

**Revised TMDL Implementation Plan  
HUC 0307010108 - Marburg Creek and Upper Apalachee River  
August, 2003**

HUC 0307010108 is located primarily in Barrow and Walton counties with some part of the watershed in Gwinnett County.

The stream segments of concern in this TMDL implementation plan include Marburg Creek from Massey's Lake to the Apalachee River and the Apalachee River from Williams Creek to the confluence with Marburg Creek. The primary jurisdictions that drain to the segments of concern include Barrow and Walton counties and the City of Winder. Other, smaller towns that contribute to the drainage include Auburn, Carl, and Bethlehem. The Apalachee River forms part of the boundary between Barrow and Gwinnett counties and the entire boundary between Barrow and Walton counties.

The pollutants of concern for this implementation plan are fecal coliform for both stream segments. The streams are listed as "not supporting" their designated uses.

The streams were listed on the Georgia 303(d) list of impaired water bodies after sampling events in 1999. A Total Maximum Daily Load was established by EPA for the entire Oconee River basin in February, 2002, that recommends a reduction in the fecal coliform loading on Marburg Creek of 77% and on the Apalachee River of 77%.

A reach of the Apalachee River from the headwaters to Apalachee Road in Gwinnett County is being addressed by Gwinnett County and the Atlanta Regional Commission and is not part of this TMDL implementation plan.

Land use in the watershed is primarily agricultural and residential, but the area is undergoing increasing subdivision development and commercial development. Masseys Lake and most of the area in Winder that drains to Marburg Creek is within Fort Yargo State Park.

Input from stakeholders indicated the following information about the watershed:

- It is not known what percentage of cattle operations have animals fenced out of the streams. This is part of the EQIP program and the development of Nutrient Management Plans (NMP). The basin is rapidly developing for residential and commercial land uses, and it is expected that most existing farms will be phased out within the ten-year time horizon of this plan.
- If the basin follows the general pattern of development on the periphery of the Atlanta metropolitan area and the Athens metropolitan area, production farms may give way in some cases to "hobby farms" and small horse operations. These generally do not receive attention from, and do not seek out the assistance of, the agricultural support agencies. They are not eligible for matching grant programs or the NMP program and, because they are not operated for profit, so there is no

payback of investment in fencing, feeding facilities, etc. These operations may pose problems for water quality in the future.

- Poultry farms usually have stack houses, NMP's, utilize advice on land application rates of chicken manure, and setbacks and buffers on streams. About 80% of farms comply with these BMP's, and education is continuing. Regulation of chicken litter distribution is expected soon.
- It is not known how many illicit connections to storm drains, failed septic tanks, or cases of outright lack of treatment there may be in the basin.
- The City of Winder's portion of the watershed drains to Masseys Lake in Fort Yargo State Park.
- There are no local ordinances regulating the management of household pets or kennel waste.

## **Implementation**

There are several actions either in place or planned by the communities. Besides the agricultural initiatives mentioned above, local governments are in the midst of changing their management of storm water runoff. These actions include the following.

Barrow County and the City of Auburn have submitted Notices of Intent to the Georgia EPD as a requirement for meeting Phase II Stormwater NPDES Permits. The plan to institute stormwater management plans in the next five years.

Keep Barrow County Beautiful has a program of citizen and school education on environmental issues, including water quality.

Walton County has adopted, within the past year, new land development ordinances that include several items known to reduce fecal coliform runoff and pollution:

- A storm water management ordinance and revised sedimentation control ordinance.
- Increased stream buffers from 25 ft to 50 ft county wide and to 100 ft on streams in small water supply watersheds, including the Alcovy River.
- Detention facilities capable of treating runoff from all new development, based on the Georgia Stormwater Manual.
- Regulated design of parking lot islands to maximize infiltration and minimize runoff.

A table showing the status of many BMP's that have a positive effect on fecal coliform pollution is included below.

