Revised TMDL Implementation Plan
HUC 0307010102 - Mulberry River and Cedar Creek
April, 2003

HUC 0307010102 is located primarily in Jackson and Barrow counties.

The stream segments of concern in this TMDL implementation plan include the Mulberry River from the Little Mulberry River to the Middle Oconee River and Cedar Creek from its headwaters to the City of Winder reservoir. The primary jurisdictions that drain to the segments of concern include Jackson and Barrow counties and the City of Winder. Other, smaller cities that contribute to the drainage include Auburn, Carl, Braselton, and Hoschton. Portions of Hall County and Gwinnett County also drain to the Mulberry River, but streams exiting these counties meet water quality standards.

The pollutants of concern for this implementation plan are fecal coliform for both stream segments, and sediment for the Mulberry River. The streams are listed as "partially supporting" its designated use for fishing (Mulberry) and "not supporting" its designated use for fishing (Cedar Creek).

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 on the Mulberry River of 44% and on Cedar Creek of 88%.

A TMDL for sediment was prepared by EPA in February 2002 for the Mulberry River. The entire Mulberry River, from its headwaters to the Middle Oconee River, was studied. The listing was based on biota sampling. The TMDL concluded that most of the sediment-induced impairment to habitat was due to legacy sediments from prior agricultural activities. Only the Middle Mulberry River (the segment that is the subject of this report) required a reduction (12%) in sediment load. However, the TMDL recommended continuing sediment-load-restricting practices in the basin should continue.

Land use in the watershed is primarily forest and pasture, but the area is undergoing increasing subdivision development and industrial development

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 approximately most existing farms will be phased out within the ten-year time horizon of this plan.

- If the basin follows the general pattern of development on the periphery of the Atlanta metropolitan area and the Athens metropolitan area, 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.

- Poultry farms usually have stack houses, NMP's, utilize advice on land application rates of chicken manure, and setbacks and buffers on streams. About 80% of farms comply with these BMP's, and education is continuing. Regulation of chicken litter distribution is expected soon.

- It is not known how many illicit connections to storm drains, failed septic tanks, or cases of outright lack of treatment there may be in the basin. The city of Winder has an extensive, and older, sewer system. The Jackson County Water and Sewerage Authority is just beginning to extend sewer lines in the unincorporated county and has not served the Mulberry River drainage.

- 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.

The Town of Braselton has implemented a stormwater ordinance and stream buffer ordinance, as well as other regulations (see table below). An update to the town's development regulations is in progress, which will include requirements for storm water BMP's on new development.

Barrow County and the City of Auburn have submitted Notices of Intent to the Georgia EPD as a requirement for meeting Phase II Stormwater NPDES Permits. The plan to institute stormwater management plans in the next five years.

Keep Barrow County Beautiful has a program of citizen and school education on environmental issues, including water quality.

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.

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

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

River Corridor Protection					**E**		

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

Hall County:

- Impervious surface limits in North Oconee watershed only
- As property converts from Ag to residential, 50' buffers and 1.2 units/acre required
- Dry weather bacteria sampling currently being performed

Winder:

- Bacteria source identification project underway for Cedar Creek

Braselton:

- Doing bacteria source identification on tributaries to the Mulberry River
- Currently updating BMP's and development requirements

Barrow County:

- Working on bacteria source identification for parts on Cedar Creek not within Winder city limits

STATE OF GEORGIA

REVISED TMDL IMPLEMENTATION PLAN

WATERSHED APPROACH

Oconee River Basin

Local Watershed Governments

Northeast Georgia RDC
Barrow County
Jackson County
City of Auburn
City of Braselton
City of Carl
City of Hoschton
City of Winder

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.

