

**STATE OF GEORGIA
TIER 2 TMDL IMPLEMENTATION PLAN REVISION 1**

Segment Name Flat Creek

Coosa River Basin

April 28, 2006

Local Watershed Governments Gilmer County and
Cities of Ellijay and East Ellijay

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.

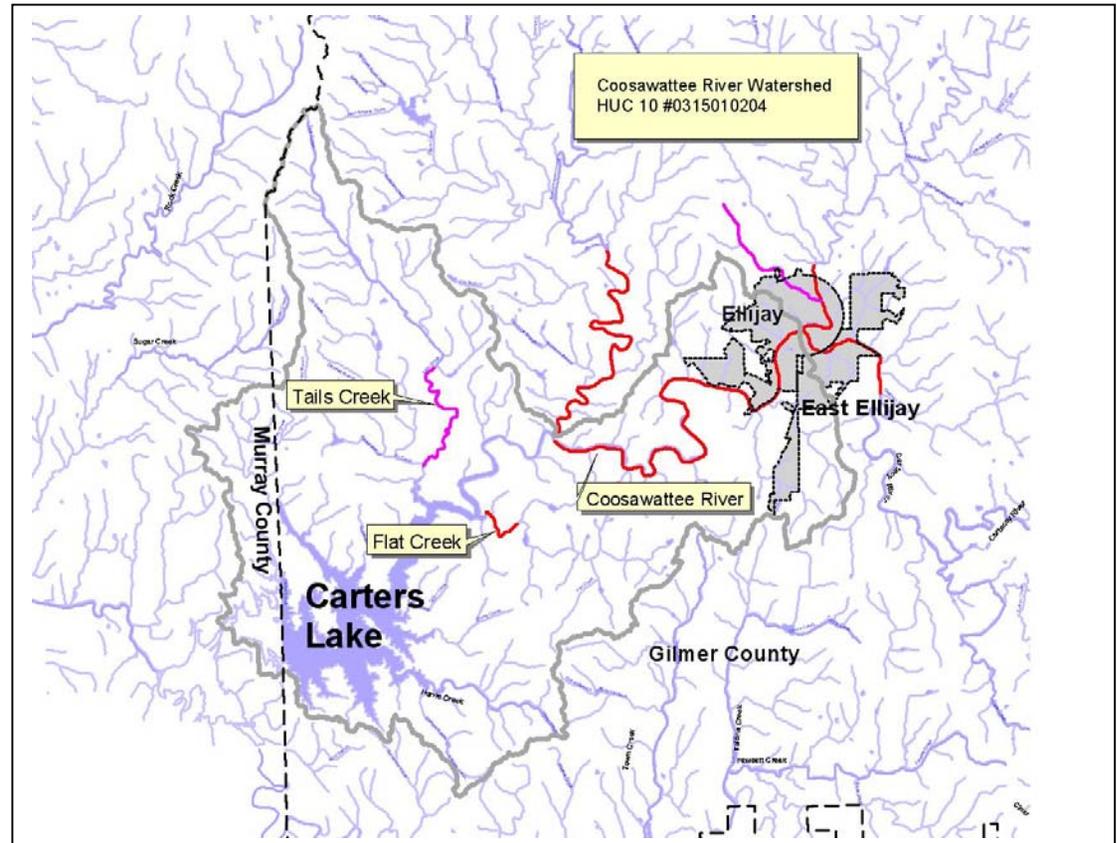


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT	TMDL ID
Flat Creek	Upstream Coosawattee River	Fecal Coliform Bacteria	CSA0000013

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10# 0315010204. 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.