Specific sources of fecal coliform must be identified before action is required. Likely sources of fecal coliform identified are failed or absent septic tanks, leaking sewer lines, agricultural runoff, agricultural pollution from cattle with direct access to streams, pet and kennel discharges, "hobby farms" keeping large animals in direct contact with the streams, and miscellaneous runoff from storm water from urbanized areas. The stakeholders recommended that the extent of the contribution from specific sources be identified before remedial action is begun.

The plan therefore identifies the following steps for load reduction:

- Continued implementation of recent and proposed ordinance adoptions and revisions.
- Detailed sampling of the streams to localize the sources of pollutant, beginning with a general survey and following on with more and more localized and detailed sampling until specific sources can be identified.
- Implementation of BMP's specific to the identified sources, including septic tank maintenance, sewer leak detection, Nutrient Management Plan implementation on the remaining agricultural operations, a kennel ordinance, a large-animal density ordinance (or equivalent provisions in existing zoning ordinances).
- The development of a storm water utility to fund BMP's for existing and future development is being discussed by several communities, but not adopted as part of the plan at this time.
- Ongoing educational efforts will proceed under the auspices of Walton County, the NRCS, and Agricultural Extension. These will include identifying and contacting "hobby farm" owners and educating them about stream buffers and limiting access; continued promotion of agricultural BMP's; distribution of brochures on septic tank maintenance; continuous activities of the Keep Barrow and Walton County Beautiful and Adopt-a-Stream programs involving citizens and the community.
- The effectiveness of the implementation plan should be evaluated after five years by incorporating the implementation activities that have taken place, updated land use information, and additional monitoring data into the BASINS model with which the TMDL was prepared.

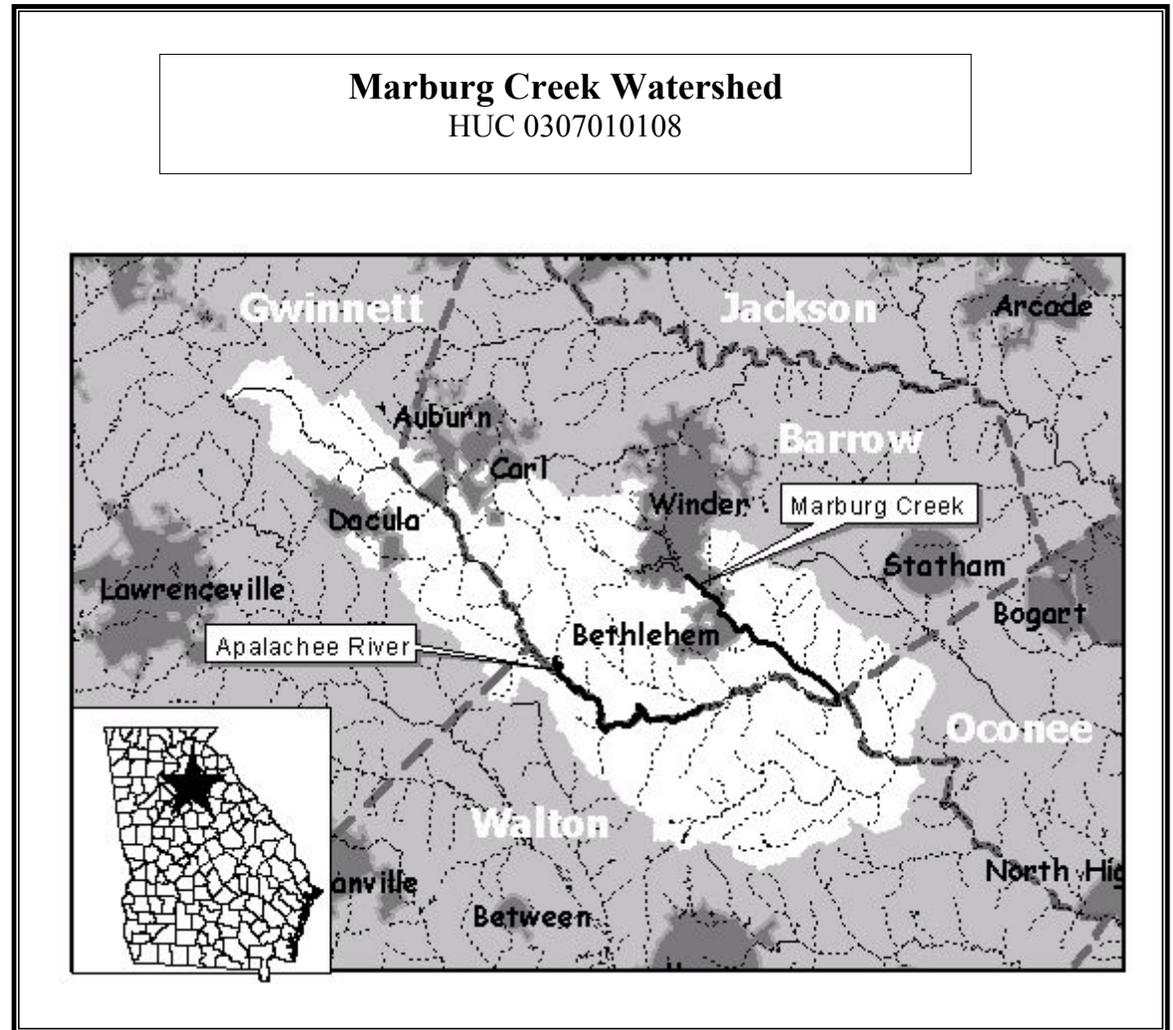
**STATE OF GEORGIA  
REVISED  
TMDL IMPLEMENTATION PLAN  
WATERSHED APPROACH  
Oconee River Basin**

