georgia Total Maximum Daily Load (TMDL) Tier 2 Implementation Plan” for the water quality standards. Enter the needed reduction from the TMDL. Describe the sources and causes of each impairment identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLS

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fecal Coliform	1,000 per 100 ml (geometric mean Nov. – April) and 200 per 100 ml (geometric mean May - Oct.)	Non-point - Failing Septic Systems, Agriculture operations (poultry, cattle)	89%

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the extent and relative contributions from causes or sources of the impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include: 1) involvement of stakeholder group; 2) review of land cover data; 3) field surveys; and 4) other pertinent sources of information consulted.

Coahulla Creek HUC 12 Watershed

Land Use Classification	Area (Acres)	% of total area
Agriculture	2904.2	18%
Conservation	35.9	<1%
Commercial	97.6	<1%
Industrial	410.1	2.50%
Public, Institutional	88.5	<1%
Residential	3433.1	21%
Transportation, Communication, Utilities	5.5	<1%
Right of Way	607.7	4%
Vacant	8211.6	51.00%
Water	186.9	1%
Total	15981.1	100%

Members of the Whitfield County Stakeholders Advisory Group represent the County Land Development Office, County Environmental Health Office, farmers, Dalton Utilities, the Conasauga River Alliance, the Natural Resources Conservation Service, the City of Dalton, landowners and the Georgia Soil and Water Conservation Commission. A discussion of land use within the HUC 12 watershed that contains the impaired stream segment with stakeholders indicated that the watershed is a rural area of the county containing residential, agricultural and forestry land uses and vacant land.

A review of aerial photography and recent land use data compiled for the County's 2002 Comprehensive Plan update confirms information provided by the stakeholders. Field surveys were also conducted in winter of 2006. (See Appendix C for results of the Visual Survey).

Source: Whitfield County Comprehensive Plan, February, 2002

Based upon land use data and the visual surveys, the potential sources of impairment within the watershed include:

- 1. Malfunctioning Septic Systems/Straight Pipes.** The Whitfield County Environmental Health office reported that it issued 358 new septic system permits and 235 system repair permits county wide in FY 2005. Per the TMDL, 6,444 septic systems were installed between 1990 and 2000 with 1,422 repaired during that period. The total estimated number of septic systems county wide in 2001 was 23,385. A study conducted by the North Georgia Regional Development Center in January, 2000 concluded that system failures are common throughout the county. There are 3,433 acres of residential land use within the HUC 12 watershed area, all of which is on individual septic systems. At an

average density of approximately 2 acres per housing unit, it is estimated there are 1,600 - 1,700 septic systems in the HUC 12 watershed area. National studies have indicated that as much as 10 percent of older homes and 2% of middle aged houses located within 45 meters of a stream have used straight pipes. Visual observations noted that there are a number of residences located relatively close to the many streams in the watershed, with a few located directly on Coahulla Creek.

2. **Agricultural Activities, Pasture Run-off & Poultry Operations.** There are over 2,904 acres of agricultural land within the HUC 12 watershed area consisting primarily of small cattle and horse grazing areas. The Natural Resource Conservation Service estimated that in 2001 there were approximately 15,000 beef and 320 dairy cattle located throughout Whitfield County. Stakeholder comments indicated that the dairy cattle operations no longer exist, and that cattle populations may be reduced. Visual observations indicated that there were many cattle and/or horse grazing areas within the watershed, many of which are located adjacent to streams and have direct access to the streams for drinking water. There are also 4 poultry producers within the HUC 12 watershed area, which may spread poultry manure on pasture land within the watershed. These are also located in relatively close proximity to the impaired segment.
3. **Wildlife.** 8,211 acres (51%) of the HUC 12 watershed containing the impaired segment is vacant or forested land that contains a variety of wildlife. The most populous large species is deer estimated by the Georgia Department of Natural Resources at 25 animals per square mile. Visual observations also noted that other species include duck, geese, and turkey within the watershed.
4. **Wastewater Sewage Treatment and Collection Facilities.** Approximately 200 acres in the watershed are served with public sewer services. There are also two lift stations. There are also two NPDES permitted wastewater treatment facilities (Manufactured Home Park and Elementary School) located in the HUC 12 watershed.

Combining information provided in the TMDL document, stakeholder knowledge, existing watershed assessments, and the watershed evaluation conducted for this plan, identify the potential sources or causes most likely to contribute to each identified impairment (parameter) in Table 3. If available information is inadequate to estimate the extent and relative contribution of significant potential sources or causes, recommend appropriate management actions (watershed assessments, monitoring, etc.) to determine the potential sources or causes and relative contributions. In Table 3, list the significant potential sources or causes of each impairment. Estimate the geographic extent of each potential source or cause as percent of the contributing watershed area, percent of stream miles affected, or number per square mile and enter the appropriate rating (from the following table) in the column entitled "Rating (A)". Estimate the relative contribution of each major source or cause to the pollutant causing the impairment and enter the appropriate rating (from the following table) in the column entitled "Rating (B)". Calculate a relative impact ratings for each source or cause by multiplying "Rating (A)" by "Rating (B)". Comments on the source of information used to determine the extent or contribution may be entered in the applicable columns in Table 3.