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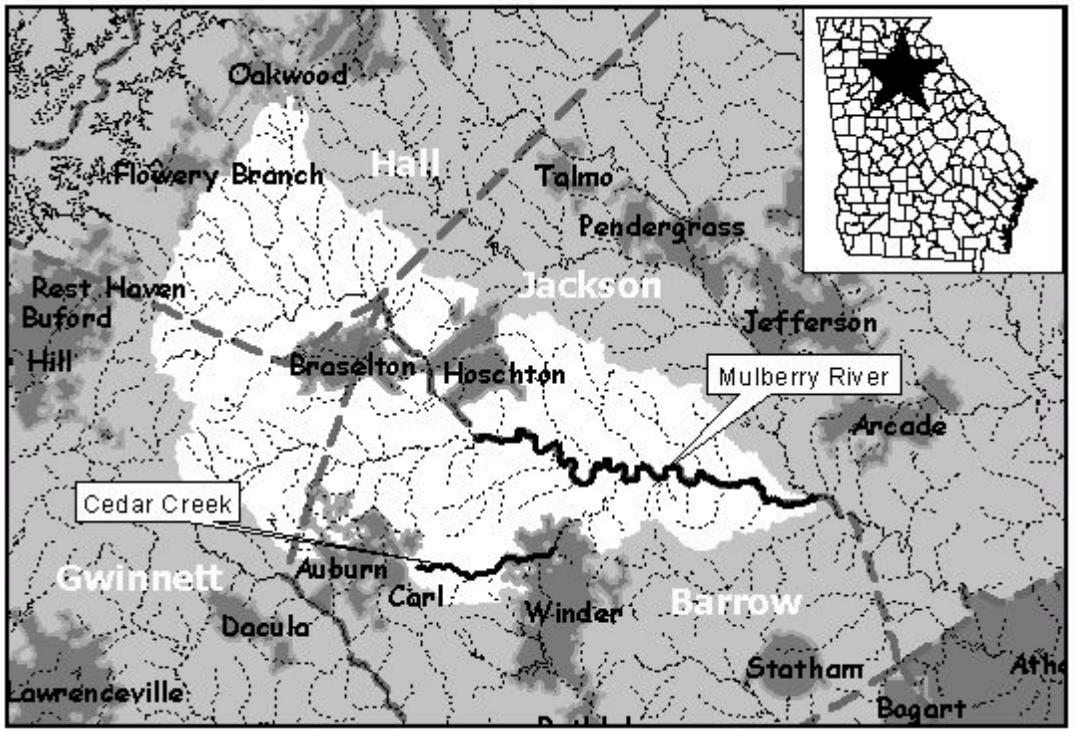

FIGURE 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Cedar Creek	Headwaters to Winder Reservoir	Fecal Coliform
2. Mulberry River	Little Mulberry River to Middle Oconee River	Fecal Coliform, Biota (sediment)

*These Waterbody Numbers are referenced throughout the Implementation Plan.

Action Plan for Mulberry River Watershed

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POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
__ Dissolved Oxygen (DO)	__ Industrial	X Habitat		
X Fecal Coliform (FC)	X Urban	X Recreation		
X Sediment	X Agriculture	__ Drinking Water		
__ Metals	__ Forestry	__ Aesthetics		
__ Fish Consumption Guidelines (FCG)	X Residential	__ Other (Please List)		
__ Other (Please List)	__ 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 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.	1,2	Public, educators, farm and civic groups.	Ongoing
Jackson County W&S Authority, Barrow County W&S Auth, City of Braselton, City of Winder.	Distribute brochures about septic tank maintenance to water customers.	2	Homeowners with septic systems.	Ongoing
Upper Oconee Watershed Network	Sponsor river- and stream-based activities, educate membership on water quality issues.	2	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	1,2	Private land owners	Continuous
GA Waterwise Council	The Water Sourcebook	1,2	Grades K-12	Ongoing
NEGRDC	Distributing ACCG/DCA Water Resources Toolkit CD-ROM	1,2	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 Com	P.O. Box 8024	Athens	GA	30603	(706)542-9233	
Earl Brantley / Natural Resources Conservation Service	Fed Bldg, 355 E. Hancock Av	Athens	GA	30601	(706)546-2039	
Stan Coley / Barrow County Water & Sewerage Auth.	954 Robertson Bridge Rd	Statham	GA	30666	(770)725-8100	
Neil Counts / City of Winder	90 N. Broad St, PO Box 566	Winder	GA	30680	(770)867-3106	
Al Crace / Jackson County Board of Commissioners	67 Athens Street	Jefferson	GA	30549	(706)367-6314	
Walter Elder, III / Barrow Co Board of Commissioners	233 E. Broad Street	Winder	GA	30680	(770)307-3005	
Terry Hanzak / Georgia Soil & Water Conserv Comm	P.O. Box 8024	Athens	GA	30603	(706)542-9233	
Matthew Harper / Atlanta Regional Commission	40 Courtland Street, NE	Atlanta	GA	30303	(404)463-3267	
Keith Lee / Barrow County Central Communications	233 E. Broad St.	Winder	GA	30680	(770)307-3506	
Drew Marczak / Plum Creek Timber Company	P.O. Box 1069	Watkinsville	GA	30677	(706)769-4737	
Julie Owens / Georgia Environmental Protection Div	Ste 101, 4220 International Pky.	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	
Billy Ray White, Jr. / Jackson Co. Planning & Develop.	67 Athens Street	Jefferson	GA	30549	(706)367-8985	
Melanie Ruhlman / Upper Oconee Watershed Network	P.O. Box 531	Athens	GA	30603		
Dan Schultz / Jackson County Planning & Develop.	67 Athens Street	Jefferson	GA	30549	(706)367-8985	
Jennifer Scott / Town of Braselton	P.O. Box 306	Braselton	GA	30517	(706)654-3915	
Mark Shirley / Jackson County Cooperative Ext Ser	67 Athens Street	Jefferson	GA	30549	(706)367-6345	
Jerry Waddell / Jackson Co Water & Sewer Authority	P.O. Box 869	Jefferson	GA	30549	(706)367-1741	

