STATE OF GEORGIA

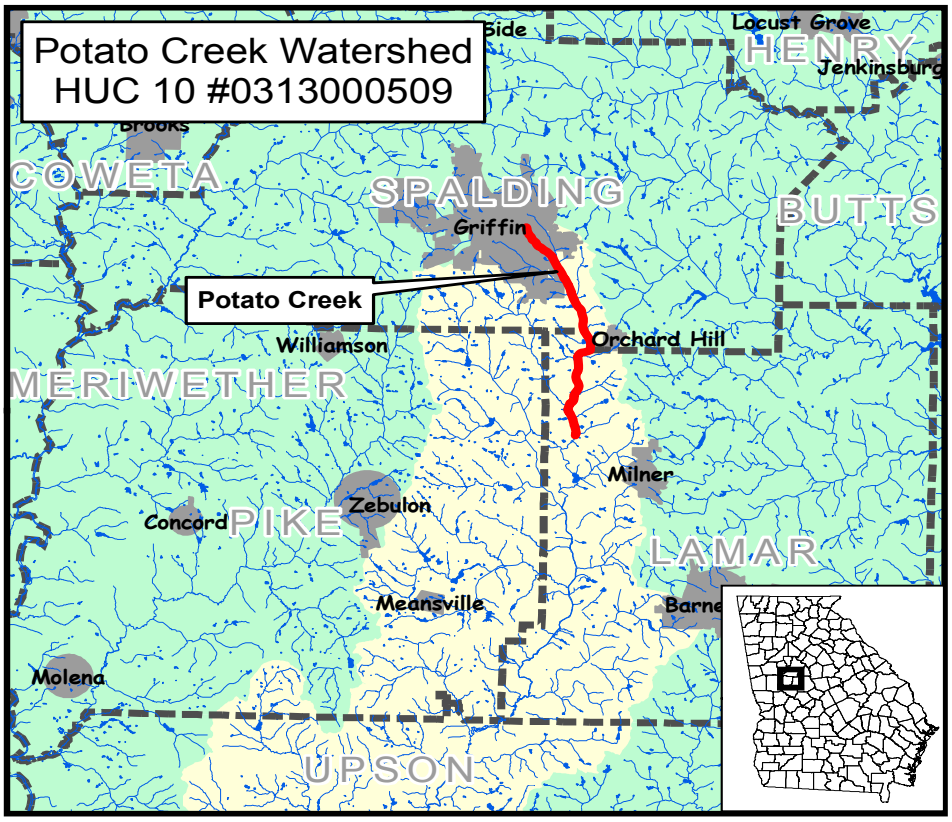
TMDL IMPLEMENTATION PLAN

POTATO CREEK

(Sediment - Biota)

Prepared by
The Georgia Department of Natural Resources
Environmental Protection Division
Atlanta, GA

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. 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. This plan was originally prepared as an implementation inventory by the McIntosh Trail RDC with a Section 604(b) Grant. TMDL load allocation information has been updated to reflect the approved TMDL.



Impaired Waterbody*	Impaired Stream Location	River Basin	Miles/Area Impacted	Partially Supporting/ Not Supporting
Potato Creek	Headwaters to U.S. Hwy. 333	Flint	11	Partially Supporting

STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN FOR: ***Potato Creek*** (STREAM) ***Biota*** (PARAMETER) RIVER BASIN: ***Flint River***

PLAN DATE: ***9-30-01***

Prepared by: ***Planning Department***	Or Prepared By:
McIntosh Trail Regional Development Center	
Address: ***PO Box 818*** ***120 North Hill Street***	Address:
City: ***Griffin*** State: ***GA***	City: State:
ip: ***mtrdc.org*** e-mail: ***c/o ahazell@griffinpower.org***	Zip: e-mail:
Date Submitted to EPD: ***9-30-01***	Date Submitted to EPD:

General Information	Significant Stakeholders
Obtain this information from the TMDL document or other information. When completed, this document will be a self-contained report independent of the TMDL document.	Identify local governments, agricultural organizations or significant land holders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups with a major interest in this water body.