The following table provides guidance for rating the estimated extent and portion of the contribution from each potential source and cause.

Estimated Geographic Extent of the Source or Cause in the Contributing Watershed (Percent of area or stream miles)	Estimated Contribution of the Source or Cause to the Pollutant Load Causing the Impairment (Percent of load)	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 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

PARAMETER 1: Fecal Coliform

POTENTIAL SOURCES OR CAUSES	ESTIMATED EXTENT OF CONTRIBUTION		ESTIMATED PORTION OF CONTRIBUTION		IMPACT RATING (A X B)
	Comments	Rating (A)	Comments	Rating (B)	
Malfunctioning Septic Systems or straight pipes to streams	Residential use is 21 % of land area and all is on septic systems	3	Approximately 10% of all home lots are located adjacent or proximity to streams	1	3
Active pasture run-off - cattle & horse access to streams	Agricultural use is 18% of land area	1	Cattle/horse grazing adjacent to streams is frequently located throughout the watershed	3	3
Wild animal waste	Vacant, and undeveloped land is 51 % of land area	.5	Mostly deer habitat is located throughout the watershed, although other species such as turkey, duck and geese are also found .	1	.5
Poultry Operations	There are 4 major poultry operations	1	All are located in relatively close proximity to the impaired segment.	1	1
Sewage System Leaks and spills	Less than 1% of the watershed is served with public sewer.	.5	Approximately 200acres of watershed are served by public sewer services or other NPDES permitted treatment systems.	.5	.25

V. STAKEHOLDERS PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment. Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

On October 18, 2005, NGRDC in partnership with the CVRDC and the Northwest Georgia Regional Water Resources Partnership conducted a workshop entitled "**Clean Water- the TMDL Link**", at the Northwest Georgia Trade and Convention Center located in Dalton. This workshop was attended by a number of Whitfield County residents and officials. This workshop provided excellent information on the TMDL process, its requirements, the potential causes for stream impairments, and the various tools that can be utilized to clean up the rivers.

A meeting of the Stakeholders Advisory Committee was held on February 16, 2006, which was well attended by the members, NGRDC personnel, and Mary Gazaway of Georgia EPD. At the meeting, the RDC presented information regarding the Clean Water Act requirements, the list of impaired streams in Whitfield County, water quality monitoring data and the TMDLs that had been prepared by Georgia EPD. The RDC led a discussion on possible sources for the pollutant parameters by explaining its efforts to identify and verify potential pollution sources via visual surveys and land use analysis throughout the watershed. NGRDC also sought input from the Advisory Committee members concerning land use and other activities, which may be sources. NGRDC also presented draft program measures deemed necessary to reduce the amount of fecal coliform entering the streams in the watershed. Members of the Stakeholders Committee concurred with the proposed implementation measures.

List the watershed stakeholder advisory group committee members, described in Project Task #1 of the Scope of Services, in following table.

Table 4. STAKEHOLDER ADVISORY GROUP MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Lenard Whaley, Whitfield County Administrator	P.O. Box 248	Dalton	GA	30722	706-275-7500	blove@whitfieldcountyga.com
Jean Garland, Whitfield Co. Zoning Administrator	1407 Burleyson Drive, Suite 1	Dalton	GA	30720	706-275-7474	jgarland@whitfieldcountyga.com
Jerrel Autry, Whitfield Co. Environmental Health Specialist, County Health Dept.	1407 Burleyson Drive	Dalton	GA	30720	706-272-2005	whitenv@yahoo.com

Donald Baldrige, Land owner	2132 Beaverdale Road	Dalton	GA	30721		
Frank Sagona, Conasauga River Alliance	125 Redbud Rd. NE. Suite 7	Calhoun	GA	30703	706-625-7044	fjsagona@aol.com
John Lughart, Dalton State College	650 College Drive, Division of Natural Sciences	Dalton	GA	30720	706-272-2485	Jlughart@daltonstate.edu
Paul Johnson, SE Aquatic Research Institute	5385 Red Clay Road	Cohutta	GA	30710	706-694-3957	
Cindy Askew, Natural Resource Conservation Service	1407 Burleyson Drive	Dalton	GA	30720	706-638- 2207, ext 3	Cindy_askew@ga.usda.gov
John Loughridge, Ga. Soil and Water Conservation Commission	700 East 2 nd Avenue, Suite J	Rome	GA	30161	706-295-6131	jloughridge@gaswcc.org
Dena Haverland, Dalton Utilities	P.O. Box 869	Dalton	GA	30722	706-278-1313	dhaverland@dutil.com
Mark Marlow, Dalton Utilities	P.O. Box 869	Dalton	GA	30722	706-278-1313	mmarlow@dutil.com
Walter Parsons, City of Dalton Assistant City Administrator	P.O. Box 1205	Dalton	GA	30722	706-529-2401	wparsons@cityofdalton-ga.gov
Shawn Clouse, The Nature Conservancy	109 King Street, Suite 1	Dalton	GA	30720	706-279-9001	sclouse@tnc.org

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for 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, as described in Project Task #1 of the Scope of Services. (See Appendix A.)