Local Watershed Governments

- Northeast Georgia RDC
  - Barrow County
  - Walton County
  - Gwinnett County
  - City of Winder
  - City of Bethlehem
  - City of Carl

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired streams and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding sources affecting the sub-basin. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual segments.



**FIGURE 1**

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Apalachee River	Williamson Creek to Marburg Creek	Fecal Coliform
2. Marburg Creek	Masseys Lake to Apalachee River	Fecal Coliform

\*These Waterbody Numbers are referenced throughout the Implementation Plan.

# Action Plan for Marburg Creek Watershed

Marburg Creek Watershed  
HUC 0307010108

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input type="checkbox"/> Dissolved Oxygen (DO)	<input type="checkbox"/> Industrial	<input type="checkbox"/> Habitat		
<input checked="" type="checkbox"/> Fecal Coliform (FC)	<input checked="" type="checkbox"/> Urban	<input checked="" type="checkbox"/> Recreation		
<input type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Agriculture	<input checked="" type="checkbox"/> Drinking Water		
<input type="checkbox"/> Metals	<input type="checkbox"/> Forestry	<input type="checkbox"/> Aesthetics		
<input type="checkbox"/> Fish Consumption Guidelines (FCG)	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Other (Please List)		
<input type="checkbox"/> Other (Please List)	<input type="checkbox"/> Other (Please List)			

## INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan. List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Barrow County W&S Auth, City of Winder.	Distribute brochures about septic tank maintenance to water customers.	1,2	Homeowners with septic systems.	Ongoing
Upper Oconee Watershed Network	Sponsor river- and stream-based activities, educate membership on water quality issues.	1,2	Citizens in all counties.	Ongoing
Natural Resource Conservation Service (NRCS)	Provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment	1,2	Private land owners	Continuous
GA Waterwise Council	The Water Sourcebook	1,2	Grades K-12	Ongoing
NEGRDC	Distributing ACCG/DCA Water Resources Toolkit CD-ROM	1,2	Public, local governments	Ongoing
Walton County Clean & Beautiful	Provides educational programs on water quality for the public and schools in Walton County. Promotes Adopt-a-Stream program	1	Schools, civic groups, public	Continuous
Walton Soil and Water Conservation District	Has ongoing programs to educate property owners about best management practices; reviews soil erosion & sedimentation plans	1	Developers, private land owners	Continuous

## STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, 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
David Bennett/ Walton SWCD	c/o Walton EMC, PO Box 260	Monroe	GA	30655	770-267-6253	
William L Brown/Walton SWCD	1669 Pleasant Valley Rd. NE	Monroe	GA	30655	770-267-5192	
William Carlan/Walton Coop Ext Ser.	PO Box 151	Monroe	GA	30655		
Bob Cowan/Walton Planning & Devel	126 Court St, Annex 1	Monroe	GA	30655	770-267-1485	
Clifton Harrison/Walton SWCD	1189 Criswell Rd SE	Monroe	GA	30655		
George N Malcom/Walton SWCD	1210 Pleasant Valley Rd	Monroe	GA	30655		
Jose Pagan/NRCS	PO Box 8	Monroe	GA	30655	770-267-8363	
John H Redding/Walton SWCD	713 East Spring St, PO Box 409	Monroe	GA	30655	770-267-5283	
Ray Spencer/NRCS	205 E. Jefferson St	Madison	GA	30650	800-593-3192	
Roy L. Varner/Upper Ocmul SWCD	11093 Hwy 36	Covington	GA	30209	770-786-3667	
Julie Todd/GA-EPD	4220 International Pkwy, Ste 101	Atlanta	GA	30354	404-675-1651	
Walton County Clean & Beautiful	2051 Leroy Anderson Rd.	Monroe	GA	30655	770-267-1443	
Earl Brantley / Natural Resources Conservation Service	Fed Bldg, 355 E. Hancock Av	Athens	GA	30601	(706)546-2039	
Stan Coley / Barrow County Water & Sewerage Auth.	954 Robertson Bridge Rd	Statham	GA	30666	(770)725-8100	
Neil Counts / City of Winder	90 N. Broad St, PO Box 566	Winder		30680	(770)867-3106	
Walter Elder, III / Barrow Co Board of Commissioners	233 E. Broad Street	Winder		30680	(770)307-3005	
Britton West / Barrow Co. Cooperative Ext Ser	PO Box L, 90 Lanthier Street	Winder		30680	(770)307-3029	

**WATER BODIES/STREAMS COVERED IN THIS PLAN:**

These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed stream on 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>Apalachee River</b>	Williamson Creek to Marburg Creek	7	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Barrow	Walton		Nonpoint	
Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geometric mean May-Oct)	77%		February 2002

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>Marburg Creek</b>	Masseys Lake to Apalachee River	7	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Barrow			Nonpoint (Urban Runoff) Point (Municipal)	
Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geometric mean May-Oct)	77%		February 2002

## POLLUTANT SOURCES

It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired.

List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant )

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>	<b>Impacted Waterbodies*</b>
Fecal coliform	Residences	Failure of inadequately maintained septic tanks/systems cause runoff from pooled sewage; infiltration of untreated material through soils or erosion channels.	1, 2
Fecal coliform	Agriculture	Unrestricted access of cattle to streams	1, 2
Fecal coliform	Urban areas	Pet kennels and unrestricted deposition by pets onto surfaces, especially impervious surfaces	1, 2
Fecal coliform	Suburban and transitional areas	“Hobby farms” and horse farms with unrestricted animal access to streams	1, 2
Fecal coliform	Urban areas	Leaking sewer lines	2
Fecal coliform	Urban, suburban areas	Illicit discharges	1, 2
Sediment	Agriculture	Cattle in streams causing stream bank deterioration and accelerated erosion	1
Sediment	Urban areas	Runoff from impervious surfaces in urban and suburban areas	1,2
Sediment	Suburban and transitional areas	Insufficient sediment and erosion control on construction sites	1,2

## MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

**(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, Local water resource monitoring)**

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to measure progress in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
NRCS and Ag Extension BMPs	NRCS, USDA	Education about, and cost-shared implementation of agricultural BMPs to minimize introduction of fecal material to streams	Ongoing	In progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Agriculture	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Measure percent of animals in watershed restricted from direct access and under a nutrient management plan	2003	2007	Goal of 80% of agricultural enterprises will have BMP's in place to reduce animal contact with streams and excess litter distribution, by 2007.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Enhanced development ordinance	Barrow County, City of Winder	Enhanced erosion & sedimentation control implementation; stream buffer and stormwater ordinances.	Present/Ongoing	Planned & Considered	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Urban runoff	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
New development will be required to meet higher standards	Previous	Ongoing	

