

**STATE OF GEORGIA RECOMMENDED
TIER 2 TMDL IMPLEMENTATION PLAN** **REVISION** __

Orr Creek
Chattahoochee River Basin

Local Watershed Governments

I. INTRODUCTION

Total Maximum Daily Load (TMDL) Implementation Plans are platforms for evaluating and tracking water quality protection and restoration. These plans have been designed to accommodate continual updates and revisions as new conditions and information warrant. In addition, field verification of watershed characteristics and listing data has been built into the preparation of the plans. The overall goal of the plans is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan addresses the general characteristics of the watershed, the sources of pollution, stakeholders and public involvement, and education/outreach activities. In addition, the plan describes regulatory and voluntary practices/control actions (*management measures*) to reduce pollutants, milestone schedules to show the development of the management measures (*measurable milestones*), and a monitoring plan to determine the efficiency of the management measures.

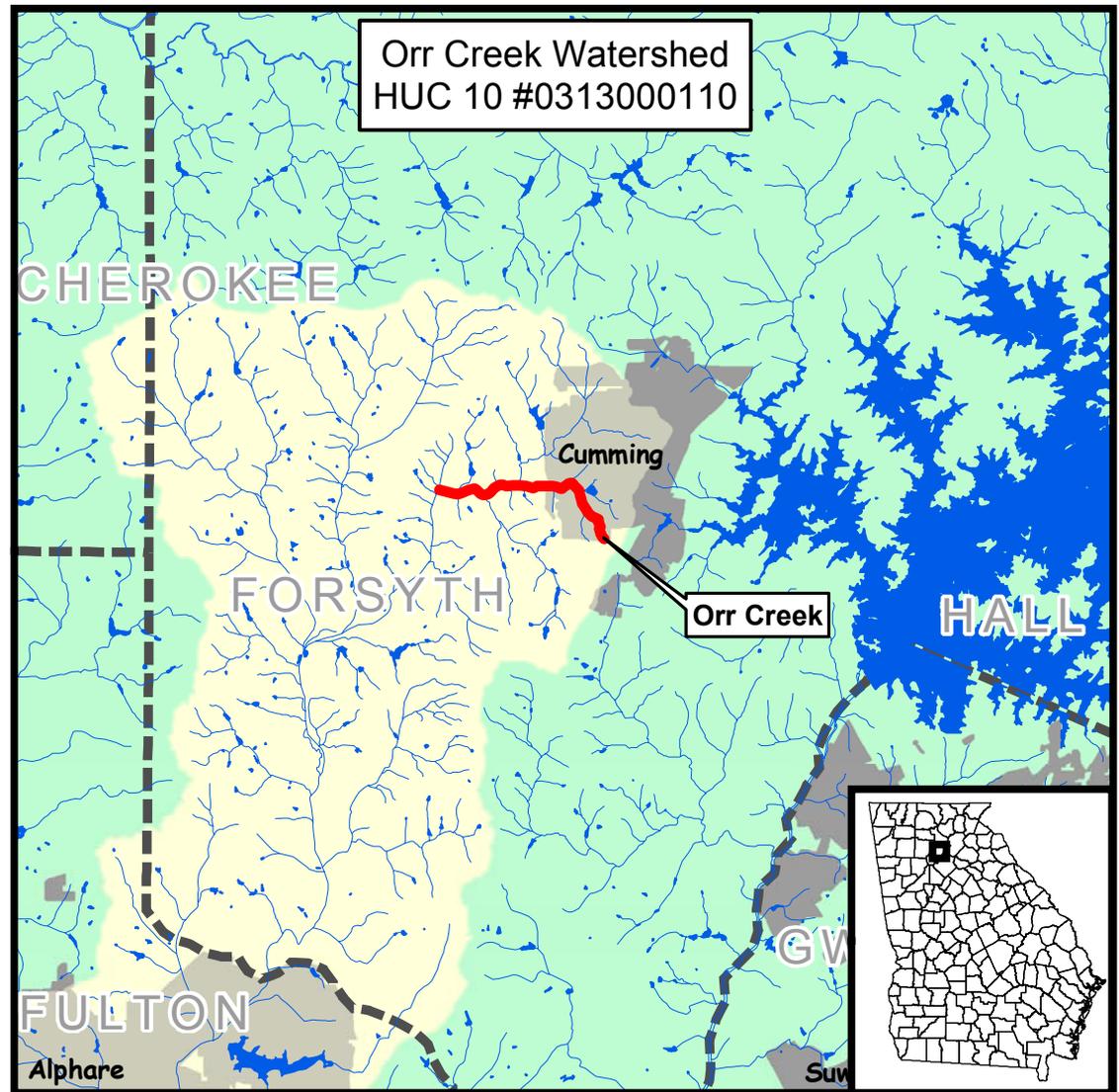


Table 1. IMPAIRMENTS

IMPAIRED STREAM SEGMENT	IMPAIRED SEGMENT LOCATION	IMPAIRMENT
Orr Creek	U/S Castleberry Rd (Tyson Foods) to Big Creek	Fecal Coliform Bacteria
Kelly Mill Branch*	Headwaters to Orr Creek	Fecal Coliform Bacteria
Big Creek*	Headwaters to Cheatham Creek	Fecal Coliform Bacteria & Copper
Orr Creek*	U/S Castleberry Rd (Tyson Foods) to Big Creek	Copper

* Plan will be written by GA EPD

II. GENERAL INFORMATION ABOUT THE WATERSHED

Write a narrative describing the watershed, HUC 10#0313000110. Include an updated overview of watershed characteristics. Identify new conditions and verify or correct information in the TMDL document using the most current data. Include the size and location of the watershed, political jurisdictions, and physical features which could influence water quality. Describe the source and date of the latest land cover/use for the watershed. Describe and quantify major land uses and activities which could influence water quality. See the instructions for more information on what to include.