VI. MANAGEMENT MEASURES AND ACTIVITIES

Identify and list in Table 5A the significant management measures or activities which have or will be taken in the contributing watershed to address sources or causes of the impairment(s). List significant management measures and activities in Column 1 and responsible organizations in Column 2. Describe the measure or activity in Column 3 and sources of funding or resources in Column 4 (you may wish to adapt the generic language included in the “Standard Language for Management Measures and Activities” to local applications). In Column 5, enter one of the following codes describing the status of the measure or activity: (A) installed and active; (AE) active and **will be** enhanced or expanded; (R) required in the future by law, regulation or permit conditions; (P) currently proposed, but not required; and (N/R) **additional new recommended** or (N/E) **recommended enhanced** management measures and activities. In Column 6 enter the rating of the estimated existing or proposed extent of application of the measure or activity or percentage of individual sources to which the management actions have or will be applied (see the following table). In Column 7 enter a rating of the estimated effectiveness of the management measures and activities (see following table). Effectiveness may be estimated by local experts or derived from tables included in the “Standard Language for Management Measures and Activities”.

The following table provides guidance for rating the estimated extent and portion of the contribution for each significant potential source and cause.

Estimated Extent of Application or Percentage of Individual Sources to Which the Management Measure or Activity Has or Will be Applied in the Contributing Watershed	Estimated Effectiveness or Percent Removal of Constituent (Percent of load)	Rating
None or negligible (approximately 0-5%)	None or negligible (approximately 0-5%)	.5
Scattered or low (approximately 5-20%)	Low to medium (approximately 5-25%)	1
Medium (approximately 20-50%)	Medium to High (approximately 25-75%)	3
Widespread or high (approximately 50% or more)	High (approximately 75% or more)	5
Unknown	Unknown	UNK

Table 5A. MANAGEMENT MEASURES AND ACTIVITIES

GENERAL MEASURES APPLICABLE TO ALL PARAMETERS

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCES OF FUNDING & RESOURCES	STATUS CODE	TARGET DATE	EXTENT RATING (Area, #)	EFFECT. RATING (Reduction)
Georgia Water Quality Control Act (OCGA 12-5-20)	Ga. Environmental Protection Division	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal wastes, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats	Federal, State, Local Governments	A	In place, on-going		
GA Part V Environmental Protection Regulations for Water Supply Watersheds	Whitfield County	Implement minimum standards for Water Supply Watershed Protection including mandatory setbacks and buffer areas on all streams above the Coahulla Creek public water intake.	Local Government	R	1/1/2007		

MEASURES APPLICABLE TO SPECIFIC PARAMETER: Fecal Coliform Bacteria

MEASURE	RESPONSIBILITY	DESCRIPTION	POTENTIALSOURCES OF FUNDING & RESOURCES	STATUS	TARGET DATE	EXTENT RATING	EFFECT. RATING
Rules and Regulations for On-site Wastewater Management	Whitfield County Board of Health, Environmental Health Office	Stringent application/enforcement of the regulations	Local county government/ State Department of Human Resources	A	In place; on-going	5	5 (in new development)
Septic System Repair Assistance Program	Conasauga River Alliance.	Administer State/Federal grants to cost/share with land owners the repair of failing systems or install new systems to replace straight pipes	Section 319(h) Grant through Ga. Environmental Protection Division (60% grant/40% match)	NR	1/1/2007 through 6./30/2010	3	5
Agriculture BMP Installation Assistance Program	Conasauga River Alliance	Administer State/Federal grants to cost/share with land owners the installation of agriculture BMPs (pasture management, fencing along streams, alternative water supplies for cattle, poultry manure stack houses, etc.	Section 319(h) Grant through Ga. Environmental Protection Division (60% grant/40% match)	NR	1/1/2007 through 6./30/2010	3	5
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Service/Farm Services Agency	Voluntary program that provides technical and cost share assistance for protection of water resources via pasture management, stream bank and water body protection including livestock access limitation.	Federal (Farm Bill 2002) 50% cost share with possible additional incentive payments.	A	In place, on-going	1	3
Conservation Reserve Program	Natural Resources Conservation Service/Farm Services Agency	Provides technical assistance, rental payments and cost share funding to address specific natural resource concerns including protection of ground and surface waters, soil erosion and wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips.	Federal Annual rental payment for land taken out of production and 50% cost share for practice installation.	A	In place, on going	1	1
Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-20&21 for CAFOs 301 to 1000 animal units	Georgia Dept. of Agriculture, Georgia Environmental Protection Division	Outlines the Swine and non-swine Feeding Operation Permit Requirements for Concentrated Animal Feeding Operations (CAFOs) with more than 300 animal units. CAFOs of more than 300 but equal to or less than 1000 animal units receive a land application system (LAS) permit. Larger CAFOs with more than 1000 animal units must obtain a NPDES permit from EPD.	Federal and State	A	In place, on-going	1	5 (in new developments)