The watershed (HUC10# 0315010204) is located principally in Gilmer County and contains 47,796 acres. Major highways traveling through the watershed include State Routes 52, 282, 382 and 515. Small areas of the watershed are also located in Murray County. It begins with the confluence of the Ellijay and Cartecay Rivers. Stream segments identified on Georgia Environmental Protection Division’s 303(d) list in HUC 10# 0315010204 include the Coosawattee River (from confluence with Ellijay River and Mountaintown Creek), Flat Creek (upstream Coosawattee River), and Tails Creek (Highway 282 to Carters Lake). Carters Lake, a US Corps of Engineers reservoir is also located in the lower end of the watershed. The upper portion of the watershed contains a portion of the urban areas of the cities of Ellijay and East Ellijay. Terrain throughout the entire watershed is mountainous and heavily forested. The watershed is becoming heavily developed with residential uses. A major development with approximately 9,000 lots is the Coosawattee River Resort properties- all served with individual septic systems. Many of these lots are located directly on the Coosawattee River and Flat Creek. Other, smaller residential developments are also taking place throughout the watershed. Agriculture activities consist of cattle grazing on small pastures and 16 major poultry producers. The latest land use surveys were conducted in 2004 in Gilmer County and 2005 in Murray County in conjunction with the preparation of Comprehensive Plan Updates in both

Land Use in HUC 10# 0315010204

Land Use Categories	Acreages	% of Total
Agriculture	1524	3%
Commercial	291	<1%
Forestry	3673	8%
Industrial	165	<1%
Conservation	1579	3%
Public, Institutional	657	1%
Residential	10738	22%
Transportation, Utilities, Communication	2075	4%
Vacant, undeveloped	26548	55%
Road Right of Way	35	<1%
Water	506	1%
Total	47796	100%
Source: Gilmer County Comprehensive Plan, October, 2004; Murray County Comprehensive Plan, November, 2005		

Counties. The adjoining table indicates the land use acreages per each classification in those jurisdictions. The source of the data is from county tax digests, air photos and windshield surveys. These acreages and percentages may differ from the land cover information provided in the TMDL.

The Coosa River Basin Initiative, an Adopt-a-Stream organization has an interest in the watershed and is currently seeking grants to conduct non-point source education activities. There are no agricultural watershed planning activities such as PL-566 Watershed Planning) occurring in the watershed.

There are two Section 319(h) grant projects currently being conducted in the watershed and are limited in scope to the upper Coosawattee watershed (HUC 8 area) above Carter’s lake. One, administered by North Georgia Regional Development Center is for cost sharing with

landowners the repair of failing septic systems or installation of new systems where straight pipes exist. To date, 10 systems have been repaired or installed within the watershed with the use of these Section 319 funds. Funds are available to repair 65 to 75 failing systems throughout the Upper Coosawattee HUC 8 area. The second Section 319(h) grant is being administered by the Georgia Soil and Water Conservation Commission. This project is for cost sharing with farmers the installation of agriculture BMPs that will reduce fecal coliform bacteria from entering streams. Typical projects include poultry manure stack houses and nutrient management plans, fencing along streams to keep cattle out of streams, composting facilities for dead poultry, etc. To date, 20 or more projects are in various stages of development throughout the county.

A Section 104(b) grant (U.S EPA Water Quality Agreement) was also implemented in the watershed and closed out on December 31, 2005. This grant repaired 12 septic systems throughout the HUC 8 area. The grant also implemented 8 agriculture BMPs.

{FLAT 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
Flat Creek	Upstream Coosawattee River	1 mile	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.)	Failing Septic Systems	57%
		Agriculture operations (poultry, cattle)	

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.

An initial meeting of the Gilmer County Stakeholders group was conducted on August 22, 2005. Members involved represented the County Land Development Office, County Environmental Health Office, farmers, the Georgia Soil and Water Conservation Commission, The Corp of Engineers, land developers and the Natural Resources Conservation Service. A discussion of land use within the Flat Creek HUC 12 watershed with

HUC 12 Watershed containing impaired stream segment		
Land Use Classification	Area (Acres)	% of Total
Agriculture	841.4	8.20%
Commercial	3.5	>.01%
Forestry	668.2	6.50%
Parks and Recreation	2.8	>.01%
Public	2.4	>.01%
Right of way	646.5	6.30%
Residential	4213.1	40.80%
Transportation, Communication, Utilities	20	0.20%
Vacant, undeveloped	3666.6	35.50%
Water	262.2	2.50%
Total	10326.7	100%

Source: Gilmer County Comprehensive Plan, October, 2004;
Murray County Comprehensive Plan, November, 2005

stakeholders indicated that the watershed is a mix of residential, agriculture, forestry, and vacant land. A review of aerial photography and recent land use data compiled for the County's 2004 Comprehensive Plan update confirms information provided by the stakeholders.

