

**Revised TMDL Implementation Plan  
HUC 0307010105 - Trail Creek and North Oconee River  
April, 2003**

HUC 0307010105 is located entirely within Athens-Clarke County.

The stream segments of concern in this TMDL implementation plan include the North Oconee River from the Jackson-Clarke County line to the confluence with Sandy Creek, the North Oconee River from Sandy Creek to the confluence with Trail Creek, the North Oconee River from Trail Creek to the confluence with the Middle Oconee River, Trail Creek, and East Fork Trail Creek. The only jurisdiction that drains to these segments is Athens-Clarke County. However, the University of Georgia occupies a substantial portion of the basin, and the Athens-Clarke County government has limited influence over the water quality practices of the University.

Implementation plans for West Fork Trail Creek and Carver Branch (a tributary of East Fork Trail Creek) were developed separately in 2000. With Georgia EPD's watershed-based approach to TMDL's, these stream segments have been included in this TMDL Implementation Plan. The implementation plans for these tributaries are still in effect and are incorporated into this plan by reference.

Carr Creek is also included in this watershed. Carr Creek is listed on the Section 303(d) list as a segment not supporting its designated use for fishing, based on pH, biotic diversity (sediment), and fecal coliform. Carr Creek drains an industrial area with known problems, including one EPA Superfund site undergoing remediation. Because of its unique nature, Carr Creek will be treated with a separate TMDL implementation plan.

The pollutant of concern in all segments addressed in this implementation plan is fecal coliform. The North Oconee River from Sandy Creek to Trail Creek, Trail Creek, East Fork Trail Creek, and Carver Branch are listed as "not supporting" their designated uses for fishing or fishing/drinking water. The remaining segments are listed as "partially supporting" their designated fishing or fishing/drinking water 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 as follows:

North Oconee River, Jackson County to Sandy Creek	60%
North Oconee River, Sandy Creek to Trail Creek	60%
North Oconee River, Trail Creek to Middle Oconee	72%
East Fork Trail Creek	76%

A TMDL was developed for West Fork Trail Creek in 1998 that recommended a 40% reduction in fecal coliform loading. A TMDL developed for Carver Branch in 1998 recommended a reduction of 85%.

Land use in the watershed is heavily urban, draining the downtown area of Athens-Clarke County. Some tributaries drain predominantly agricultural/residential/vacant land areas, but the area is undergoing rapid urbanization, with increasing subdivision development and industrial development. The Trail Creek drainage includes Athens-Clarke County's major developing industrial park.

Input from stakeholders indicated the following information about the watershed:

- The basin is rapidly developing for residential, commercial, and industrial land uses. Agricultural use (cattle with access to streams) may have contributed to fecal coliform counts during the monitoring period, but the little remaining agricultural use is expected to be phased out within the ten-year time horizon of this plan. It is unlikely that this area will see much development of "hobby farm" type agriculture.
- There are potential sources of pollution on Trail Creek tributaries in the form of sewage treatment (oxidation) ponds serving mobile home communities.
- 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. Failed septic tanks are suspected in some cases where older neighborhoods have not yet been served with sewerage. Illicit connections are possible in urbanized areas.
- A known source of fecal coliform identified in a previous TMDL Implementation Plan prepared in 2000 for West Fork Trail Creek, i.e. oxidation ponds serving extensive mobile home parks, have been improved in recent months. Specifically, their NPDES discharge permit was amended to provide for a fecal coliform limit. Since then, fecal coliform counts in West Fork Trail Creek, obtained by Athens-Clarke County staff, have improved significantly.

## **Implementation**

There are several on-going actions either in place or planned by Athens-Clarke County.

Athens-Clarke County is completing a watershed assessment in support of changes in its wastewater treatment facilities and implementing an NPDES Phase II Storm Water implementation plan. The current Athens-Clarke County water and sewer plan calls for the West Fork Trail Creek area to be served by public sewer by 2003, when the oxidation ponds will be taken out of service. Athens-Clarke County has also increased its buffer protection on some designated streams from the minimum state standard of 25 feet to 75 feet. Athens-Clarke County adopted a new land development code in December, 2000, that will require additional treatment of storm water runoff for water quality as well as water quality. The ordinance at present calls for implementation through storm water management manuals to be adopted at a later date. These manuals are under

development. This change will affect all future development, but not existing development.