TMDL ID (to be entered by EPD)	**FLT0000011**	Name/Organization					
Water body name	***Potato Creek***	Address					
HUC basin name	***Flint River***	City		State		Zip	
HUC number	***0313000509***	Phone				e-mail	
Primary county	***Spalding County***	Name/Organization					
Secondary county	***Lamar County***	Address					
Primary RDC	***McIntosh Trail RDC***	City		State		Zip	
Secondary RDC	***NA***	Phone				e-mail	
Water body location	***Griffin, Spalding and***	Name/Organization					
	Lamar Counties	Address					
Miles or area impacted	***11+ Mile Segment***	City		State		Zip	
Parameter addressed in plan	***Biota impacted***	Phone				e-mail	
Water use classification	***Fishing***	Name/Organization					
Degree of impairment	Partially supporting use ■	Address					
	Not supporting use ☐	City		State		Zip	
Date TMDL approved by EPA	January 2003	Phone				e-mail	
Impairment due to	Point sources ☐	Name/Organization					
	Nonpoint sources ■	Address					
	Both ☐	City		State		Zip	
Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C		Phone				e-mail	

If more, add to comments on last page.

SUMMARY OF ALLOCATION MODEL RESULTS FROM TMDL DOCUMENT (existing load, target TMDL, and needed reduction)

EXISTING LOAD	TARGET TMDL	NEEDED REDUCTION
11,400 (tons/yr)	9,351 (tons/yr)	17%

I. IDENTIFY **NONPOINT SOURCE** CATEGORIES AND SUBCATEGORIES OR INDIVIDUAL SOURCES WHICH MUST BE CONTROLLED TO IMPLEMENT LOAD ALLOCATIONS:

List major nonpoint sources contributing to impairment including those identified in TMDL document.

SOURCE	DESCRIPTION OF POSSIBLE CONTRIBUTION TO IMPAIRMENT	RECOMMENDED LOAD REDUCTION (FROM TMDL)
Urban Runoff – Pervious Surface	*Septic drainfields, animal waste*	***NA****
Urban Runoff – Impervious Surface	*Stormwater management; Discarded litter and food waste*	***NA****
Forest – Pervious Surface	*Natural wildlife*	***NA****
Agriculture – Pervious Surface	*Livestock management/ animal waste*	***NA****
Barren – Pervious Surface	*Natural wildlife*	***NA****
Municipal Treatment Facility	*Possible leaks, events, or violations from discharge facility*	***NA****

*Updated land use studies from EPD removed the recommended load reduction and further review of pollution data has suggested new/ additional testing should be done to further define nonpoint source pollution load characteristics for each listed source category.

II. DESCRIBE ANY REGULATORY OR VOLUNTARY ACTIONS INCLUDING MANAGEMENT MEASURES OR OTHER CONTROLS BY GOVERNMENTS OR INDIVIDUALS THAT SPECIFICALLY APPLY TO THE POLLUTANT AND THE WATERBODY FOR WHICH THE TMDL WAS WRITTEN, THAT WILL BE ACCOMPLISHED THROUGH RELIABLE AND EFFECTIVE DELIVERY MECHANISMS, AND THAT WILL HELP ACHIEVE THE LOAD ALLOCATIONS IN THE TMDL:

Existing or required regulatory actions *(Note: TBD = To Be Determined)*

RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY	**NAME OF REGULATION/ORDINANCE**	**DESCRIPTION**	**ENACTED OR PROJECTED DATE**	**STATUS**
Pike County	*Local Codes/ Zoning Ordinances*	*Land use regulations governing septic tanks & waste management*	*1998*	*In Place*
	Local Codes/ Zoning Ordinances	*Environmental regulations and stream buffer requirements (DNR Part V)*	*2001*	*Being Drafted*
	Development Regulations	*Minimum erosion and sedimentation control measures*	*1998*	*In Place*
	Land Use Planning	*Adopted Land Use/ Future Land Use plan*	*1994*	*In Place*
Lamar County	*Local Codes/ Zoning Ordinances*	*Land use regulations governing septic tanks & waste management*	*1998*	*In Place*
	Local Codes/ Zoning Ordinances	*Environmental regulations and stream buffer requirements (DNR Part V)*	*2002*	*Draft text*
	Development Regulations	*Minimum erosion and sedimentation control measures*	*1998*	*In Place*
	Land Use Planning	*Adopted Land Use/ Future Land Use plan*	*1996*	*Updating*
Spalding County	*Local Codes/ Zoning Ordinances*	*Land use regulations governing septic tanks & waste management*	*1996*	*In Place*
	Local Codes/ Zoning Ordinances	*Environmental regulations and stream buffer requirements (DNR Part V)*	*2001*	*In Place*
	Development Regulations	*Minimum erosion and sedimentation control measures*	*1996*	*In Place*
	Land Use Planning	*Adopted Land Use/ Future Land Use plan*	*2000*	*Updated*
City of Orchard HIll	*Local Codes/ Zoning Ordinances*	*Land use regulations governing septic tanks & waste management*	*Admin. by Spalding Co*	*In Place*
	Local Codes/ Zoning Ordinances	*Environmental regulations and stream buffer requirements (DNR Part V)*	*Admin. by Spalding Co*	*Scheduled for adoption*

City of Orchard Hill (cont'd)	*Development Regulations*	*Minimum erosion and sedimentation control measures*	*Admin. by Spalding Co.*	*In Place*
	Land Use Planning	*Adopted Land Use/ Future Land Use plan*	*1998*	*In Place*
City of Griffin	*Local Codes/ Zoning Ordinances*	*Land use regulations governing septic tanks & waste management*	*1996*	*In Place*
	Local Codes/ Zoning Ordinances	*Environmental regulations and stream buffer requirements (DNR Part V)*	*2002*	*Draft text*
	Local Codes/ Zoning Ordinances	*Stormwater ordinances and design manual.*	*1999*	*In Place*
	Development Regulations	*Minimum erosion and sedimentation control measures*	*1996*	*In Place*
	Land Use Planning	*Adopted Land Use/ Future Land Use plan*	*1996*	*Updated*
	NPDES Phase II	*Storm-water permit requirements*		
City of Griffin, Water Authority & Stormwater Utility	*Illicit Discharge Ordinances & regulations*	*Discharge permit standards; Water quality monitoring & testing; Reporting standards*	*2000?*	*In Place*
	Stormwater Ordinance	*Policy and regulations regarding stormwater management within development practice.*	*2000?*	*In Place*
EPD	*Flint River Basin Plan*	*State plan for monitoring and managing Flint River basin protective measures*	*1997*	*In Place*
	Discharge Regulations	*Discharge permitting and management*	*1995*	*In Place*

Forest Industries	*Minimum Standards*	*Erosion and sedimentation management; land disturbance permits. To be catalogued after inventory of practicing industries in McIntosh Trail region.*	*On-going*	*TBD*
Agricultural Operations	*Minimum Standards*	*Livestock/ animal management policies; Storage and waste disposal. To be catalogued after inventory of operations in McIntosh Trail region.*	*On-going*	*TBD*

Existing voluntary actions

RESPONSIBLE ORGANIZATION OR ENTITY	NAME OF ACTION	DESCRIPTION	ENACTED OR PROJECTED DATE	STATUS
Agricultural Operations	*Best Management Practices*	*Livestock & animal waste control efforts. To be reviewed after inventory of operations in McIntosh Trail region.*	*Not Applicable*	*TBD*
Forest Industries	*Best Management Practices*	*Erosion & sediment control. To be reviewed after inventory of practicing industries in McIntosh Trail region.*	Not Applicable	*TBD*
Public/ Residents	*Septic tanks mgmt.*	*Monitoring & maintenance of drainfields*	*Not Applicable*	*TBD*

Additional recommended regulatory or other measures that could be implemented to reduce the loads of the TMDL parameter

