

**Revised TMDL Implementation Plan  
HUC 0307010103 - Middle Oconee River  
April, 2003**

HUC 0307010103 is located in Athens-Clarke and Jackson County. The stream drainage includes small portions of the cities of Arcade, Winder, Bogart, and Statham.

The stream segments of concern in this TMDL implementation plan include the Middle Oconee River from the Mulberry River to Big Bear Creek (listed as “not supporting” its designated use for fishing) and from Big Bear Creek to McNutt Creek (listed as “partially supporting its fishing designation). The pollutant of concern in all cases is fecal coliform. The primary jurisdictions that drain to the segments of concern include Jackson County and Athens-Clarke County. Other, smaller cities contribute to the drainage.

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. It recommends a reduction in the fecal coliform loading on the upper Middle Oconee of 43% and on the lower of 22%.

Separate TMDL’s were prepared in 1998 for stream segments in the basin that lie in Clarke County. TMDL Implementation Plans were prepared in 2000 for Brooklyn Creek, Hunnicutt Creek (aka Mitchell Bridge Branch), North Bypass Creek, and Anne Court Branch. These stream segments have been incorporated into the new TMDL.

A TMDL was prepared in 2002 for Kingswood Branch, a tributary of the Middle Oconee River, for pH violations. Sampling data from 1999 indicated a low pH (acidic condition) in the stream. The TMDL identified no source for the pH problems and gave no guidance for implementation. The stakeholders were unable to identify any potential sources of excess acidity. The implementation plan for Kingswood Branch for pH will be addressed through a stream-based IP at a later date after further investigation.

Land use in the upper Middle Oconee River watershed is primarily forest and pasture, but the area is undergoing rapid subdivision development. Land use in the lower portion below Big Bear Creek is primarily residential, with a mix of commercial uses and forested land. As the Middle Oconee River descends through Athens-Clarke County, the drainage becomes increasingly urbanized, and as it nears the confluence with McNutt Creek, entering tributaries drain dense commercial and residential districts.

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.

- In the Jackson County portion of the basin, 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 susceptible to matching grant programs or the NMP program 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.
- 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 is no sewerage in the Jackson County part of the basin. The Jackson County Water and Sewerage Authority is just beginning to extend sewer lines in the unincorporated county and has no plans to serve this area in the near future. In the Athens-Clarke County portion, some areas consist of subdivisions on septic tanks. The urbanized, central portion of Athens-Clarke County is served by sewer, but there are older parts of town where it is not known for certain if all residences and businesses are connected to the sewer system.
- Athens-Clarke County has an aggressive leak detection program, so it is not thought that leaking sewer lines are a significant contributor to current fecal coliform levels, but they may have been in the past.
- 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.

Jackson County is in the process of developing a watershed assessment in support of a wastewater treatment permit application. The recommendations of that study are not available, but are expected to include increased attention to stormwater, illicit connections, septic tanks, and other potential sources of fecal coliform.

Jackson County is investigating opening a Keep Georgia Beautiful office, which will take a lead role in educating schools, civic groups, and the general public on water-quality related issues. The program sponsors an Adopt-a-Stream program. Athens-Clarke County already operates a Keep Athens-Clarke Beautiful program.

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. However, built-out areas like the Brooklyn Creek drainage are fully developed, and new ordinances will affect only redevelopment projects.

Athens-Clarke County falls under the Phase II storm water regulations, and is currently undertaking a storm water study, conducted by the consulting firm of Arcadis, Geraghty, and Miller, in order to comply with the requirements of the general permit by 2003. Originally conceived as primarily a water quantity study, the scope of work has been amended to address water quality issues as well. Additional outcomes of this planning effort will be detailed drainage basin mapping at the 2-foot and 1-foot contour level, GIS mapping of all storm sewer lines of eight inches or greater, and the identification of specific problem areas.

