

**Revised TMDL Implementation Plan
HUC 0307010109 - Apalachee River
August, 2003**

HUC 0307010109 is located primarily in Morgan, Walton, and Oconee counties.

The stream segment of concern in this TMDL implementation plan is the Apalachee River from the confluence with Marburg Creek to Lake Oconee. The primary jurisdictions that drain to the segments of concern include Morgan, Walton, and Oconee counties and the cities of Monroe, Good Hope, North High Shoals, Bostwick, and Buckhead. The Apalachee River forms the boundary between Oconee County and both Walton and Morgan counties.

The pollutant of concern for this implementation plan is fecal coliform. The stream is listed as “partially supporting” its designated use.

The Apalachee River was 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 this segment of the Apalachee River of 73%.

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. Another reach of the Apalachee River contained in HUC 0307010108 is being addressed in another implementation plan.

Land use in the watershed is primarily forestry, agricultural and residential, but the area is undergoing moderate development. The Monroe Utilities Network operates a waste water treatment plant on Jacks Creek, a tributary of the Apalachee River. Jacks Creek is not listed as being impaired. The City of Madison has a water supply intake on the Apalachee River arm of Lake Oconee.

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).
- In the future, 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. 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.
- 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 implement activities that should reduce fecal loading on streams in this watershed. These actions include the following.

Keep Walton County Beautiful has a program of citizen and school education on environmental issues, including water quality, and operates an Adopt-a-Stream program.

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.
- 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.

Morgan County has also adopted a set of BMP's that are effective in reducing fecal loading, including a stormwater ordinance, illicit discharge ordinance, and other measures.

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, illicit discharges, 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).
- Ongoing educational efforts will proceed under the auspices of Walton County, Morgan County, Oconee 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 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.

Local Government Activities in the Lower Oconee Watershed

Codes: **E** = active/enforced **P** = planned **C** = considered **R** = rejected

	Walton Co.	Morgan Co.	Oconee Co.	Greene Co.
<i>Ordinance/Regs</i>				
Stormwater Ordinance	P	E		C
Local Soil E & S Control	E	E		E
Illicit Discharge Ordinance		E		
Stream Buffer Ordinance	E/P	C		E
Impervious Surface Limits	E	E		
Septic Tank Maintenance		E		E
Wetland Protection Ordinance	P	E		E
<i>Programs/ Other Activities:</i>				
Active Sewer Leak Detection				E
Watershed Assessment Study				
SWAP Study	E	E		E
Wildlife Habitat Incentive Program				E
Greenspace Program				
Watershed Protection Plan	E	E		E
River Corridor Protection				E
Pollution Source Identification		P		P
Clean & Beautiful	E	E		P
Nutrient Man. Program/Equip, etc.	E			E
Stormwater Utility				
Stream Bank Restoration		E		
Conservation Subdivisions		E		

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

Local Watershed Governments

- Northeast Georgia RDC
- Oconee County
- Morgan County
- Greene County
- Walton County
- City of North High Shoals
- City of Bostwick
- City of Monroe

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.