Flat Creek is not a source of public water supply; however, a Source Water Assessment completed in December, 2003 revealed that the bacteria pathogens from poultry and agricultural operations, and the many septic systems in the county are a serious threat to water supplies in the county. Agricultural activity consists of small cattle or horse grazing operations as well as 8 major poultry operations. Field surveys were also conducted in fall of 2005. (See Appendix C for results of the Visual Survey.) Based upon land use data and the visual surveys sources of impairment within the watershed include:

1. Malfunctioning Septic Systems/Straight Pipes. Data from the Georgia Department of Human Resources, Div. Of Public Health in

2001 indicated that Gilmer County contained 12,538 septic systems, and installed 6,730 new systems between 1990 and 2000. 120 repairs were also made during that period. The Gilmer County Environmental Health office reported that it issued 766 new septic system permits and 50 system repair permits county wide in FY 2005. There are 4,213 acres of residential land use within the HUC 12 watershed area, all of which is on individual septic systems. At an average density of 2 acres per unit, there are an estimated 2,100 septic systems in the watershed. 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 Flat Creek. Recent activity completed by the U.S EPA Water Quality Agreement grant closed on December 31, 2005 and the current Section 319 (h) grant indicates that there are substantial numbers of failing systems as well as straight pipes within the County.

2. **Agricultural Activities, Pasture Run-off & Poultry Operations.** Data from the Natural Resources Conservation Service (NRCS) indicated that in 2001 Gilmer County contained 5,000 beef cattle, 1,050 dairy cattle, and 3,450 swine. There are over 841 acres of agricultural land within the HUC 12 watershed area consisting primarily of small cattle and horse grazing areas. Visual observations indicated that many of the cattle and/or horse grazing areas are located adjacent to streams and have direct access to the streams for drinking water. There are also 8 poultry producers within the area, many of which spread poultry manure on pasture land within the watershed.
3. **Wildlife.** 35% of the HUC 12 watershed area is vacant, undeveloped land that is mostly wooded and contains a variety of wildlife. The most populous large species is deer estimated by the Georgia Department of Natural Resources at 40 animals per square mile.

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 40% of land area and all is on septic systems	3	Approximately 10% of all home lots are located adjacent to streams	1	3
Active Pasture run-off - cattle & horse access to streams	Agricultural use is 8.2% of land area	1	Cattle/horse grazing adjacent to streams is frequently located throughout the watershed	3	3
Wild animal waste	Vacant, undeveloped is 35 % of land area	.5	Mostly deer habitat is located throughout the watershed.	.5	.25
Poultry Operations	There are 8 major poultry operations	1	Sporadically located throughout the watershed	3	3

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.

The North Georgia Regional Development Center, with input from the County Commission Chairman, Jerry Farist formed a Stateholders's Advisory Committee in June, 2005. An initial meeting of the Advisory Committee was held on August 22, 2005 at the Ellijay Library, 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 Gilmer 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 and sought input from the Advisory Committee members concerning land use and other activities, which may be sources. NGRDC explained that it would be conducting a field survey along the streams to verify potential causes. Visual observations along with aerial photography and recent land use data would be utilized to determine the potential causes. Once causes were identified, the RDC will identify recommended measures that could be utilized to reduce the parameters causing the impairments.

A number of stakeholder activities have been conducted in Gilmer County as part of a U.S. EPA Water Quality Agreement project that was initiated in January, 2003, and a Section 319(h) grant that was initiated in January, 2005. As part of these two grant programs, a stakeholders group was organized and has been meeting on at least a bi-monthly basis. An agriculture BMP field day on fencing cattle out of streams was conducted in 2004; a workshop on septic system installation, maintenance and repair was conducted in 2005; a public open-forum on water resource issues was conducted in 2005, which was attended by approximately 75 citizens; and numerous newspaper articles have been featured in the local newspaper.

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**", which was attended by the Gilmer Water and Sewer Authority and Gilmer Environmental Health office. 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.