Athens-Clarke County has and will continue to operate an aggressive leak detection program designed to discover and correct sewer leaks before they are reported as problems.

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

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.

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 Jackson County, the NRCS, Agricultural Extension, and the cities. 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 Jackson

County Beautiful and Adopt-a-Stream programs involving citizens and the community.

- Educational programs are ongoing and will continue in Athens-Clarke County, involving both governmental programs through the Keep Athens-Clarke Beautiful program and the volunteer Upper Oconee Watershed Network.
- 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	Winder
<i>Ordinance/Activity</i>							
Stormwater Ordinance	<b>E</b>	<b>P</b>	<b>E/P</b>				<b>E</b>
Stormwater Utility	<b>P</b>	<b>P</b>	<b>C</b>				
Illicit Discharge Ordinance	<b>E</b>	<b>E</b>	<b>C</b>				<b>E</b>
Stream Buffer Ordinance	<b>E</b>	<b>E</b>	<b>E</b>		<b>E</b>		<b>E</b>
Active Sewer Leak Detection	<b>E</b>	<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>		<b>E</b>
Impervious Surface Limits	<b>E</b>	<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>				<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>				<b>E</b>
River Corridor Protection						

**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.

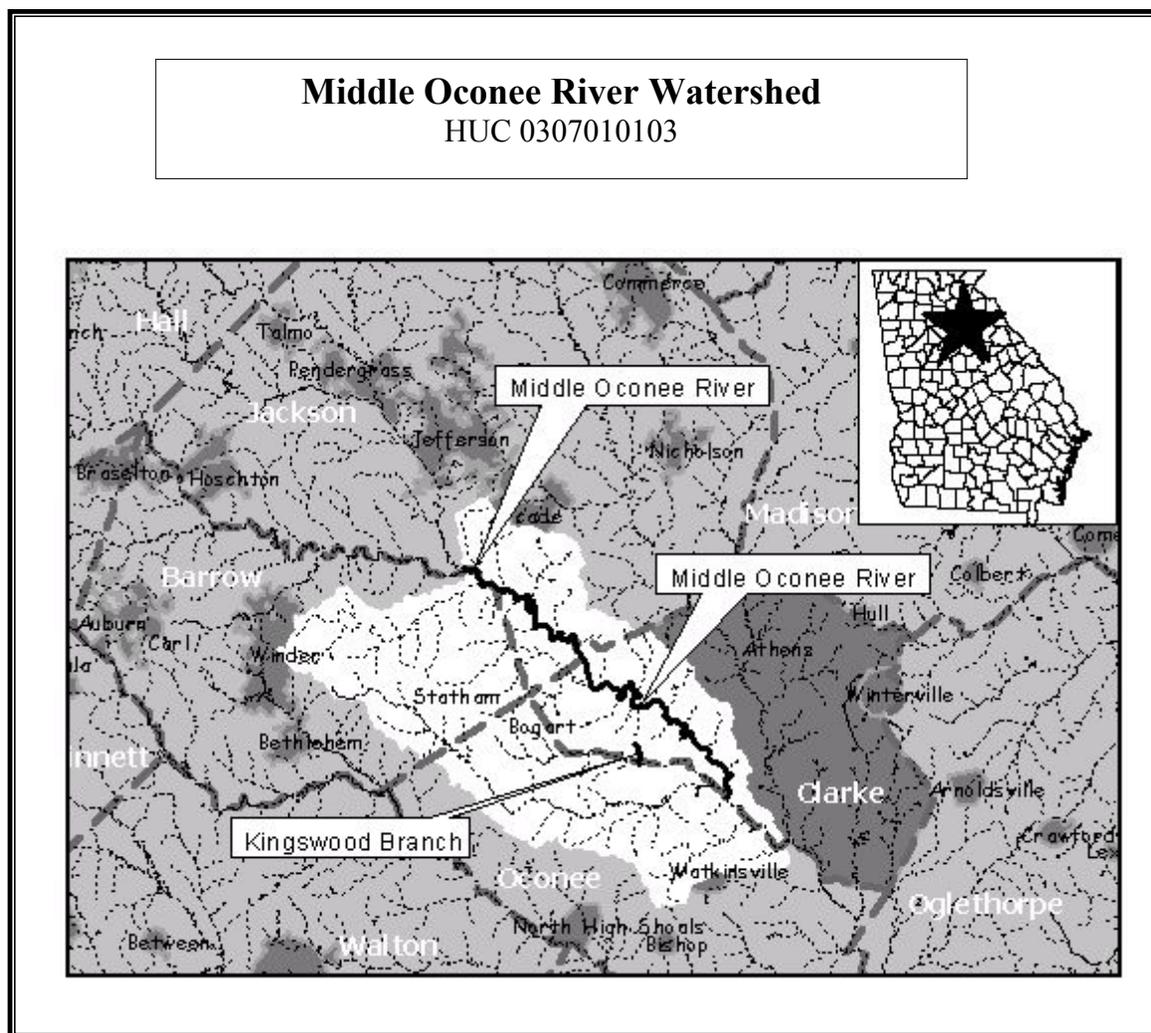
**STATE OF GEORGIA  
REVISED TMDL  
IMPLEMENTATION PLAN  
WATERSHED APPROACH  
Oconee River Basin**