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Name/Organization	Address	City	State	Zip	Phone	E-Mail
Dan Wallace / Natural Resources Conservation Service	1291 Greensboro Hwy	Watkinsville	GA	30677	(706)769-3990	
Britton West / Barrow Co. Cooperative Ext Ser	PO Box L, 90 Lanthier Street	Winder	GA	30680	(770)307-3029	

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 Winder Reservoir	4	Fishing	Not Supporting
Primary County	**Secondary County**	**Second RDC**		**Source (Point/ Nonpoint)**
Barrow				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)	88%		February 2002

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Mulberry River	Little Mulberry River to Middle Oconee River	18	Fishing	Partially Supporting
Primary County	**Secondary County**	**Second RDC**		**Source (Point/ Nonpoint)**
Barrow	Jackson			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)	44%		February 2002
Biota (Sediment)	0.7 tons/acre/year	12%		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.	1, 2
Fecal coliform	Agriculture	Unrestricted access of cattle to streams	1, 2
Fecal coliform	Urban areas	Pet kennels and unrestricted deposition by pets onto surfaces, especially impervious surfaces	1, 2
Fecal coliform	Suburban and transitional areas	"Hobby farms" and horse farms with unrestricted animal access to streams	1, 2
Fecal coliform	Urban areas	Leaking sewer lines	2
Fecal coliform	Urban, suburban areas	Illicit discharges	1, 2
Sediment	Agriculture	Cattle in streams causing stream bank deterioration and accelerated erosion	2
Sediment	Urban areas	Runoff from impervious surfaces in urban and suburban areas	2
Sediment	Suburban and transitional areas	Insufficient sediment and erosion control on construction sites	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
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	1,2	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	Barrow County, City of Winder	Enhanced erosion & sedimentation control implementation; stream buffer and stormwater ordinances.	Present/Ongoing	Planned & Considered	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform, sediment	Urban runoff	1,2	Very effective

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stormwater Ordinance	Jackson County, Town of Braselton, City of Winder, Barrow County (planned)	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, sediment	Urban runoff	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
New development will be regulated	End of 2003	Ongoing	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Illicit Discharge Ordinance	Town of Braselton, City of Winder	Prohibits discharge of sewage into waters of the state or storm water conveyances.	Current	Ongoing	Regulatory

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

Measurable Milestones	Schedule		Comments
	Start	End	
All streams examined for illicit discharges, all discovered discharges eliminated	Current	Ongoing	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Coliform source identification	Barrow County, Jackson County, City of Winder, Town of Braselton	Uses E. coli testing to determine likely specific sources of coliforms.	2003	Ongoing	Voluntary

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

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Enhanced Development Ordinance	Jackson County, Town of Braselton	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, sediment	Urban runoff	2	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	

Measurable Milestones	Schedule		Comments
	Start	End	
EPD acts on complaints from affected parties	Ongoing	Ongoing	
Detailed sampling of streams and tributaries	2003	2004	Detailed geographic coverage of tributaries and reaches of concern to identify specific sources

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
Environmental Quality Incentive Program	NRCS	Must Apply	N/A	1,2
Conservation Reserve Program	NRCS (Farm Service Agency)	Must Apply	N/A	1,2
Watershed Surveys and Planning	NRCS	Must Apply	N/A	1,2
Conservation Technical Assistance	NRCS	Must Apply	N/A	1,2
Conservation Buffer Initiative	NRCS	Must Apply	N/A	1,2
Section 604(b) and Section 106 of the Clean Water Act	EPD via RDC	Must Apply	N/A	1,2

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	Fecal coliform, sediment (biota)	Monitoring data for Georgia 305(b)/303(d) List	1999	1999	Previous
TMDL Monitoring	EPD	1,2	Fecal coliform, sediment (biota)	Monitoring data for Georgia 305(b)/303(d) List	2004	2004	Proposed
Source identification	Barrow County, City of Winder, Jackson County, UOWN, NEGRDC	1,2	Fecal coliform	Systematic surveys to identify sources of contamination	2002	2012	Current, Proposed

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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 Mulberry River by 2008 and reduction of Cedar Creek from "not supporting" to "partially supporting" its designated use.

Enhanced enforcement of erosion and sedimentation control ordinances and stream buffer ordinances should reduce sediment loadings by the required 12% in ten years, and the Mulberry River should be de-listed for sediment or have a TMDL with a recommendation of no further action.

- 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

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