The North Georgia Regional Development Center met with the Stakeholder's Advisory Committee again on January 17, 2006, which was well attended by Committee members as well as Mary Gazaway of Georgia EPD. The purpose of the meeting was to review the draft TMDL Implementation Plan for all impaired streams in Gilmer County. NGRDC discussed the results of the field survey and confirmed the conclusions regarding the sources of impairment. A discussion was held regarding proposed implementation measures. All members concurred with the proposed 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
Don Schneider, Code Officer, City of Ellijay	197 N. Main Street	Ellijay	GA	30540	706-635-4711	codeenforce@ellijay.com
Andrea Wheeler, Gilmer Co. Health Dept.	15 Dalton Street	Ellijay	GA	30540	706-635-6050	awheeler@gdph.state.ga.us
Ray King, NW Ga. Health District	100 West Walnut Ave., Suite 92	Dalton	GA	30720	706-272-2342	rking@gdph.state.ga.us
James Holloway, Gilmer Co. Land Dev. Officer	# 1 Westside Square	Ellijay	GA	30540	706-635-3406	planning@ellijay.com
Jim Smith, Gilmer Co. Community Dev. Office	# 1 Westside Square	Ellijay	GA	30540	706-635-3406	planning@ellijay.com
David Pierce, Farmer	209 West Point Drive, P.O. Box A	Ellijay	GA	30540	706-276-3200	
David Durgan, Property Owners Association	635 Beaver Lake Drive	Ellijay	GA	30540	706-276-1060	
Debbie Royston, Ga. Forest Watch	15 Tower Street	Ellijay	GA	30540	706-635-8733	
Doug Towery, Natural Resources Conservation Services	185 Wellborn Street, Box 3	Blairsville	GA	30512	706-745-2794	doug.towery@ga.usda.gov
LuAnn Lackey, Corps of Engineers	P.O. Box 96	Oakman	GA	30732	706-334-2248	Luann.lackey@sam.usace.army.mil
Marlin Cox, Ga. Soil and Water Conservation Commission	1123 Progress Rd.	Ellijay	GA	30540	706-635-4416	mcox@gaswwcg.org

Emory DeBord, Gilmer Co. Water & Sewer Authority	P.O. Box 635	Ellijay	GA	30540	706-276-2202	egcwsa@ellijay.com
Ruth Caudell. Ellijay City Council	167 Gartrell Street	Ellijay	Ga	30540	706-635-4447	rhcaudell@ellijay.com

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		

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	Gilmer County Boards 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	North Ga. Regional Development Center, Gilmer Co. Health Dept.	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)	A	1/12005 through 6/30/2009	3	5
Agriculture BMP Installation Assistance Program	Ga. Soil & Water Conservation Commission	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)	A	1/12005 through 6/30/2009	3	5
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Service	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	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	Federal Annual rental payment for land taken out of production and 50% cost share for practice installation.	A	In place, on going	1	1

		wildlife habitat. Eligible practices include tree planting, grassed waterways, wildlife habitat buffers, and shallow water area for wildlife and filter strips.					
Georgia Rules and Regulations of 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)

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 (Gilmer Co. Health Dept.)	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 (NGRDC and Gilmer Co. Health Dept.)		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.) (Georgia Soil and Water Conservation Commission)	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 (NRCS)		Additional funding may be necessary to continue the Section 319 program.
		Conservation Reserve Program (NRCS)		
Poultry Operations	3	Cost share of Agricultural BMPs (poultry manure stack houses and nutrient management plans) – (Georgia Soil and Water Conservation Commission)	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 (NRCS)		Additional funding may be necessary to continue the Section 319 program.
		Conservation Reserve Program (NRCS)		

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	Gilmer County Adopt-a-Stream (Chapter proposed to be organized)	Proposed	2007	On-going	To monitor and evaluate TMDL implementation activities.
Benthic Monitoring	Georgia Forest Watch/SAMAB	Current	2003	On-going	Determine aquatic organisms in Coosa Basin

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
Coosa River Basin Initiative	Will conduct general public education activities regarding non-point pollution sources	Local citizens in Coosawattee River watershed	On going as funds allow.