National Pollutant Discharge Elimination System (NPDES) Permit Regulations for CAFOs over 1000 animal units	U.S. Environmental Protection Agency & Ga. Environmental Protection Division	Permitting program created to protect and improve water quality by regulating Concentrated Animal Feeding Operations (CAFOs) and providing minimum permit requirements for CAFOS of more than 1000 animal units.	Federal and State	A	In place, on-going	1	5 (in new developments)
Sanitary Sewer Maintenance Program	Dalton Utilities	Sanitary sewer system inventory and inspection; infiltration & inflow identification and reduction; sewer line and manhole rehabilitation	Federal, State, Dalton Utilities	A	In place, on going	3	5

The purpose of Table 5B is to initiate and guide a “first-cut” evaluation of the capacity of existing, currently proposed, and future required management measures and activities to achieve the load reductions specified in the TMDL (and meet water quality goals) and where needed, identify potential feasible and effective measures and practices which could be encouraged and supported to further reduce pollutant loadings from significant potential sources. Though completely voluntary, such recommendations would provide an effective local guide to effective management actions to achieve local water quality goals, establish priorities for grant or loan programs (Section 319 (h), EQUIP, SRF), establish eligibility for grants for Tier plans and implementation, and identify priorities for local watershed assessments and protection plans.

In Columns 1 and 2 of Table 5B, enter each significant potential source and its’ corresponding impact ratings from Table 3. Review Table 5A and list significant management practices and activities applicable to each significant cause or source. Evaluate and compare the estimated extent and relative contribution of each significant cause or source with the extent and effectiveness of the applicable management measures and in conjunction with appropriate local stakeholders or organizations, make a best current determination of whether the existing or proposed management practices would achieve the load reductions needed to achieve the TMDL. Summarize conclusions and rationale in Column 4. If more information is needed to adequately determine the significant sources or causes and their relative contributions so note and recommend management actions needed to adequately identify sources such as monitoring, watershed assessments, or Tier 1 implementation plans in the last column. If the current, proposed and required management measures are judged inadequate to achieve the needed load reductions for significant sources, recommend, in consultation with the advisory groups, additional management activities, programs, and measures which would effectively reduce pollutant loads from the source. List such measures in the final column and list as a recommended activity in the milestones (Table 8).

TABLE 5B: EVALUATION OF MANAGEMENT MEASURES AND ACTIVITIES APPLIED TO SPECIFIC SOURCES OR CAUSES

APPLICABLE TO SPECIFIC PARAMETER: Fecal Coliform Bacteria

SIGNIFICANT POTENTIAL SOURCE (S) OR CAUSE(S) (From Table 3)	IMPACT RATING (From Table 3)	EXISTING, CURRENTLY PROPOSED, OR REQUIRED MANAGEMENT MEASURES OR ENHANCEMENTS APPLICABLE TO EACH SIGNIFICANT SOURCE (From Table 5A)	EVALUATION: WILL THE ESTIMATED EXTENT OF APPLICATION AND EFFECTIVENESS OF EXISTING, CURRENTLY PROPOSED, AND REQUIRED MANAGEMENT MEASURES BE ADEQUATE TO ACHIEVE THE SOURCE REDUCTION SPECIFIED BY THE TMDL?	IF MANAGEMENT MEASURES ARE ESTIMATED TO BE INSUFFICIENT, RECOMMEND ADDITIONAL MANAGEMENT MEASURES AND ACTIVITIES WHICH COULD EFFECTIVELY REDUCE LOADS FROM SIGNIFICANT SOURCES
Malfunctioning Septic Systems or straight pipes to streams	3	Rules and Regulations for On-Site Wastewater Management	Effective administration and enforcement of existing rules will prevent or minimize future failures. The Septic System Repair program funded with Section 319(h) funds could effectively reduce 75 to 100% of fecal coliform coming from this source.	Successful implementation will require education of landowners and effective marketing of the program's availability.
		Septic System Repair Assistance		Additional funding may be necessary to continue the Section 319 program.
Active pasture run-off – Cattle & horse access to streams	3	Cost share of Agricultural BMPs (pasture management, fencing along streams, alternative water sources, etc.)	The Section 319(h) program along with the NRCS programs could effectively reduce 75 to 100% of fecal coliform from these sources.	Successful implementation of these programs will require effective technical assistance, education and marketing to farmers.
		EQIP Program		Additional funding may be necessary to continue the Section 319 program.
		Conservation Reserve Program		
Poultry Operations	1	Cost share of Agricultural BMPs (poultry manure stack houses and nutrient management plans)	The Section 319(h) program along with the NRCS programs could effectively reduce 75 to 100% of fecal coliform from these sources	Successful implementation of these programs will require effective technical assistance, education and marketing to farmers.
		EQIP Program		Additional funding may be necessary to continue the Section 319 program.
		Conservation Reserve Program		
Sewer System Leaks and Spills	1	Sanitary sewer system inventory and inspection; infiltration & inflow identification and reduction; sewer line and manhole rehabilitation	Effective administration and enforcement of existing rules will prevent or minimize future failures.	No additional management measures are needed.