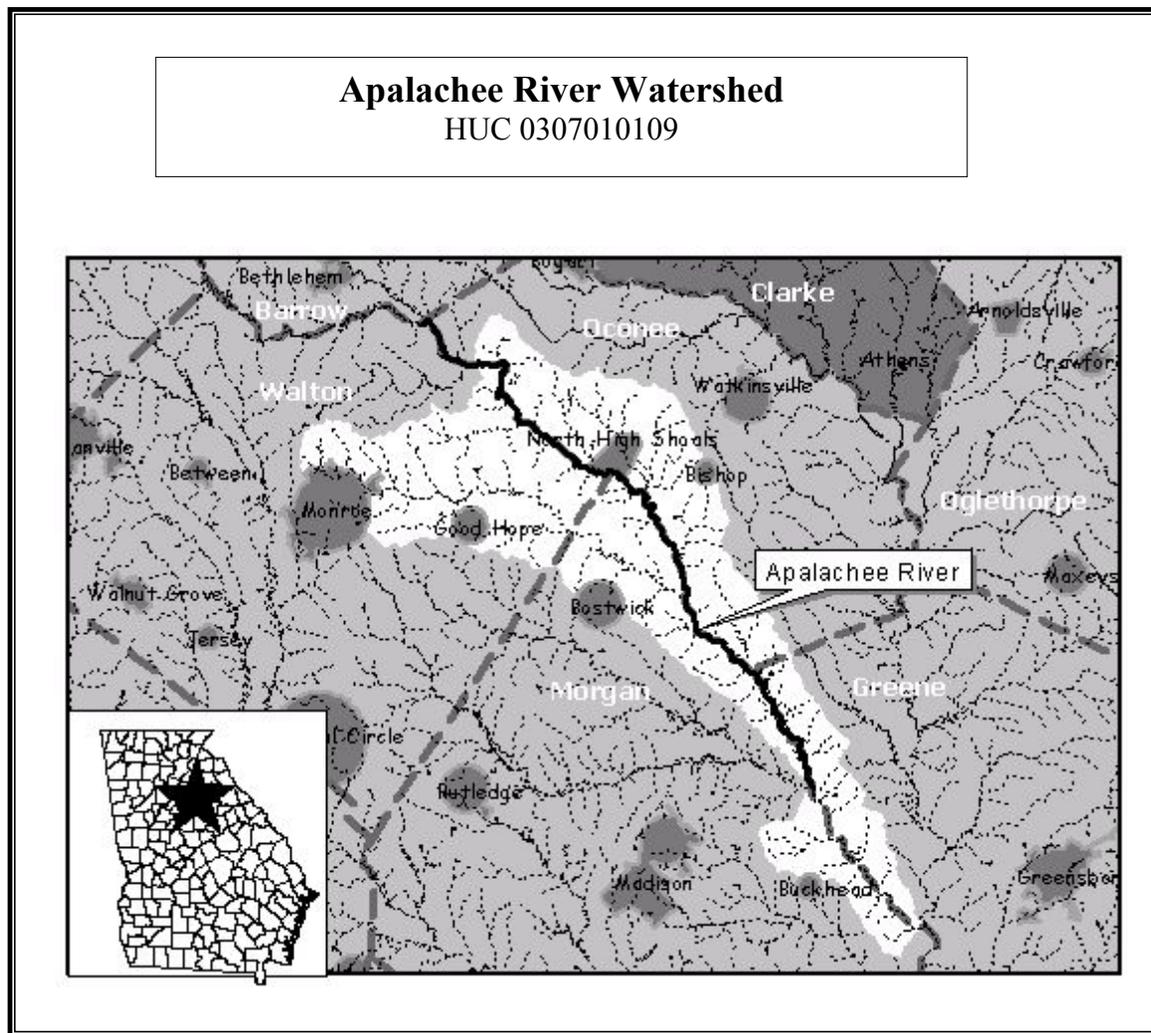


FIGURE 1

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

*These Waterbody Numbers are referenced throughout the Implementation Plan.

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)
Natural Resource Conservation Service (NRCS)	Provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment	1	Private land owners	Continuous
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
Walton, Oconee, Morgan, Greene counties and all cities	Advisement to property owners of potential problems with septic tanks, requirements for septic tank maintenance, notification of identified septic tank problems when they are discovered.	1	Urban and rural residences.	09/03 and ongoing.

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 Ocmulgee SWCD	11093 Hwy 36	Covington	GA	30209	770-786-3667	
Julie Owens/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	
Greene County Board of Commissioners	113 North Main St., Suite 306	Greensboro	GA	30642	706-453-7716	
Greene County Board of Health/Health Department	1031 Appalachee Rd.	Greensboro	GA	30642	706-453-7561	
Natural Resources Conservation Service	1600 Main St.	Greensboro	GA	30642	706-453-7021	
Georgia Legal Watch/Community Watershed Project	P.O. Box 531	Athens	GA	30603	(706)546-9008	
Greene County Cooperative Extension Service	124 South Main Street	Greensboro	GA	30642	(706)453-2083	psapp@uga.edu
Les Reed / Save Lake Oconee	1040 Sword Hilt Road	Greensboro	GA	30642	706-467-3682	lesreed@negia.net
Morgan County Planning Department	384 Hancock Street	Madison	GA	30650	(706)342-4373	
Morgan County Cooperative Extension Service	440 Hancock Street	Madison	GA	30650	(706)342-2214	
NRCS Morgan County	205 East Jefferson Street	Madison	GA	30650	(800)593-3192	
City of Madison	P.O. Box 32	Madison	GA	30650	(706)342-1251	

