

**Revised TMDL Implementation Plan
HUC 0307010106 - Oconee River and Cedar Creek
July, 2003**

HUC 03070101065 is located primarily in Clarke, Oconee, and Oglethorpe counties. A small portion of the watershed is in Greene County.

The stream segments of concern in this TMDL implementation plan include the Oconee River from the confluence of the North Oconee River and the Middle Oconee River to Barnett Shoals and Cedar Creek in Athens-Clarke County from its headwaters to the Oconee River.

The pollutant of concern in all segments addressed in this implementation plan is fecal coliform. Both Cedar Creek and the Oconee River to Barnett Shoals are listed as “not supporting” their designated uses for fishing. The Oconee River below Barnett Shoals is listed as “partially supporting.”

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:

Oconee River from Confluence to Barnett Shoals	49%
Oconee River from Barnett Shoals to Lake Oconee	35%
Cedar Creek	76%

Land use in the watershed is mixed. The watershed in Athens-Clarke County is urban, the land use in Oglethorpe County is mostly rural, and the land use in Oconee County and part of Oglethorpe County is lightly developed residential. Agricultural land use is present, but the agriculture is not considered intensive.

Input from stakeholders indicated the following information about the watershed:

- The basin is still largely undeveloped, with some cattle farming, and will likely develop in the next ten years into low- to medium density residential uses.
- Athens-Clarke County operates three wastewater treatment plants affecting the basin – one on Cedar Creek near the Oconee River, one on the North Oconee River, and one on the Middle Oconee River.

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. 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 quantity. 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.

Oconee County

Oglethorpe County has few tools available to address fecal coliform pollution from residential development or runoff. The county has not adopted zoning regulations and the land use development regulations that are often a part of zoning regulations. The minimum 25-foot buffer is enforced on subdivisions' designs, but there is no building inspection department, so enforcement on the ground is absent. The county does enforce the placement of septic tanks rather than illicit discharge into creeks.

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. Targeted sampling to identify sources will be a major undertaking in a watershed of the magnitude of the Oconee River.

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 and 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.
- 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

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

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

Local Watershed Governments

Northeast Georgia RDC
Athens-Clarke County
Oconee County
Oglethorpe County
City of Watkinsville
City of Winterville

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.