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

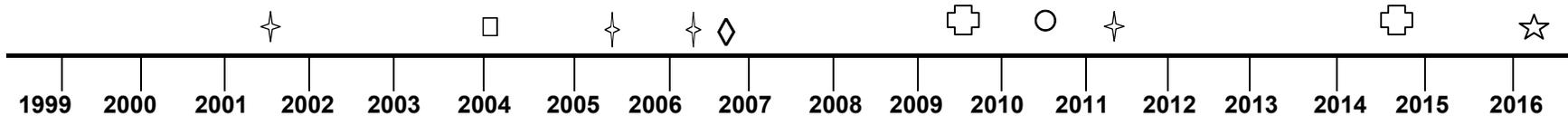
was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE OR ACTIVITY	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Rules and Regulations for On-site Wastewater Management	Gilmer 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	North Ga. Reg. Dev. Center, Gilmer County Health Dept.		X	Continued implementation of existing Section 319(h) program. Additional funds may be needed after 2009
Agriculture BMP Installation Assistance Program	Ga. Soil and Water Conservation Commission		X	Continued implementation of Section 319(h) program. Additional funds may be needed after 2009
Environmental Quality Incentives Program (EQIP)	Natural Resources Conservation Service		X	Program assistance is available. Program outreach needs to be conducted. Assistance provided to farmers as requested.
Conservation Reserve Program	Natural Resources Conservation Service		X	Program assistance is available. Program outreach needs to be conducted. Assistance provided to farmers as requested.
Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-20&21 for CAFOs under 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 animal units	U.S. Environmental Protection Agency & Ga. Environmental Protection Division		X	Permits will be issued 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:	

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
Don Schneider, Code Officer, City of Ellijay	197 N. Main Street	Ellijay	GA	30540	706-635-4711	codeenforce@ellijay.com
Andrea Wheeler, Gilmer Co. Health Dept.	15 Dalton Street	Ellijay	GA	30540	706-635-6050	awheeler@gdph.state.ga.us
Ray King, North Georgia Health District	100 West Walnut Avenue, Suite 92	Dalton	GA	30720	706-272-2342	rking@gdph.state.ga.us
James Holloway, Gilmer Co. Land Dev. Officer	# 1 Westside Square	Ellijay	GA	30540	706-635-3406	planning@ellijay.com
Jim Smith, Gilmer Co. Community Dev. Office	# 1 Westside Square	Ellijay	GA	30540	706-635-3406	planning@ellijay.com
David Pierce, Farmer	209 Westpoint Drive, P.O. Box A	Ellijay	GA	30540	706-276-3200	
David Durgan, Property Owners Association	635 Beaver Lake Drive	Ellijay	GA	30540	706-276-1060	
Debbie Royston, Ga. Forest Watch	15 Tower Street	Ellijay	GA	30540	706-635-8733	
Doug Towery, Natural Resources Conservation Services	185 Wellborn Street, Box 3	Blairsville	GA	30512	706-745-2794	doug.towery@ga.usda.gov
LuAnn Lackey, Corps of Engineers	P.O. Box 96	Oakman	GA	30732	706-334-2248	Luann.lackey@sam.usace.army.mil
Marlin Cox, Ga. Soil	1123 Progress Rd.	Ellijay	GA	30540	706-635-4416	mcox@gaswwcg.org

and Water Conservation Commission						
Emory DeBord, Gilmer Co. Water & Sewer Authority	P>O. Box 635	Ellijay	GA	30540	706-276-2202	egcwsa@ellijay.com
Jerry Farist, Gilmer County Commission Chairman	# 1 Westside Square	Ellijay	GA	30540	706-635-3406	
Jim Shinall, U.S. Corps Of Engineers	P.O.Box 487	Cartersville	GA	30120	678-721-6716	James.t.shinall@sam.usace.army.mil
Joe Cook, Director, Coosa River Basin Initiative	408 Broad Street	Rome	GA	30161	706-409-0128	www.coosa.org

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 SURVEY RESULTS

Visual Field Survey
For
Flat Creek TMDL Segment
(Upstream Coosawattee River)

September 2005

Prepared by the North Georgia Regional Development Center.

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INTRODUCTION

1.1 Location

Flat Creek is located in the central portion of Gilmer County. The impaired TMDL segment is from Mitchell Branch Road to Young Stone Creek right by Mineral Bluff Road. The entire Huc 12 watershed is located completely within Gilmer County (Figure 1). The HUC 12 watershed also holds a portion of the impaired segment of the Coosawattee.