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)
Apalachee River	Marburg Creek to Lake Oconee	35	Fishing	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Oconee/Walton	Greene/Morgan		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)	73%		February 2002

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
Permitting and inspection of septic tanks	Greene, Walton, Morgan, Oconee County Health Departments	Issues permits for new septic tanks. Responds to complaints of septic tank failures. Prevents septic tank pump-out into streams.	Ongoing	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Residential septic tanks	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
All new septic tanks are permitted after inspection	Ongoing	Ongoing	Program is effective for new septic tanks. No control over existing sites.
Department responds to all complaints of failed septic tanks.	Ongoing	Ongoing	Program is effective only for systems where complaints are filed. Available remedial action limited to fines

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Land Development Ordinances	Walton, Oconee, Morgan, Greene counties and all cities	Subdivision ordinances, zoning ordinances, buffer ordinances, stormwater ordinances, provide for minimum setbacks and natural vegetated buffers on streams and stormwater management.	Current	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Urban runoff, septic tanks	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
All new development will meet setback and riparian buffer requirements.	Current	Ongoing	Riparian buffers are somewhat effective in reducing FC loads. Setback of septic tank drain fields is more effective. Stormwater ordinances very effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Targeted sampling for E. coli	Greene County, City of Greensboro, volunteers	Systematic sampling of streams to identify sources of E. coli using methodology developed by the University of Georgia and supported by the Northeast Georgia Regional Development Center and Georgia EPD.	2004	Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Septic, sewer leaks, agriculture, urban runoff.	1	Very effective in identifying sources.

Measurable Milestones	Schedule		Comments
	Start	End	
By 2005, the geographic areas of greatest concern will be identified for all listed streams in the watershed	01/04	12/04	

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Cattle farming BMP's	NRCS, Extension Service	Promotes BMP's to reduce direct contact. The EQUIP program, nutrient management plans, and other programs are available to farmers with some monetary assistance (cost sharing).	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Animals with direct access to streams, heavy use areas with runoff direct to streams.	1,2	Very effective where implemented.

Measurable Milestones	Schedule		Comments
	Start	End	
80% of agricultural operations will have implemented some or all BMP's targeted to reduce fecal coliform by 2014.	Ongoing	2014	BMP's are proven to be very effective where implemented. Barriers include cost to the property owner and lack of education.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Seek to remedy the poorly-functioning septic tank systems by providing sewerage.	Greene County, City of Greensboro, private corporations	Seek ways to extend existing sewerage systems to areas with problems; examine possibilities of new sewerage systems.	Unknown	Ongoing	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Poorly functioning septic tanks	1,2	Very effective.

Measurable Milestones	Schedule		Comments
	Start	End	
Unknown	Ongoing	Ongoing	This solution at the present time lacks a funding mechanism. As projects become feasible, they will be pursued.

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	

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 reduction of Town Creek and Beaverdam Creek from “not supporting” to “partially supporting” its designated use.

- Regulatory controls or activities installed (ordinances, laws) _____

All new development will follow land development ordinances, including riparian buffer, setback, erosion and sediment control, and stormwater management practices. All new septic tanks will be permitted after inspection and appropriate testing.

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

By the plan target year of 2013, 100% of farms should be operating under BMP’s recommended by the NRCS and Extension Service.

All future residential and commercial development will have adequate septic tank systems, approved alternative wastewater disposal technologies, or connection to a sewerage system.

COMMENTS

Apalachee River Watershed
HUC 0307010109

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