Orr Creek originates in the City of Cumming and flows in a westerly direction to its confluence with Big Creek, a water supply watershed. Major land use reported in the TMDL for (22836/34%) forest (1943 ac/29%), mixed urban (1090 ac 16%), row crops (1153 ac/17%), and transitional (191 ac/3%). The NRCS estimated livestock population of Forsyth County in 2000 was 1500 horses and 23,793,000 broiler chickens. There were 39,885 total septic systems in the county in 2000 according to Georgia DHRS.

While updated in 2003, the land use composition by watershed was not compiled by watershed. Updated land use plan for the Cumming area, which includes the Orr Creek watershed, indicate that agricultural land declined from about 17 to 8%, residential land increased from 34 to 38%, and mixed urban from 16 to 20%. In short, urban development has displaced agriculture forested uses. The Tyson Food wastewater treatment plant discharges to Orr Creek within the City of Cumming.

ORR CREEK

COMPLETE THE FOLLOWING TABLES FOR AND NARRATIVES ABOUT EACH IMPAIRED STREAM IN THE WATERSHED.

STREAM SEGMENT NAME	LOCATION	MILES/AREA	DESIGNATED USE	PS/NS
Orr Creek	Castleberry Road to Big Creek	3	Fishing	PS/NS

III. SOURCES AND CAUSES OF STREAM SEGMENT IMPAIRMENT LISTED IN TMDLs

After reviewing the TMDLs written for this stream, complete the following tables with **the information found in the TMDLs**. List each parameter for which the stream segment is impaired and the water quality standard violated. See the instructions for the water quality standards. Describe the sources and causes of each violation identified in the TMDLs.