1.2 Watershed Description

The Flat Creek TMDL segment watershed is comprised of 10326.7 acres of land inside of Gilmer County (Figure 2). The TMDL segment is located within HUC 10 – 0315010204 and flows northeast. Based upon our 2004 existing land use data for Gilmer County, mapping of the TMDL segment watershed shows that land cover within the watershed is varied. Roughly 35% of the land is classified as vacant, 40% is classified as residential, and 8% of the land is classified as agricultural. The table below breaks down each land cover and their percentage in the Flat Creek watershed.

Table 1. Watershed Land Cover

Land Cover Classification	Area (Acres)	Land Use %
Agriculture	841.4	8.20%
Commercial	3.5	>.01%
Forestry	668.2	6.50%
MHP	61.9	0.60%
Parks and Recreation	2.8	>.01%
Public	2.4	>.01%
R/W (Road)	646.5	6.30%
Single Family	4151.2	40.20%
TCU	20	0.20%
Vacant	3666.6	35.50%
Water	262.2	2.50%
Total	10326.7	100%

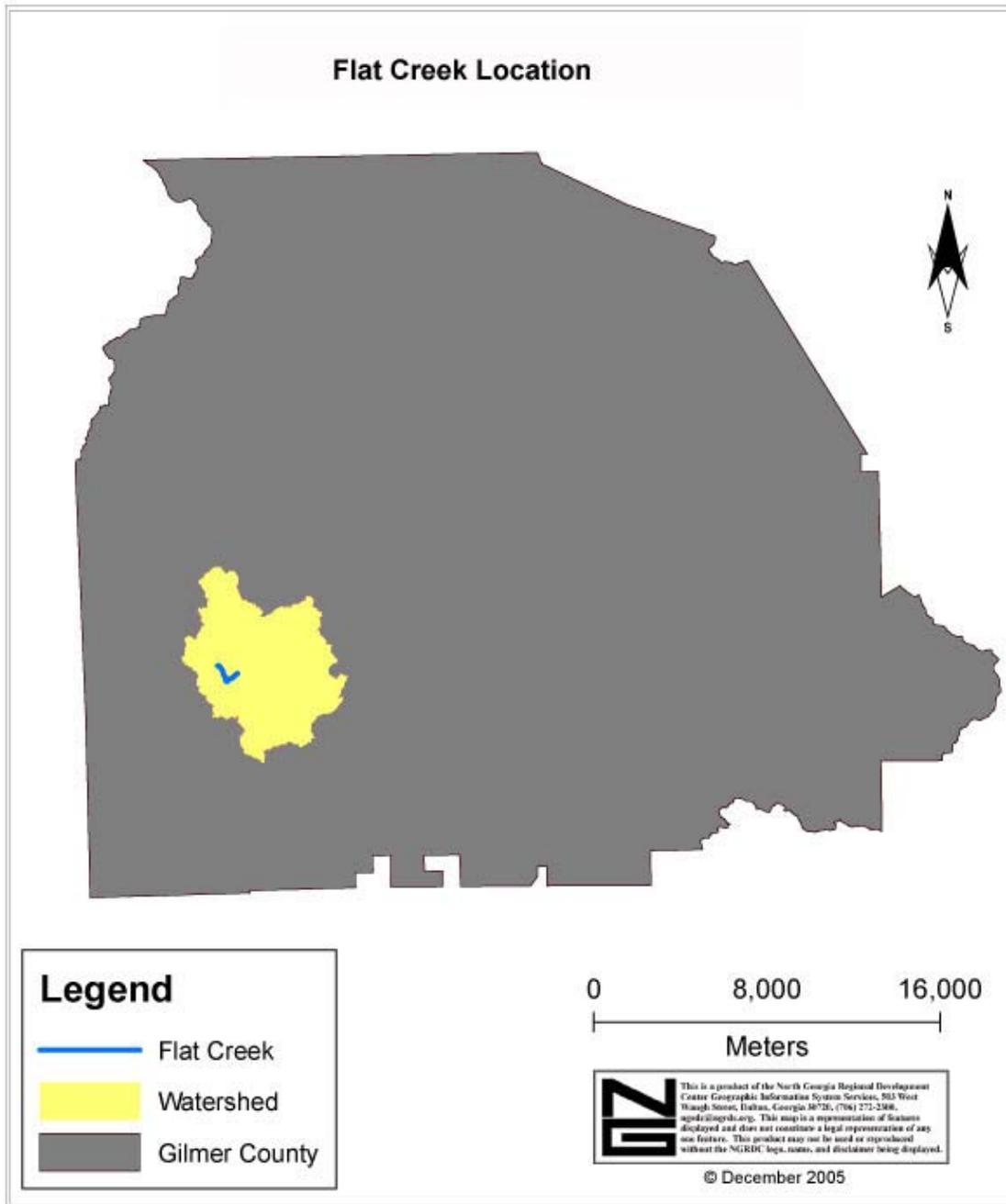


Figure 1. Location of Flat Creek and Watershed

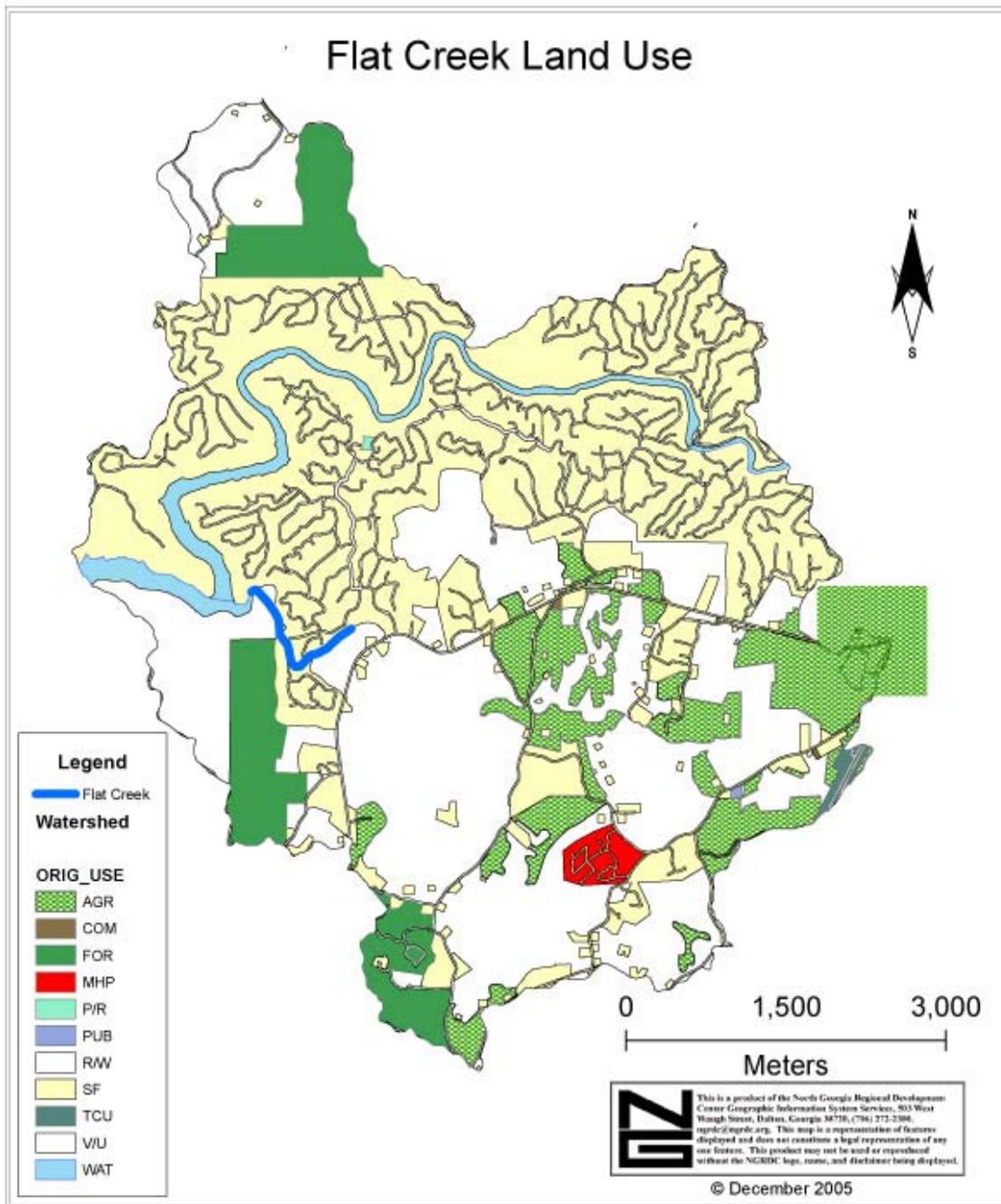


Figure 2. Land Cover for Flat Creek Watershed.