It was the consensus of stakeholders that the specific sources of fecal coliform must be identified before action is required. Likely sources of fecal coliform identified were 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 advised. Source identification has already begun on Trail Creek and its tributaries, with involvement of a local volunteer group, as a result of the implementation plans for these specific segments developed in 2000.

The plan therefore identifies the following steps for load reduction:

- Continued implementation of recent and proposed ordinance adoptions and revisions, as well as Athens-Clarke County’s Phase II Storm Water Plan.
- 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,.
- The development of a storm water utility to fund BMP’s for existing and future development is being discussed by Athens-Clarke County, but not adopted as part of the plan at this time.
- Extension of public sewer lines to many areas not currently served, resulting in the replacement of failing oxidation ponds.
- 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 Upper Oconee Watershed

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

	Athens-Clarke	Barrow Co.	Jackson Co.		Arcade	Statham
<i>Ordinance/Activity</i>						
Stormwater Ordinance	<b>E</b>	<b>P</b>	<b>E/P</b>			
Stormwater Utility	<b>P</b>	<b>P</b>	<b>C</b>			
Illicit Discharge Ordinance	<b>E</b>	<b>E</b>	<b>C</b>			
Stream Buffer Ordinance	<b>E</b>	<b>E</b>	<b>E</b>		<b>E</b>	
Active Sewer Leak Detection	<b>E</b>	<b>E</b>				
Septic Tank Maintenance			<b>C</b>			
Local Soil E & S Control	<b>E</b>	<b>E</b>	<b>E</b>		<b>E</b>	
Impervious Surface Limits	<b>E</b>	<b>E</b>	<b>E</b>			
EQUIP program for Ag	<b>E</b>	<b>P</b>	<b>E</b>			
Other Agriculture Programs		<b>E</b>	<b>E</b>			
Watershed Assessment Study	<b>E</b>		<b>E</b>			
SWAP Study			<b>E</b>			
Wildlife Habitat Incentive Program			<b>E</b>			
Nutrient Man. Program			<b>E</b>			
Greenspace Program	<b>E</b>		<b>E</b>			
Stormwater Master Plan			<b>C</b>			
Watershed Protection Plan			<b>P</b>		<b>E</b>	
Wetland Protection Ordinance						
Fecal Source Identification	<b>E</b>	<b>E</b>				

**NOTES:**

*Jackson County:*

- Stormwater ordinance hopefully by end of 2003
- Stormwater utility and Illicit discharge ordinance will be considered over next few years
- Not sure about specifics of sewer leak detection in municipalities
- Ag programs are volunteer/incentive
- Watershed assessments and SWAP are studies (no enforcement/implementation)
- Working on Stormwater masterplan for entire county over next couple of years

*Arcade:*

- Stormwater ordinance could be considered in future if needed

*Athens-Clarke County:*

- Hunnicut Creek: Feed Mill on Tallassee Rd possible problem – need to get someone to work with them. Sewerlines in the areas will also be upgraded within next 12 months.

# STATE OF GEORGIA REVISED TMDL IMPLEMENTATION PLAN WATERSHED APPROACH

## Local Watershed Governments

Northeast Georgia RDC  
Athens-Clarke County  
Jackson County  
Madison County

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.