Table 2. SOURCES OF IMPAIRMENT AS INDICATED IN TMDLs

PARAMETER 1	WQ STANDARD	SOURCES OF IMPAIRMENT	NEEDED REDUCTION FROM TMDL
Fécal Coliform	200 per 100 ml (geometric † May-Oct.) and 1000 per 100 ml (geometric mean Nov-April)	urban developmen	
		Point Source	
		failed septic tanks	
		Agriculture	
		Wildlife	

IV. IDENTIFICATION AND RANKING OF POTENTIAL SOURCES OR CAUSES OF IMPAIRMENT

INVESTIGATE AND EVALUATE the sources of impairment for each parameter listed in Table 2. Write a narrative describing efforts made or procedures used to verify the significance and extent of the sources or causes of each impairment listed in the TMDLs. Include:

- Involvement of stakeholder group
- Field surveys
- Review of land cover data
- Evaluation of sources

Following a period of rapid development, by

2003 approximately 60% of the basin was developed with slightly more than 30% in forested land and agriculture. Urban development including sources such as stormwater runoff, malfunctioning sewer systems, and domestic and wild animal wastes, is the most significant likely cause of elevated fecal coliform densities. The Tyson WWTP is subject to an HPDES permit which limits the geometric mean daily fecal coliform densities in the affluent to 400 CFU/100 ml. The number of individual septic tank systems in Forsyth County increased from 16,000 in 1990 to almost 40,000 in 2000. During that period, the Georgia DHRS reported that 953 systems failed. Improper handling of wastes and litter from the large population of chickens could also contribute to elevated bacteria levels.

To the extent possible, identify sources and quantify the extent of pollution in the stream segment for each of the parameters listed in Table 2 and evaluate the likely impact on the parameter load to the stream. This should follow research performed and described in preceding narrative and should correct or add information to the TMDLs. **The SOURCES SHOULD BE RANKED** from those having the most impact to those having the least impact. The estimated extent of contribution can be expressed as the area of the watershed effected, the stream miles effected, or the number of activities contributing to the problem. The magnitude of contribution should be estimated to be large, moderate, small, or negligible.

Table 3. CONCLUSIONS MADE OF POTENTIAL SOURCES OF STREAM SEGMENT IMPAIRMENT

PARAMETER 1	POTENTIAL SOURCES	ESTIMATED EXTENT OF CONTRIBUTION	ESTIMATED MAGNITUDE OF CONTRIBUTION	COMMENTS
Fecal Coliform	Urban development	Extensive	Major	
	Point Source	Cumming	Minor	
	Foiled Septic Tanks	Scattered	Minor	
	Agriculture	Moderate	Minor	
	Wildlife	Moderate	Minor	

V. STAKEHOLDERS

PUBLIC INVOLVEMENT AND THE ACTIVE PARTICIPATION OF STAKEHOLDERS is essential to the process of preparing TMDL implementation plans and improving water quality. Stakeholders can provide valuable information and data regarding their community, impaired water bodies, potential causes of impairments, and management practices and activities which may be employed to reduce the impacts of the causes of impairment.

Describe outreach activities to advise and engage stakeholders in the TMDL implementation plan preparation process. Describe the stakeholder group employed or formed to address the impaired segments in the watershed. Summarize the results of the number of attendees and meetings and describe major findings, recommendations, and approvals.

The recommended stakeholder group will be convened to review and comment on this recommended TMDL implementation plan as provided Section VIII, Planned Outreach.

List the watershed or advisory committee members of the stakeholder group for this segment in the following table.