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. Known potential individual sources of pollution located in the Flat Creek watershed are shown in Figure 3. 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. The stream was not conducive to walking for reasons such as private property and no trespassing signs posted. 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. The watershed is highly residential directly around Flat Creek and throughout the entire watershed as well. The Creek had a nice moving flow, and it did not seem to be congested with much debris at the time the visual survey was conducted.

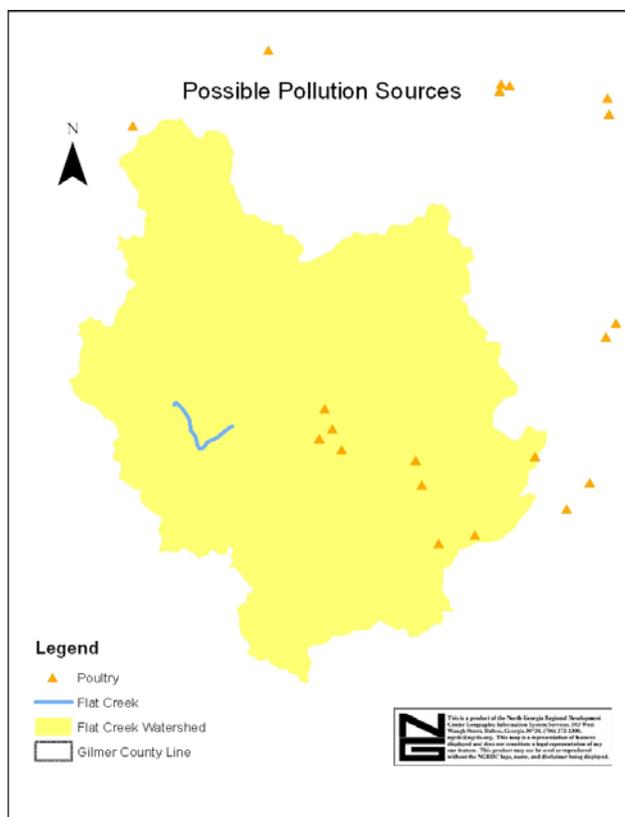


Figure 3. Potential Individual Sources of Pollution Identified in NGRDC’s Source Water Assessment Project.

3.2 Point Sources

There is no sewer system in the Flat Creek watershed.

3.3 Non-Point Sources

The land is either undeveloped or served by septic tank systems. As seen in Figure 3, there are 9 known chicken houses located directly in the Flat Creek watershed. There are also cattle farms where cows have direct access to the water. The watershed is mostly residential with a few cattle and horse farms that may have some non-permitted animal feeding operations. There is a good amount of wildlife in this area as well.



Figure 4. Large Cattle Farm off of 382.

4.0 Ranks Assigned To Pollution Sources

There are a variety of pollution sources that are affecting the Flat Creek TMDL segment. Urban runoff is considered a high source of fecal coliform bacteria affecting the entire TMDL segment. Animal waste from the surrounding wildlife is a potential low to moderate source of fecal coliform, as well as waste from horse, cattle, or chicken farms. These sources are affecting the TMDL segment in sporadic areas. Leaking or failing septic tanks are also another potential moderate source of fecal coliform bacteria affecting areas almost entirely along the stream segment.



Figure 5. Horses and Chicken Farm off of Knight Road.

5.0 Summary of Findings

The most likely cause for the Flat Creek watershed being non supportive is a combination of things. Urban runoff from residential areas, failing or leaking septic systems, wildlife and domestic animal waste, and possibly some poultry operation runoff are all causes for impairment.