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data to determine the sources of pollution, describe baseline conditions, and evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed (including monitoring required for watershed assessments, or stormwater permits) - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for listing decisions.

Table 6. MONITORING PLAN

PARAMETER (S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
Fecal Coliform	Conasauga River Alliance	Proposed	1/1/2007	12/31/2009	Assist with 319(h) project selection; monitor improvements in water quality due to Section 319(h) grants.
Fecal Coliform, Chemicals, minerals	Whitfield County and City of Dalton	Proposed	1/1/2007	On-going	Monitor implementation impacts from Storm Water Management Program

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities, including those described in the Scope of Services that will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
NGRDC	Distribute copies of the Plan	To all stakeholders & local governments	4/15/2006
NGRDC/County	Prepare and distribute press release describing the plan and where to attain copies	To the local newspapers	4/30/2006
NGRDC/County	Prepare Power Point presentations and present to civic groups & local agencies	Civic Groups and local agencies	5/15/2006
Conasauga River Alliance	Conduct general education activities regarding non-point source pollution and applicable BMPs; and, promote availability of Section 319(h) grant assistance.	Local governments, Local citizens	In place now and on-going

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

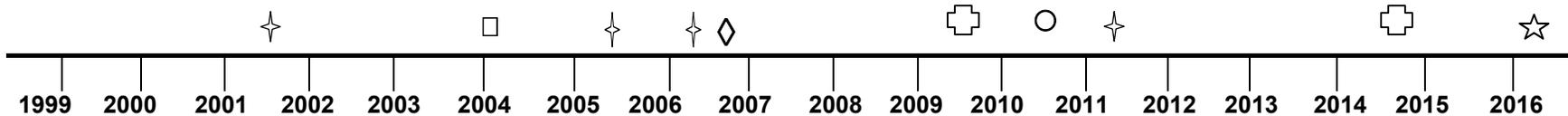
This table will be used to periodically track and report progress of significant management practices and activities identified or recommended in Tables 5A, 5B, and other sections of this plan, including outreach, additional monitoring and assessments, and the enhancement or installation of management measures and activities. Identify and list significant planned or recommended activities and the target date of accomplishment. Provide room to comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE OR ACTIVITY	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Rules and Regulations for On-site Wastewater Management	Whitfield County Board of Health, Environmental Health Office		X	The environmental health office will continue to effectively enforce and administer the existing regulations.
Septic System Repair Assistance Program	Conasauga River Alliance/ Whitfield County Health Dept.	X		Application has been approved; implementation to begin 10/30/2006.
Agriculture BMP Installation Assistance Program	Conasauga River Alliance	X		Application has been approved; implementation to begin 10/30/2006.
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Service		X	Program assistance is available. Program outreach needs to be conducted. Assistance is provided to farmers as requested.
Conservation Reserve Program	Natural Resources Conservation Service		X	Program assistance is available. Program outreach needs to be conducted. Assistance is provided to farmers as requested.
Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-20&21 for CAFOs 301 to 1000 animal units	Georgia Dept. of Agriculture, Georgia Environmental Protection Division		X	Permits will be issued as needed.
National Pollutant Discharge Elimination System (NPDES) Permit Regulations for CAFOs over 1000 units	U.S. Environmental Protection Agency & Ga. Environmental Protection Division		X	Permits will be issued as needed.
Sanitary sewer system inventory and inspection; infiltration & inflow identification and reduction; sewer line and manhole rehabilitation	Dalton Utilities		X	Activities underway as needed.