Table 4. COMMITTEE MEMBERS

NAME/ORG	ADDRESS	CITY	STATE	ZIP	PHONE	E-MAIL
Bald Ridge Marina	1850 Bald Ridge Marina Rd	Cumming	GA	30041		
Chestattee- Chattoahoochee RC&D	177 Scroggins Drive	Demorest	GA	30535		
Jonathon Heard	100 Main Street	Cumming	GA	30040		
Chris Semerjian	P.O. Box 1358	Gainesville	GA	30503		
Georgia Farm Bureau	1620 Bass Road	Macon	GA	31210		
Mike Giles	P.O. Box 763	Gainesville	GA	30503		
Ray Williams	6950 Holiday Road	Lake Lanier Islands	GA	30518		
Lee Smith	1707 B Enterprise Dr	Buford	GA	30518		
Mary Sue Ridlings	101 E. Maple Street	Cumming	GA	30040		
Cattleman's Association	2331 Browns Bridge Rd.	Gainesville	GA	30504		
Chattowah Landtrust	4015 Morningside Dr.	Cumming	GA	30040		
Hon. John Conway	110 East MAIN street	Cumming	GA	30040		
Mary Mayhew	P.O. Box 1358	Gainesville	GA	30503		
Dennis Martin	3005 Atlanta Hwy.	Gainesville	GA	30507		
Habersham Marina	2200 Habersham Marina Rd	Cumming	GA	30130		
Jackie Joseph	615 F. Oak Street, Suite 100	Gainesville	GA	30501		
Frank Turk	P.O. Box 2393	Gainesville	GA	30503		
Drew Marczak	P.O. Box 1069	Watkinsville	GA	30677		
Trust for Public Land	1447 Peachtree Street, NE	Atlanta	GA	30309		
Darcie Boden	615 F. Oak Street Suite 1000	Gainesville	GA	30501		

In Appendix A, list the names, addresses, telephone numbers, and e-mail addresses for local governments, agricultural or commercial forestry organizations, significant landholders, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

VI. MANAGEMENT MEASURES AND ACTIVITIES

Describe any management measures or activities that have been put into place or will be put into place including regulatory or voluntary actions or other controls by governments or individuals that specifically apply to the pollutant that will help achieve water quality standards. Include who will be responsible for the measure, how it will be funded, the status, the date it will be or was initiated, and a short description of how effective the measure is or will be.

Table 5. MANAGEMENT MEASURES AND ACTIVITIES

GENERAL MEASURES APPLICABLE TO ALL PARAMETERS

MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/ IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Watershed Management Plan	Forsyth County	The watershed management plan outlines Forsyth County's approach to improving and protecting its streams. The ultimate goal is to provide the county with a technically sound defensible basis for making informed watershed protection decisions. The plan provides any over arching frame work for advancing a comprehensive management strategy.	State, Local	Currently being implemented	March 2000	Very Effective
Stream Setbacks	Forsyth County	Revise development ordinance to include enhanced buffer requirements up to 100' on all streams.	Local	Proposed	Pending	Very Effective
Source Water Assessment Plan	Forsyth County and City of Cumming	SWAP is designed to meet state and federal requirements for conducting assessments including contaminant inventory	Local and EPD	Active	July 2002	Very Effective
Part V Environmental Criteria	Forsyth County and Cumming	County and City adopted a Wetlands Protection Ordinance	Local	Enforced	2003	Very Effective
Part V Environmental Criteria	Forsyth County	County adopted river corridor protection ordinance providing for setbacks on protected rivers.	Local	Enforced	2003	Very Effective
Part V Environmental Criteria	Forsyth County and Cumming	County and City adopted an ordinance providing for the protection of certain groundwater recharge areas.	Local	Enforced	2003	Moderately Effective

MEASURES APPLICABLE TO INDIVIDUAL PARAMETERS

PARAMETER 1	MEASURE	RESPONSIBILITY	DESCRIPTION	SOURCE OF FUNDING	STATUS	ENACTED/IMPLEMENTED	EFFECTIVENESS (Very, Moderate, Weak)
Fecal							
NPDES Wastewater point source pollution	Georgia DNR EPD	Georgia DNR EPD	I Water Protection Branch Oversees the permitting and compliance of all NPDES sites	State, Local	Active-Enforced	2004	Very Effective
Fecal	Sewer-Infrastructure	Forsyth County	Reduce the number of septic systems by providing sewer service in densely developed residential areas.	State,Local, and Federal	Proposed	2004	Very Effective
Fecal	NPDES orals permits for CAFOs ("Dry Litter Rule")	DNR, GA EPD, US EPA	The Georgia Department of Natural Resources Board plans to review poultry wet manure handling systems beginning in January 2000, to assess the need to regulate the industry in regard to maure management practices. It is probable that EPA and DNR will extend their attention to dry layer manure systems.	State	Enforced	2000	Very Effective
Fecal	County Sewage Disposal Rules and regulations	Forsyth Co. Health Department. State of Georgia DNR	Septic tank permit has to be obtained from the county health department. A copy of sub-septic tank permit shall be furnished to the county building inspection department prior to the issuance of a building permit.	Local	Enforced		Very Effective