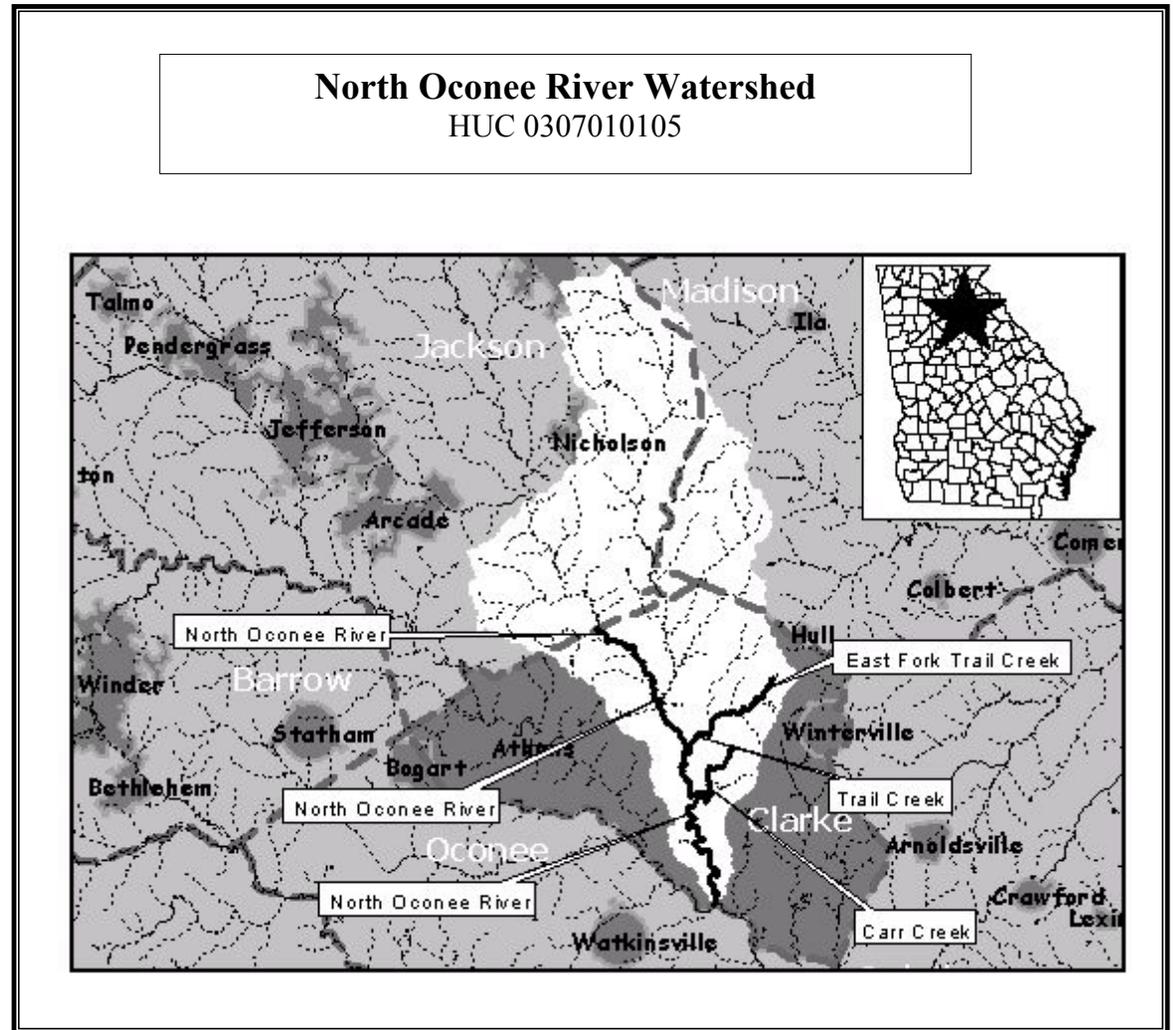


FIGURE 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Carr Creek	Headwaters to N. Oconee River	Biota (Sediment), pH, FC
2. East Fork Trail Creek	Headwaters to W. Fork Trail Creek	FC
3. North Oconee River	Sandy Creek to Trail Creek, Athens	FC

Impaired Waterbody*	Impaired Stream Location	Impairment
4. North Oconee River	Trail Creek to Oconee River	FC
5. North Oconee River	Jackson County to Sandy Creek	FC
6. Trail Creek	E. Fork Trail Creek to North Oconee River	FC