PROJECTED ATTAINMENT DATE

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



- Scheduled EPD Basin Group Monitoring ✦
- TMDL Completed □
- Revised TMDL Implementation Plan Accepted ◇
- Plan Status Evaluation Report ⊕
- Plan Update or Revision, if Necessary ○
- Project Attainment for Plans Prepared in 2006 ☆

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Date Submitted to EPD:	March 31, 2006	Revision:	

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APPENDIX A.
STAKEHOLDERS

List the names, addresses, telephone numbers, and e-mail addresses for 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/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Brian Anderson, Whitfield County Commission	P.O. Box 248	Dalton	GA	30722	706-275-7500	banderson@whitfieldcountyga.com
Jean Garland, Whitfield Co. Zoning Administrator	1407 Burleyson Drive, Suite 1	Dalton	GA	30720	706-275-7474	jgarland@whitfieldcountyga.com
Jerrel Autry, Whitfield Co. Environmental Health Specialist, County Health Dept.	1407 Burleyson Drive	Dalton	GA	30720	706-272-2005	whitenv@yahoo.com
Craig Earnest, Bowater, Inc.	P.O. Box 697	Calhoun	GA	30703	706-629-8634	
Frank Sagona, Conasauga River Alliance	125 Redbud Rd. NE. Suite 7	Chatsworth	GA	30705	706-625-7044	fjsagona@aol.com
John Lugthart, Dalton State College	650 College Drive, Division of Natural Sciences	Dalton	GA	30720	706-272-2485	Jlugthart@daltonstate.edu
Paul Johnson, SE Aquatic Research Institute	5385 Red Clay Road	Cohutta	GA	30710	706-694-3957	
Cindy Askew, Natural Resource Conservation Service	1407 Burleyson Drive	Dalton	GA	30720	706-638- 2207, ext 3	Cidndy_askew@ga.usda.gov
John Loughridge, Ga. Soil and Water Conservation Commission	700 East 2 nd Avenue, Suite J	Rome	GA	30161	706-295-6131	jloughridge@gaswcc.org

Jim Davis, Whitfield County Administrator	P.O. Box 248	Dalton	GA	30722	706-275-7500	blove@whitfieldcountyga.com
Don Cope, President and Chief Executive Officer, Dalton Utilities	P.O. Box 869	Dalton	GA	30722	706-278-1313	dcope@dutil.com
Butch Sanders, Dalton City Administrator	P.O. Box 1205	Dalton	GA	30722	706-529-2401	bsanders@cityofdalton-ga.gov
Shawn Clouse, The Nature Conservancy	109 King Street, Suite 1	Dalton	GA	30720	706-279-9001	sclouse@tnc.org
Kenneth and James Boring, Landowners	P.O. Box 1608	Dalton	GA	30722		
Jack and Harold Brooker, farmers	3194 Cleveland Rd.	Dalton	GA	30721		

APPENDIX B.

UPDATES TO THIS PLAN

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.

APPENDIX C
VISUAL FIELD SURVEY

Visual Field Survey
For
Coahulla Creek TMDL Segment
(Below County Road 728 to Mill Creek)

December 2005

Prepared by the North Georgia Regional Development Center.

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INTRODUCTION

1.1 Location

Coahulla Creek is located in the central portion of Whitfield County. Coahulla Creek's watershed is located entirely in Whitfield County. Part of the watershed is inside the city limits of Dalton. The impaired segment and the HUC 12 watershed are shown below in Figure 1.

1.2 Watershed Description

The Coahulla Creek TMDL segment watershed is comprised of 15,981.1 acres of land inside Whitfield County. The TMDL segment is located within HUC 10 – 0315010103 and flows south. Based upon our most recent existing land use data for Whitfield County, mapping of the TMDL segment watershed shows that land cover within the watershed is varied. Roughly 51% of the land is classified as vacant, 21% is in residential, 18% of the land is classified as agricultural, and 4% is classified as road right of ways. The table below breaks down each land cover and their percentage in the Coahulla Creek watershed.

Table 1. Watershed Land Cover

Land Cover Classification	Area (Acres)	% of total area
Agriculture	2904.2	18%
Conservation	35.9	<1%
Commercial	97.6	<1%
Industrial	410.1	2.50%
Public	88.5	<1%
Residential	3433.1	21%
TCU	5.5	<1%
R/W (Roads)	607.7	4%
Vacant	8211.6	51.00%
Water	186.9	1%
Total	15981.1	100%