VII. MONITORING PLAN

The purposes of monitoring are to obtain more data, to determine the sources of pollution, to describe baseline conditions, and to evaluate the effects of management and activities on water quality. Describe any sampling activities or other surveys - active, planned or proposed - and their intended purpose. Reference the development and submission of a Sample Quality and Assurance Plan (SQAP) if monitoring for delisting purposes.

Table 6. MONITORING PLAN

PARAMETER(S) TO BE MONITORED	ORGANIZATION	STATUS (CURRENT, PROPOSED, PLANNED)	TIME FRAME		PURPOSE (If for delisting, date of SQAP submission)
			START	END	
Multiple	Georgia EPD	Proposed	01/06	12/06	Basinwide Monitoring for Chattoahoochee Basin Group
Fecal Coliform	Forsyth County	Propose Monitoring of Orr Creek in monitoring proposed in the Forsyth County Watershed. Assessment and Management Plan.	2005		Compile four geometric means to evaluate change in response to management activities.

VIII. PLANNED OUTREACH FOR IMPLEMENTATION

List and describe outreach activities which will be conducted to support this plan and the implementation of it.

Table 7. PLANNED OUTREACH

RESPONSIBILITY	DESCRIPTION	AUDIENCE	DATE
Georgia Mountains RDC	Review recommended TMDL implementation plan with stakeholder group and revise plan as appropriate.	Stakeholder Advisory Group	01/05/05/05
Georgia Mountains RDC	Complete Plan outreach activities specified in section 106 grant funded contract	Local governments major stakeholder public	01/05-05/05

IX. MILESTONES/ MEASURES OF PROGRESS OF BMPs AND OUTREACH

This table will be used to **track and report progress of management measures including BMPs and outreach**. Record milestone dates for:

- accomplishment of management practices or activities
- outreach activities
- installation of BMPs

to attain water quality standards. Comment on the effectiveness of the management measure, how much support the measure was given by the community, what was learned, how the measure might be improved in the future, and any other observations made. This table can be "pulled out" of this template and used to report and track progress.

Table 8. MILESTONES

MANAGEMENT MEASURE	RESPONSIBLE ORGANIZATIONS	STATUS		COMMENT
		PROPOSED	INSTALLED	
Outreach Activities	GA Mountains RDC	X		Funded by section 106 grant
Watershed Management Plan	Forsyth County		X	
Stream Setbacks	Forsyth County	X		

Source Water Assessment Plan	Forsyth Co. and City of Cumming		X	Helps identify source of impairments and asses needs, very effective with good community support
Part V Criteria-Wetlands	Forsyth Co. and City of Cumming		X	
Part V Criteria-River Corridor	Forsyth County		X	
Part V Criteria-Groundwater Recharge	Forsyth Co. and City of Cumming		X	
Infrastructure-Sewer	Forsyth County	X		
NPDES/LAS Permits CAFOS	Georgia DNR, EPD and US EPA		X	
Local Sewage Disposal Rules	Forsyth Co. Health Department		X	
Forsyth Co. Storm water Management Ordinance				
NPDES M54 Storm water Permit	Forsyth Co.		X	
Adopt Georgia Storm water management Manual (GSMM)	Forsyth County		X	
Stormwater Management Audit/Assessment	Forsyth County		X	
Stormwater Ordinance	Forsyth Co. Planning and Zoning		X	
Forsyth County Development Guidelines	Forsyth County		X	

Prepared By:	_____
Agency:	_____
Address:	_____
City:	_____ ST: <u>GA</u> ZIP: _____
E-mail:	_____
Date Submitted to EPD:	_____ Revision: _____

APPENDIX B.
UPDATES TO THIS PLAN

Describe any updates made to this plan. Include the date, section or table updated, and a summary of what was changed and why.