ENTITY/ORGANIZATION RESPONSIBLE	NAME OF PROPOSED REGULATION/ORDINANCE/ OTHER	DESCRIPTION	ENACTED OR PROJECTED DATE	STATUS
New Entity (as needed)	*Adopt-a-Stream*	*Regular/ updated stream monitoring and reporting*	*2004*	*Proposed Concept*
Local Governments (as needed)	*Septic-tank performance monitoring and regulation*	*Establish regular performance/ maintenance requirements for septic tanks to prevent tank failures and pollution*	*TBD*	*Proposed Concept*

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
FOR POTATO CREEK, UPSON COUNTY, GEORGIA

Background

Potato Creek stretches 30+ miles from Griffin, Georgia to the Flint River in Upson County. Primarily classified for fishing, the creek does supply the City of Thomaston with public water. Near this intake, for its final 11 miles, Potato Creek is currently listed as an impaired water body. Tests for fecal coliform in Potato Creek scored above the Georgia State Water Quality Standard (WQS), placing the stream segment onto the list of impaired waters and initiating the Total Maximum Daily Load (TMDL) process for achieving water quality compliance.

A Total Maximum Daily Load is a calculation of the maximum amount of a pollutant, from both point and non-point sources, that a waterbody can receive and still meet water quality standards. The Clean Water Act, Section 303, establishes the water quality standards and the TMDL programs. TMDLs are simply the implementation of rules included in Section 303(d) of the Clean Water Act of 1972. The resulting inventory of impaired streams and water bodies – called the 303(d) list – provides a basis for decisions related to restoring water quality. Although some TMDLs are aimed at managing all sources of pollution which affect beneficial uses of water, the focus of the implementation plan discussed here relates primarily to nonpoint water sources including contamination from diffuse sources such as agricultural and urban runoff.

Methods of measuring pathogens directly are costly and time-consuming. In most cases, indicator organisms are used instead of analyzing the pathogens themselves. These indicator organisms are bacteria that also occur in human and animal waste, but generally are not pathogens themselves. In contrast to pathogens, the coliforms are easy to collect and count, and often provide at least an indication of whether or not fecal matter has entered the water body. The downside of using indicator organisms like coliforms is that coliform tests are nonspecific and do not distinguish between human and other animal coliform. However, this is our best source of indication at present. Loads are expressed in terms of cells per 100 ml of water.

The objective of this plan is to reduce or eliminate the amount of fecal coliform contained in the runoff into Potato Creek. While the impaired segment being addressed is entirely within Upson County, the entire watershed is being reviewed for two reasons; 1) The 1995 coliform counts featured a “spike” in the number patterns typically indicative of a one time event, such as a rain storm after a long drought period, and 2) the testing site used in 1995 is close enough to the head of the stream segment that much of the pollution may have been generated upstream. See the attached Potato Creek Study Area maps outlining the drainage basin and watershed features.

Existing Data

Water Testing

The only source of data currently established is the original TMDL document (February, 1998). The levels indicated in the TMDL document are based on a model run for the critical summer time period of May through October 1995, using the “calibrated” fecal and flow parameters. This model run resulted in a summer fecal coliform 30 day geometric mean of 293 cfu/100 ml. This is 93 cfu/100 ml above the Georgia WQS of 200 cfu/100 ml and 118 cfu/100 ml above the target level of 150 cfu/100 ml.

Currently, no records have been found indicating any specific events or spills that may indicate a reason behind the high colifom counts for Potato Creek. There also has not been any regular

testing of the stream segment to update the testing numbers, and no other agency has done their own regular testing along the stream. This has prompted the RDC and local governments to suggest the foremost action in addressing the TMDL would be the implementation of new testing.

Land Use

The total Potato Creek drainage basin is approximately 237 square miles of mixed land use development. Predominantly rural and residential in use, the watershed includes some light industrial activity, the bulk of Thomaston's urbanized areas, and a significant amount of agricultural operations.

Possible causes of increased levels of fecal coliform in Potato Creek include human waste from sewage or septic tank leaks, domestic animals, urban wildlife, livestock, or rural wildlife. More data is necessary to identify sources of nonpoint source pollution within the watershed, with additional monitoring and analysis necessary to determine the actual sources of the fecal coliform bacteria. Local expertise and involvement from environmental agencies, federal agencies, schools and universities, and other sources will play critical roles in identifying sources and reducing fecal coliform levels in Potato Creek.