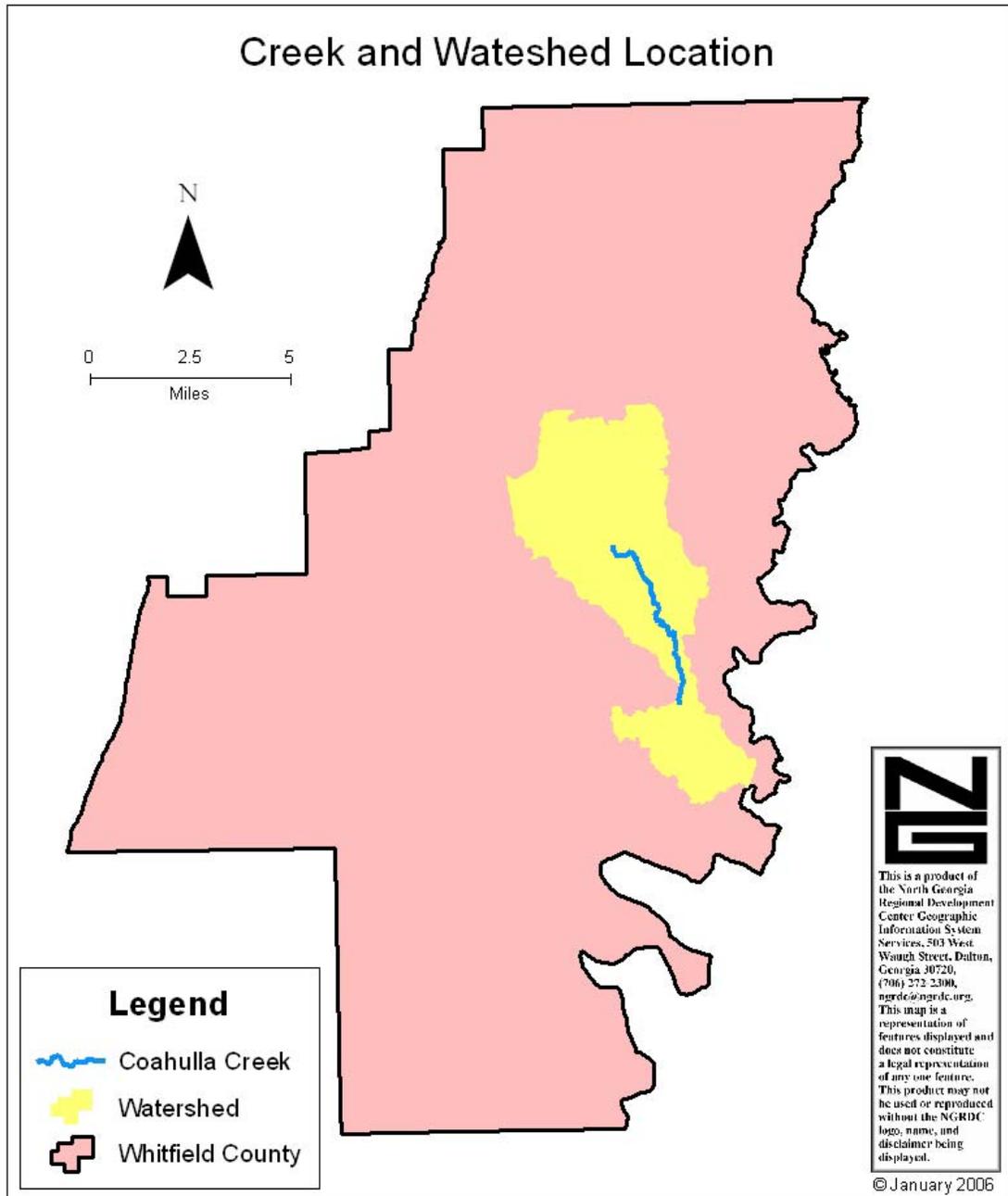


Figure 1

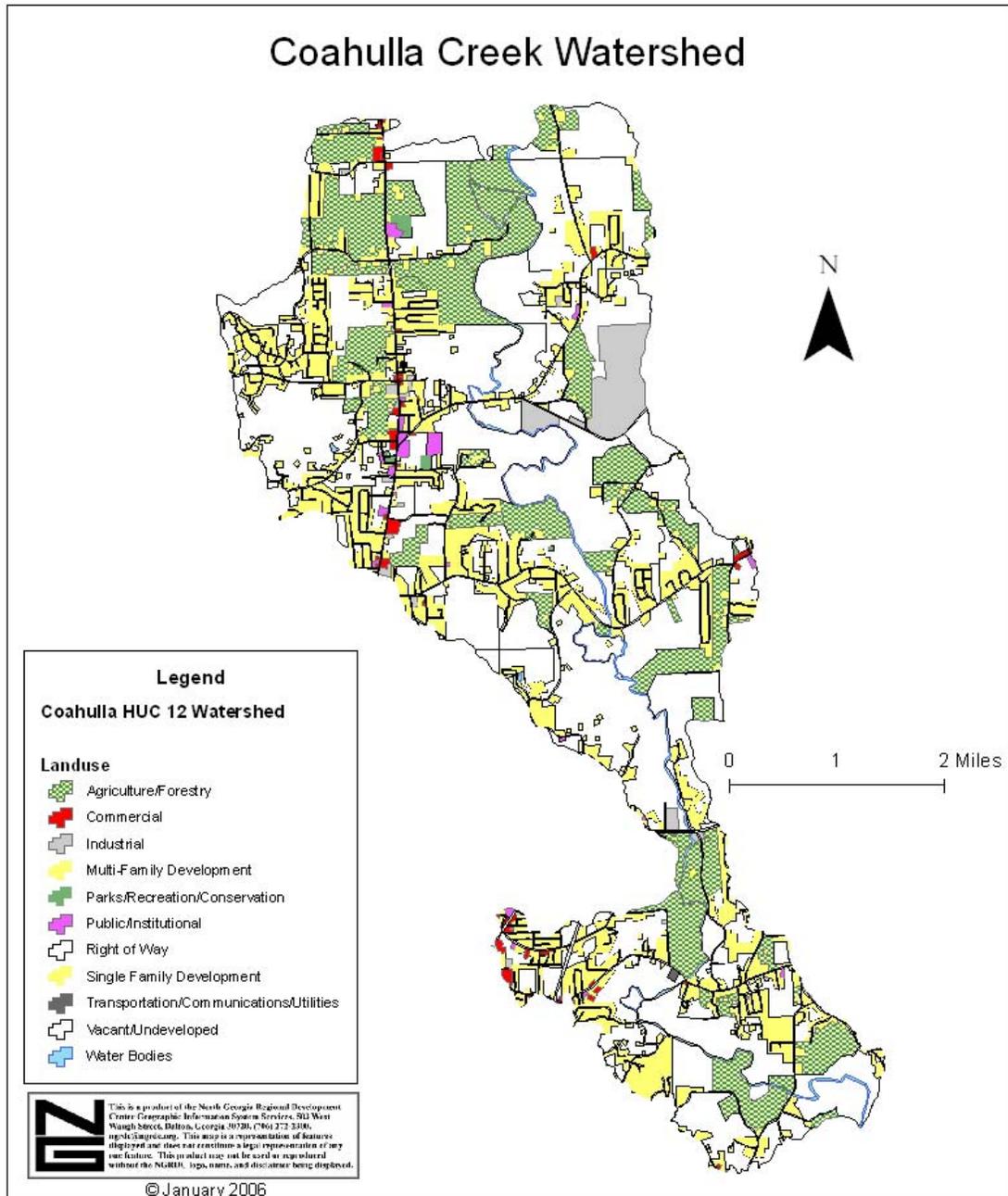


Figure 2

2.0 METHODOLOGY

The Source Water Assessment Project (SWAP, December 2003) was studied to determine the locations of any known point sources and potential individual sources of pollution in relation to the area of interest. Aerial photos were also used as another means to compile information and further evaluate the area.

A windshield survey of the watershed area adjacent to the stream segment was the initial step. There are two road crossings on the Coahuilla Creek TMDL segment (Dawnville Road and HWY 52). Both road crossings were visited during the windshield survey. The stream was not conducive to walking for reasons such as private property and no trespassing signs posted. The road crossings were not the only places in the watershed that were visited however. Many potential problem areas within the TMDL stream segment were visited to confirm land use aerial photography. The purpose of the stream segment visual survey was to identify and observe possible sources of pollution. Observations were documented and captured in photographs of the stream channel and its surroundings.

3.0 Field Findings

3.1 General Characteristics

The field findings discussed here are the results of the visual survey at road crossings as well as visual surveys throughout the entire TMDL stream segments watershed. A pretty thick vegetative buffer bordered the Coahuilla Creek TMDL segment, but there are also a few areas with little to no buffer at all. The Creek had a nice moving flow, and it did not seem to be congested with much debris. General photographs of the stream condition at access points to the segment are shown below in Figure 3.



Figure 3. Coahulla Creek at Cherokee Drive



Figure 4. Cattle off of Beaverdale Drive

3.2 Point Sources