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

# Action Plan for North Oconee River Watershed

North Oconee River Watershed  
HUC 0307010105

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

## 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.

Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Keep Jackson County Beautiful	New agency is planned. Will carry out water quality education program in civic groups, schools, and for the public.	5	Public, educators, farm and civic groups.	2003 and ongoing
Keep Athens-Clarke County Beautiful	Water quality education program for public, civic groups, schools.	1,2,3,4,5,6	Public, educators, farm and civic groups.	Ongoing
Jackson County W&S Authority, City of Arcade, Barrow County W&S Auth.	Distribute brochures about septic tank maintenance to water customers.	5	Homeowners with septic systems.	Ongoing
Upper Oconee Watershed Network	Sponsor river- and stream-based activities, educate membership on water quality issues.	1,2,3,4,5,6	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	2,3,5	Private land owners	Continuous
GA Waterwise Council	The Water Sourcebook	1,2,3,4,5,6	Grades K-12	Ongoing
NEGRDC	Distributing ACCG/DCA Water Resources Toolkit CD-ROM	1,2,3,4,5,6	Public, local governments	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.

<b>Name/Organization</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>	<b>E-Mail</b>
Robert Amos / Georgia Soil & Water Conservation Comm.	P.O. Box 8024	Athens	GA	30603	(706)542-9233	
Earl Brantley / Natural Resources Conservation Service	Federal Bldg., 355 E. Hancock Ave	Athens	GA	30601	(706)546-2039	
David Clark / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3440	
Heidi Davison / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3010	
Gary Duck / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3470	
Beth Gavrilles / Athens Grow Green	P.O. Box 1085	Athens	GA	30603		
Terry Hanzak / GA Soil & Water Conservation Comm.	P.O. Box 8024	Athens	GA	30603	(706)542-9233	
Julie Owens / Georgia Environmental Protection Div	Suite 101, 4220 International Pkwy	Atlanta	GA	30354	(404)675-1651	
Jose Pagan / Natural Resources Conservation Service	P.O. Box 8, N. Midland Ave	Monroe	GA	30655	(770)267-8363	
Alan Reddish / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3020	
Melanie Ruhlman / Upper Oconee Watershed Network	P.O. Box 531	Athens	GA	30603		
Mark Shirley / Jackson County Cooperative Extension Ser	67 Athens Street	Jefferson	GA	30549	(706)367-6345	
Bob Snipes / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3020	
Ellen Sutherland / Georgia River Network	1090 South Milledge Ave	Athens	GA	30605	(706)549-4508	
Dan Wallace / Natural Resources Conservation Service	1291 Greensboro Highway	Watkinsville	GA	30677	(706)769-3990	
Melinda Weir / Georgia Legal Watch	264 North Jackson St	Athens	GA	30601	(706)546-9008	

**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>Carr Creek</b>	Headwaters to North Oconee River, Athens	2 (Fecal Coliform & Sediment) 11 (pH)	Fishing	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			Nonpoint (Urban Runoff) Point (Industry)	
Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
Biota (Sediment)	448 tons/year	87.3%		January 2002
pH	6.0 to 8.5 Standard Units	Not Listed in TMDL		February 2002
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geometric mean May-Oct)	76%		February 2002

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>East Fork Trail Creek</b>	Headwaters to West Fork Trail Creek, Athens	3	Fishing	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			Nonpoint (Urban Runoff)	
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)	76%		February 2002

Waterbody Name #3	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>North Oconee River</b>	Sandy Creek to Trail Creek, Athens	2	Fishing & Drinking Water	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			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)	60%		February 2002

Waterbody Name #4	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>North Oconee River</b>	Trail Creek to Oconee River	8	Fishing	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			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)	72%		February 2002

Waterbody Name #5	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>North Oconee River</b>	Jackson County to Sandy Creek	5	Fishing & Drinking Water	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			Nonpoint (Urban Runoff)	
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)	60%		February 2002

Waterbody Name #6	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>Trail Creek</b>	East Fork Trail Creek to North Oconee River	3	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Clarke			Nonpoint (Urban Runoff)	
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)	76%		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	Residential/Commercial areas	Failure of inadequately maintained oxidation ponds and septic systems creates runoff of untreated or partially treated sewage.	2,3,5,6
Fecal coliform	Agriculture	Unrestricted access of cattle to streams	3,5
Fecal coliform	Suburban and transitional areas	“Hobby farms” and horse farms with unrestricted animal access to streams	2,3,5
Fecal coliform	Agriculture	Incorrect handling and storage of chicken manure; Over-application of manure during pasture fertilization	3,5
Fecal coliform	Urban areas	Illicit discharge; intentional or negligent discharge of sewage directly into streams or indirectly via storm sewers; leaking sewer lines	1,2,3,4,5,6
Fecal coliform	Urban areas	Pet kennels and unrestricted deposition by pets onto surfaces, especially impervious surfaces	1,2,3,4,5,6
pH	Industrial	Surface and subsurface flow of pollutants from defunct fertilizer factory	1
Sediment (biota)	Industrial	Surface and subsurface flow of pollutants from defunct fertilizer factory	1