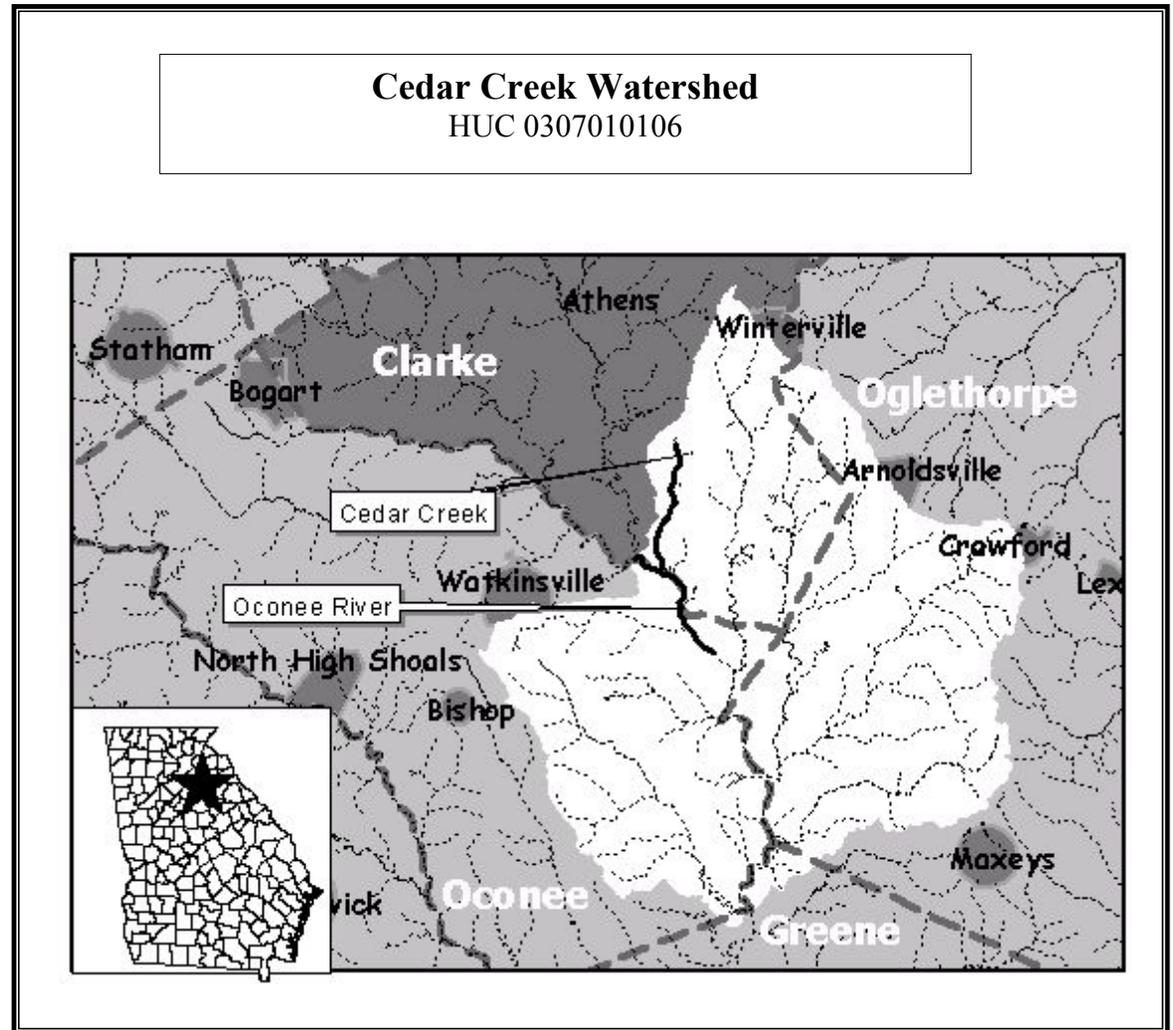


FIGURE 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Cedar Creek	Headwaters to Oconee River, Athens	Fecal Coliform
2. Oconee River	Confluence to North & Middle	Fecal Coliform

*These Waterbody Numbers are referenced throughout the Implementation Plan.

Action Plan for Cedar Creek Watershed

Cedar Creek Watershed
HUC 0307010106

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 type="checkbox"/> Urban	<input type="checkbox"/> Recreation		
<input type="checkbox"/> Sediment	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Drinking Water		
<input type="checkbox"/> Metals	<input type="checkbox"/> Forestry	<input type="checkbox"/> Aesthetics		
<input type="checkbox"/> Fish Consumption Guidelines (FCG)	<input 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)
Keep Athens-Clarke County Beautiful	Water quality education program for public, civic groups, schools.	1,2	Public, educators, farm and civic groups.	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.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
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		
Bob Snipes / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3020	

Name/Organization	Address	City	State	Zip	Phone	E-Mail
Georgia River Network	1090 South Millege 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	
Melissa Henderson / Oconee County Code Enforcement	P.O. Box 644	Watkinsville	GA	30677	(706) 769-3907	
John Faz / Oglethorpe County Code Enforcement	P.O. Box 261	Lexington	GA	30648-0261	(706) 743-7262	
Toby Hardigree, Mayor / Town of Watkinsville	P.O. Box 27	Watkinsville	GA	30677	(706) 769-5161	
James C. Mercer, Jr., Mayor, / City of Winterville	125 N. Church St., P.O. Box 306	Winterville	GA	30683-0306	(706) 742-8600	

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)
Cedar Creek	Headwaters to Oconee River, Athens	4	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

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Oconee River	Confluence of North and Middle	4	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Oconee	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)	49%		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)

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Fecal coliform	Residential/Commercial areas	Failure of inadequately maintained oxidation ponds and septic systems creates runoff of untreated or partially treated sewage.	1,2
Fecal coliform	Agriculture	Unrestricted access of cattle to streams	1
Fecal coliform	Suburban and transitional areas	“Hobby farms” and horse farms with unrestricted animal access to streams	1
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
Fecal coliform	Urban areas	Pet kennels and unrestricted deposition by pets onto surfaces, especially impervious surfaces	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
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	

Measurable Milestones	Schedule		Comments
	Start	End	
EPD acts on complaints from affected parties	Ongoing	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; Winterville, Watkinsville	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	Very effective

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

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	

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	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Identify and repair leaking sewer lines	Previous	Ongoing	

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) _____

COMMENTS

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