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stormwater Ordinance	City of Winder, Barrow County (planned)	Limits on impervious surfaces, require detention of 2-yr return interval storm.	End of 2003	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Urban runoff	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
New development will be regulated	End of 2003	Ongoing	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Illicit Discharge Ordinance	City of Winder	Prohibits discharge of sewage into waters of the state or storm water conveyances.	Current	Ongoing	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Residential & commercial	2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
All streams examined for illicit discharges, all discovered discharges eliminated	Current	Ongoing	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Coliform source identification	Barrow County, Walton County, City of Winder, NEGRDC	Uses E. coli testing to determine likely specific sources of coliforms.	2003	Ongoing	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Agricultural, Residential & commercial	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Likely sources identified for all affected streams and tributaries	2004	2005	

<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>	<b>Enacted/ Projected Date</b>	<b>Status</b>	<b>Regulatory/ Voluntary</b>
Enhanced development ordinance and storm water ordinance	Walton County	Incorporates wider buffers, impervious surface limits, requires detention facilities, parking lot design standards, et al. Imposes storm water detention facilities on most new development.	Present/Ongoing	Enforced	Regulatory

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Impacted Waterbodies*</b>	<b>Anticipated or Past Effectiveness</b>
Fecal coliform	Urban runoff	1	Very effective

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
All new development will be regulated	Previous	Ongoing	Acres under development must be recorded and data maintained.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Oconee River Basin Management Plan	Georgia EPD	Detailed management plan for the Oconee River Basin. The purpose of the plan is to develop and implement a river basin planning program to protect, enhance, and restore waters for the State of Georgia, which will provide for effective monitoring, allocation, use, regulation, and management of water resources.	Existing	To be revised 2003	Regulatory/ Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Multiple	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
• Prepare/Update Draft River Basin Plan	2002	2003	Plan revision due in 2003.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, 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	1964	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Multiple	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
EPD acts on complaints from affected parties	Ongoing	Ongoing	Detailed geographic coverage of tributaries and reaches of concern to identify specific sources
Detailed sampling of streams and tributaries	2003	2004	



## MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned/proposed sampling activities or other surveys. (Monitoring data that placed stream on 303(d) list will be provided if requested.)

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
TMDL Evaluation	EPD	1,2	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	1999	1999	Previous
TMDL Monitoring	EPD	1,2	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	2004	2004	Proposed
Source identification	Barrow County, City of Winder, Walton County, UOWN, NEGRDC	1,2	Fecal coliform	Systematic surveys to identify sources of contamination	2004	2012	Current, Proposed

## CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

Percent of concentration or load change (monitoring program) \_\_\_\_\_  
 If modeling of the basin in 2008 (five year anniversary) shows a 20% decline in fecal coliform loadings, the plan will be successful. At ten years of implementation, the streams should all be de-listed for fecal coliform.

*If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.*

- Categorical change in classification of the stream (delisting the stream is the goal)

Significant reductions in fecal coliform loading should result in improving the evaluations of both streams from “not supporting” to “partially supporting” their designated uses within 10 years.

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- Regulatory controls or activities installed (ordinances, laws)

By 2008 (five year anniversary) stormwater ordinances and all other proposed regulatory activities should be in place and applied to all new development.

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- Best management practices installed (agricultural, forestry, urban)

By 2008, it is anticipated that at least half the agricultural use in the basin will be replaced with residential and commercial uses. Of the remaining agricultural activities, it is planned that at least 50% will no longer have free access to streams without BMP’s installed.

By 2008, all new development will be in compliance with enhanced stream buffer and storm water ordinances. All illicit discharges will be removed.

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**COMMENTS**

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Marburg Creek Watershed  
HUC 0307010108

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**Environmental Protection Division of the Department of Natural Resources,  
State of Georgia.**