Existing Regulatory or Voluntary Actions

The local governments located within the Potato Creek watershed are in the middle of implementing the State's new environmental protection criteria. This is a collection of zoning regulations that require minimum setbacks and conditions for development activity within watersheds and along stream-banks and riverbanks. Those not currently in place for this watershed will be so by the Spring of 2002.

Located at the stream's headwaters, the City of Griffin is undertaking its own endeavor to address the water quality of Potato Creek. Utilizing local and grant money, the City is implementing a significant water testing and pollution monitoring effort for the stream segments within the city limits. This project includes testing for biota and other impairments as well as for fecal coliform. Projected completion for this effort is Fall 2001. The City of Griffin also employs a Stormwater Utility designed to mitigate the impacts of development on problems associated with runoff. This utility, a fee schedule based on the volume and characteristics of impervious surface on each parcel, acts as both a deterrent to environmentally-weak development practices and as a source of revenue for public works projects aimed at resolving stormwater runoff problems.

Beyond these measures, there are no other activities planned or in place directly addressing the water quality for Potato Creek. Only Thomaston relies on the stream as a public water source.

Georgia is in the process of implementing a watershed approach to water resource management through River Basin Management Planning. River basin planning is the foundation for implementation of water protection strategies in Georgia. This approach provides the framework and schedule for actions to address the waters on the Georgia 303(d) list. The basin planning program is based on legislation in 1992 (O.C.G.A. 12-5-520) by the Georgia Assembly which calls for EPD to develop river basin management plans for each of the major river basins in Georgia. The Flint River Basin Management Plan was adopted in 1997.

Recommended Regulatory or Voluntary Actions

Implementation of measures to address the TMDL involves the cooperation of all landowners and land users in the watershed; therefore, broad awareness and involvement are very important to the success of the implementation plan. As such, the TMDL will require substantial efforts to recruit and involve watershed stakeholders to ensure the accuracy and effectiveness of data and implementation measures.

The McIntosh Trail RDC currently hosts a Regional Environmental Advisory Council (REAC) to facilitate local involvement in environmental issues such as watershed quality. A standing body for advising RDC staff and Board members, membership on the REAC includes representatives from each county in the region. In addition, the RDC will organize a Potato Creek Watershed Committee to involve a greater number of stakeholders residing in, or with direct interest in, the Potato Creek. This stakeholder group of land owners, business owners, government officials, elected officials, and environmental activists has been formed to help identify the problem and to help implement identified solutions. The Watershed Committee will serve for the duration of TMDL related efforts, and will be as large as needed to accommodate the diversity of interested parties within the drainage basin. Combined, the two bodies will assist the RDC and EPD staff in local issues and facts that will shape the direction of the implementation activities.

McIntosh Trail RDC staff will begin the formal TMDL efforts with a more detailed inventory of existing land use regulations and practices, to present a recent and more accurate portrait of the amount of land use planning in place to maintain water quality. Careful land use planning and the use of best management practices in areas such as erosion control, use of greenspace and stream buffers, can minimize the impacts of stormwater runoff. This inventory will include private sector activities, as well, by attempting to inventory the extent of businesses and operations to a) comply with environmental regulations, and b) employ best management practices. The focus of these efforts will be establishing the means for related governments to regularly monitor water quality practices more effectively.

Education programs will also be encouraged to establish public interest and involvement in the virtues of water quality efforts. In implementing model programs such as River Kids, children take water samples and learn how to keep water bodies clean as a part of their regular schoolwork. Introducing water quality issues to children at a young age, and following up with the program through middle school and high school can lead to sustained citizen involvement.

The Georgia Adopt-A-Stream program could be implemented as another means to assist in monitoring and maintaining water quality. Adopt-a-Stream programs maintain four underlying principles: to increase public awareness of the state's nonpoint source pollution and water quality issues, to provide citizens with the tools and training to evaluate and protect their local waterways, to encourage partnerships between citizens and their local government, and to collect quality baseline water quality data. The formation of a local organization would depend on current levels of local interest in water quality and other environmental issues.