Local Watershed Governments

- Northeast Georgia RDC
- Athens-Clarke County
- Jackson County
- Barrow County
- Oconee 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**

<b>Impaired Waterbody*</b>	<b>Impaired Stream Location</b>	<b>Impairment</b>
1. Kingswood Branch	Tributary to McNutt Creek, Athens	pH
2. Middle Oconee River	Mulberry River to Big Bear Creek	Fecal Coliform
3. Middle Oconee River	Big Bear Creek to McNutt Creek	Fecal Coliform

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

# Action Plan for Middle Oconee River Watershed

Middle Oconee River Watershed  
HUC 0307010103

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 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 checked="" type="checkbox"/> Other (Please List)		
<input type="checkbox"/> Other (Please List)	<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.

Responsible Organization Or 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.	2	Public, educators, farm and civic groups.	2003 and ongoing
Keep Barrow County Beautiful	Water quality education program for public, civic groups, schools.	2	Public, educators, farm and civic groups.	Ongoing
Keep Athens-Clarke County Beautiful	Water quality education program for public, civic groups, schools.	1,3	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.	1,2,3	Homeowners with septic systems.	Ongoing
Upper Oconee Watershed Network	Sponsor river- and stream-based activities, educate membership on water quality issues.	1,2,3	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	Private land owners	Continuous
GA Waterwise Council	The Water Sourcebook	1	Grades K-12	Ongoing
NEGRDC	Distributing ACCG/DCA Water Resources Toolkit CD-ROM	1	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 Conserv 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	
Robert Bridges / City of Statham	P.O. Box 28	Statham	GA	30666	(770)725-5455	
David Clark / Athens-Clarke Co. Unified Government	P.O. Box 1868	Athens	GA	30603	(706)613-3440	
Stan Coley / Barrow County Water & Sewerage Auth.	954 Robertson Bridge Road	Statham	GA	30666	(770)725-8100	
Al Crace / Jackson County Board of Commissioners	67 Athens Street	Jefferson	GA	30549	(706)367-6314	
Jenny Culler / Georgia Legal Watch	264 North Jackson Street	Athens	GA	30601	(706)546-9008	
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	
Walter Elder, III / Barrow County Board of Comm.	233 E. Broad Street	Winder	GA	30680	(770)307-3005	
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	
Barbara Kesler / City of Arcade	P.O. Box 417	Jefferson	GA	30549	(706)367-5500	
Keith Lee / Barrow County Central Communications	233 E. Broad St	Winder	GA	30680	(770)307-3506	
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 Av	Monroe	GA	30655	(770)267-8363	
Dana Poole / Georgia River Network	1090 South Milledge Avenue	Athens	GA	30605	(706)549-4508	
Tim Powell / City of Statham	P.O. Box 28	Statham	GA	30666	(770)725-5455	
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		