## 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	2,3,5	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	Jackson County	Enhanced erosion & sedimentation control implementation; new & improved ordinances based on watershed assessment.	Present/Ongoing 2004	Planned and Considered	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Urban runoff	5	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
New development will be required to meet higher standards	2003	Ongoing	

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	All	1, 2, 3,4,5,6	

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	

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Sewer line replacement, extension, and maintenance	Athens-Clarke County	Replace old, possibly leaking, sewer lines and extend sewer to areas served by septic tanks, in accordance with water and sewer plan.	2003	Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Failed septic systems and oxidation ponds, illicit discharges, leaking sewer lines	1,2,3,4,6	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Connect mobile home parks and Athens Christian School to city sewer	2004	2005	
Identify and repair leaking sewer lines	Previous	Ongoing	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
NPDES Phase II MS4 Municipal Stormwater Permit	Athens-Clarke County	Requires jurisdiction to have a comprehensive stormwater program that includes public education and participation, illicit discharge detection and elimination, construction site runoff control, post construction runoff control, pollution prevention, permitting and reporting, and program implementation plans.	2003	In progress, planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	various	1,2,3,4,6	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Completion of 5-year plan as described in permit application	2003	2008	

**POTENTIAL FUNDING SOURCES** The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

Funding Source	Responsible Authority	Status	Anticipated Funding Amount	Impacted Waterbodies*
Section 319(h) of the Clean Water Act	EPD/State of Georgia	Must Apply	N/A	1,2,3,4,5,6
Environmental Quality Incentive Program	NRCS	Must Apply	N/A	2,5
Conservation Reserve Program	NRCS (Farm Service Agency)	Must Apply	N/A	2,5
Watershed Surveys and Planning	NRCS	Must Apply	N/A	2,5
Conservation Technical Assistance	NRCS	Must Apply	N/A	2,5
Conservation Buffer Initiative	NRCS	Must Apply	N/A	2,5
Section 604(b) and/or 106 of the Clean Water Act	EPD via RDC	Must Apply	N/A	1,2,3,4,5,6

## 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	1,2,3,4,5,6	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	1999	1999	Previous
TMDL Monitoring	EPD	1,2,3,4,5,6	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	2004	2004	Proposed
Stormwater Monitoring	Athens-Clarke County	1,2,3,4,6	Fecal coliform	Ongoing monitoring for effectiveness of stormwater program	2003	Ongoing	Current, Proposed
Quarterly ambient conditions monitoring	Upper Oconee Watershed Network	1,2,6	Fecal coliform	Citizen activist monitoring of the state of water in the Upper Oconee Basin	Ongoing	Ongoing	Current
Source identification	Athens-Clarke County, UOWN, NEGRDC	1,2,6	Fecal coliform	Systematic surveys to identify sources of contamination	2002	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) \_\_\_\_\_  
\_\_\_\_\_

- 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.  
\_\_\_\_\_

- 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.  
\_\_\_\_\_

**COMMENTS**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Prepared By:	<u>Joseph Tichy</u>
Agency:	<u>Northeast Georgia Regional Development Center</u>
Address:	<u>305 Research Drive</u>
City:	<u>Athens</u> ST: <u>GA</u> ZIP: <u>30605</u>
E-mail:	<u><a href="mailto:jtichy@negrdc.org">jtichy@negrdc.org</a></u>
Date Submitted to EPD:	

The preparation of this report was financed in part through a grant from the U.S. Environmental Protection Agency under the provisions of Section 106 of the Federal Water Pollution Control Act, as amended.

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

**TOGETHER WE CAN MAKE A DIFFERENCE!**