Additional activities that may be implemented include measures to improve septic tank maintenance through permit requirements or “Septic-to-Sewer” efforts. As new testing and monitoring reveals problems in septic tanks and drainfields, local governments may have to review the need for more stringent measures to ensure proper functions of private septic tanks.

Schedule for Implementing Management Measures
In order to establish an effective TMDL implementation plan, an implementation schedule must be carefully adhered to. The Potato Creek Watershed Committee will be established to help the RDC staff with the identification of potential sources of fecal coliform in the watershed area and in the development of potential measures to reduce or eliminate the excessive levels of fecal coliform present in the creek.

Implementation activities scheduled for the first year will address the development of recent, comprehensive data, specifically the new monitoring and status reports of any improvement or worsening of the fecal coliform levels within the creek. Initial management controls and best management practices must be identified and established as soon as possible, regardless of new water testing results. Educational programs in the schools and throughout the community will be developed, as will general public outreach and awareness campaigns. Also, any illicit discharges must be detected and eliminated as soon as possible.

The urgency of further plan related efforts will be based upon the results of first year activities, particularly the current quality of the water and the level of regulations and practices actually employed. A base level of management programs and practices, monitoring and evaluation of data, and periodic status reports will continue throughout the five-year implementation plan. If the fecal coliform levels remain above the targeted level of 199cfu/100ml during the fourth year of the plan, the process to develop a more stringent Phase II plan will begin immediately. Attainment date for full compliance is ten years from the acceptance of this implementation plan by EPA.

Monitoring Plan
Water quality monitoring is a critical component in determining the success of the implementation plan. Monitoring helps determine compliance with regulations, major sources of loadings, and the effect of the regulatory and voluntary measures implemented in the drainage basin. No two watersheds are alike. Therefore, the monitoring of the particular watershed, rather than relying on computer model data, is critical to determine the fecal coliform levels actually present in the impaired water body.

New monitoring for Potato Creek will be designed in conjunction with the Georgia EPD and the newly established Watershed Committee. Based upon Committee advice and the review of updated land use information, recommended testing sites will be identified for their relation to potential pollution sources and a detailed testing and analysis schedule will be developed with EPD based upon the level of assistance and funding presented for this TMDL.

Funding
Several funding opportunities are available for the TMDL efforts. Grant funding from Section 319(h) of the Clean Water Act, Nonpoint Source Implementation Grants, may be used for the installation of best management practices (BMPs) for animal waste and landowner education programs. Capitalization Grants for Clean Water State Revolving Funds is a potential source of funding used to aid in urban runoff control, stormwater overflows, riparian buffers, and other water protection activities. Watershed Assistance Grants are also available through the EPA to aid in the development of partnerships to address water quality issues. Other matching grants may be available through the Environmental Protection Agency's Office of Water for both non-point source mitigation and water quality testing.

Monitoring Plan Effectiveness

Progress on the implementation plan will be determined through analysis of water quality sampling results, with goal being compliance with the Georgia WQS. This will be measured through periodic monitoring of fecal coliform levels throughout the five-year period. The number of regulatory controls or best management practices implemented in the Potato Creek drainage basin will also serve as a measure of progress by identifying the extent to which current minimum standards and practices are sufficient for sustaining water quality

Conclusion

The establishment of an effective TMDL implementation plan is essential to the environmental and economic health of everyone within the Potato Creek watershed. To ensure future community development for the area, the related communities must produce a TMDL implementation plan and make a good faith effort to meet the requirements set forth in the plan. As stated in the Clean Water Act, if the implementation plan is not efficiently executed, the region, and particularly Upson County, could face difficulties in such development as expansion of wastewater treatment facilities and certain industries that could contribute to increased levels of fecal coliform. Coupled with the regular monitoring of Potato Creek, the implementation of regulatory and voluntary management measures should reduce the levels of fecal coliform bacteria present in the water body.