Dalton Utilities provides sewer service within the city of Dalton, and also provides sewer service to some areas in incorporated areas along Cleveland Highway. There is also a private wastewater system on Bay Drive. There are 2 NPDES permitted wastewater treatment facilities for a sizeable Manufactured Home Park in the Coahulla Creek Watershed.

3.3 Non-Point Sources

The watershed has a considerable amount of farms with horses and cattle that may have some non-permitted feeding operations (figure 4). There is a good amount of wildlife in this area as well. There are approximately 4 poultry producers (Figure 5) within the Coahulla Creek Watershed, and there are plenty of places where cattle and horses have easy access to the surrounding streams. Both public sewer and septic systems serve the Coahulla Creek watershed, with the majority being septic systems. The land in the watershed is mainly undeveloped according to land use, but there is a large amount of residences located directly on the stream. There is also one landfill in the northern part of Whitfield County.



Figure 5. Poultry operation on Lake Frances Road

4.0 Ranks Assigned To Pollution Sources

There are a variety of pollution sources that are affecting the Coahuilla Creek TMDL segment. Animal waste from the surrounding wildlife is a potential low to moderate source of fecal coliform, as well as waste from horse or cattle farms. Straight pipes and leaking or failing septic tanks are also another moderate source of fecal coliform bacteria affecting sporadic areas along the stream segment.

5.0 Summary of Findings

There are a few point source discharges in the TMDL segment watershed. There are many non-point sources in the TMDL stream segments watershed as well. The field survey and background investigation identified urban runoff, wildlife and domestic waste, and possible septic tank leaking and/or failure.