Middle Oconee River Watershed  
HUC 0307010103

<b>Name/Organization</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>	<b>E-Mail</b>
Dan Schultz / Jackson County Planning & Development	67 Athens Street	Jefferson	GA	30549	(706)367-8985	
Mark Shirley / Jackson Co. 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 Millege Ave	Athens	GA	30605	(706)549-4508	
Jerry Waddell / Jackson Co Water & Sewer Authority	P.O. Box 869	Jefferson	GA	30549	(706)367-1741	
Dan Wallace / Natural Resources Conservation Service	1291 Greensboro Hwy	Watkinsville	GA	30677	(706)769-3990	
Melinda Weir / Georgia Legal Watch	264 North Jackson Street	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>Kingswood Branch</b>	Tributary to McNutt Creek, Athens	5	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
pH	6.5 to 8.5 Standard Units	Not listed in TMDL		February 2002

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>Middle Oconee River</b>	Mulberry River to Big Bear Creek	11	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Jackson	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)	43%		February 2002

Waterbody Name #3	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>Middle Oconee River</b>	Big Bear Creek to McNutt Creek	12	Fishing	Partially 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)	22%		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	Residences	Failure of inadequately maintained septic tanks/systems cause runoff from pooled sewage; infiltration of untreated material through soils or erosion channels.	2,3
Fecal coliform	Agriculture	Unrestricted access of cattle to streams	2,3
Fecal coliform	Urban areas	Pet kennels and unrestricted deposition by pets onto surfaces, especially impervious surfaces	2,3
Fecal coliform	Suburban and transitional areas	“Hobby farms” and horse farms with unrestricted animal access to streams	2,3
Fecal coliform	Urban areas	Leaking sewer lines	3
Fecal coliform	Urban, suburban areas	Illicit discharges	2,3

**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.

<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>
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

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Impacted Waterbodies*</b>	<b>Anticipated or Past Effectiveness</b>
Fecal coliform	Agriculture	2	Very effective

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
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
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	

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	

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	3	Very effective

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

<b>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	Jackson County	Enhanced erosion & sedimentation control implementation; new & improved ordinances based on watershed assessment.	Present/Ongoing 2004	Planned and Considered	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	2	Very effective

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

<b>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	Barrow County, City of Winder	Enhanced erosion & sedimentation control implementation; stream buffer and stormwater ordinances.	Present/Ongoing	Planned and Considered	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	2	Very effective

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

<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>
Coliform source identification	Athens-Clarke County, Jackson County, Barrow County	Uses E. coli testing to determine likely specific sources of coliforms.	2003	Ongoing	Voluntary

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

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
Likely sources identified for all affected streams and tributaries	2003	2008	

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Sewer line replacement, extension	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, illicit discharges	3	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Replace old lines in Hunnicutt Creek area	2003	2004	

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stormwater Ordinance	Jackson County, City of Jefferson	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	2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
New development will be regulated	End of 2003	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) \_\_\_\_\_  
Significant reductions in fecal coliform loading should result in de listing of the Middle Oconee below Bear Creek by 2008 and reduction of the Middle Oconee above Bear Creek from “not supporting” to “partially supporting” its designated use.  
\_\_\_\_\_

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

### COMMENTS

---

---

---

---

Middle Oconee River Watershed  
HUC 0307010103

Prepared By: Joseph Tichy  
Agency: Northeast Georgia RDC  
Address: 305 Research Drive  
City: Athens ST: GA ZIP: 30605  
E-mail: jtichy@negrdc.org  
Date Submitted to EPD: April 30, 2003

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.**