

TMDL IMPLEMENTATION PLAN

SNAKE CREEK

Submitted by Chattahoochee-Flint RDC

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July 18, 2005

**STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
SNAKE CREEK, CITY OF WHITESBURG & CARROLL COUNTY, GEORGIA**

Background

Snake Creek is located partially within the City of Whitesburg and in Carroll County, Georgia. It has a beneficial water use classification of fishing and is currently listed as an impaired water body. The target TMDL for Snake Creek is set at 175 cfu/100ml. Achieving this level will allow the water body to be removed from the 303(d) list.

The TMDL is the total amount of pollutant that can be assimilated by the receiving water body while achieving water quality standards. Section 303(d) of the Federal Clean Water Act and EPA's Water Quality Planning and Management Regulations (40 CFR Part 130) require states to develop total daily maximum load (TMDL) management plans for the water bodies that do not meet designated uses under technology-based controls for pollution. The TMDL process establishes the allowable loadings of pollutants or other quantifiable parameters for a water body based on the relationship between pollution sources and in-stream water quality conditions, so that states can establish water-quality based controls to reduce pollution from both point and nonpoint sources and restore and maintain the quality of their water resources (USEPA, 1991). For bacteria such as fecal coliform, loads are expressed in terms of cells per 100ml of water.

A general implementation plan outlining mitigating activities to be established in the Snake Creek Watershed is included in this document. The purpose of this plan is to reduce or eliminate the pollutants contained in the runoff into Snake Creek. The implementation plan will be carried out with full participation of all interested parties. The implementation plan is to be considered a living document. In the process of carrying out the plans additional water quality data will be generated and the results will be integrated into the plans. Load capacity will be adjusted, for example, if new data indicates that the targets used are not appropriate or if new standards are adopted.

Existing TMDL and Monitoring Data

The source of data used for the development of this plan was the TMDL document. The levels indicated in the TMDL document are based on a model run for 1987 and 1988 critical time periods using 'calibrated' fecal and flow parameters. The representative critical summer time period used was May through October 1987 and the representative critical winter time period was November 1987 through April 1988. This model resulted in a summer fecal coliform 30-day geometric mean of 200cfu/100ml. This is 25 cfu/100ml above the target level of 175 cfu/100ml.

More data is needed to identify sources of nonpoint pollution within the watershed. Local expertise and involvement from environmental agencies, federal agencies, schools and universities, and other sources will play a critical role in identifying and reducing the levels of fecal coliform in Snake Creek.

Land Use

Snake Creek Watershed encompasses 46.6 square miles (29,829 acres) in the southeastern portion of Carroll County, Georgia. Agricultural use accounts for 12% of land use, urban impervious for .5%, and urban pervious for 5%. The remaining 87% is distributed between forestry (86%), and barren land (.8%).

Potential nonpoint sources of fecal coliform are numerous and often occur in combination.

The greatest rural nonpoint sources of fecal coliform are generally associated with animal operations, in which large quantities of fecal matter are generated. Fecal coliform reach water bodies through direct runoff from animal lots or from the application of animal waste on fields.

Nonpoint sources from urban land use are associated with surface storm flow, failing septic tanks, and leakage of sanitary sewer lines. Fecal coliform concentrations in urban storm water may be higher than concentrations in treatment plant effluent.

Nonpoint sources associated with barren land use include pollutants due to illicit trash and hazardous waste dumping.

In addition to the above land use categories and their associated sources of nonpoint pollution, impairment of the Snake Creek is due to higher than acceptable levels of fecal coliform in the base flow. This can be attributed to unidentified non-point sources such as leaking septic tanks, leaking sanitary sewer pipes, illicit connections animal feed lots, etc..

Existing Regulatory or Voluntary Action

Snake Creek is protected under Carroll County's Snake Creek Watershed Protection District. This district was established for the protection of the County's present and future water supply. It restricts land use, regulates impervious surfaces, and requires a buffer along all properties.

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 of 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 that calls for EPD to develop river basin management plans for each of the major river basins in Georgia. The Chattahoochee River Basin Management Plan was adopted in 1997.

The Natural Resource Conservation Service (NRCS), Georgia Soil and Water Conservation Commission (GSWCC), and Georgia Forestry Commission (GFC) are actively disseminating information on Best Management Practices (BMPs) within the Snake Creek Watershed. NRCS's focus is on BMPs targeted at erosion and sedimentation control and agricultural practices, GSWCC does consulting on all BMP applications for all land use types and GFC focuses on BMPs for forestry. In addition, Rolling Hills Resource Conservation and Development District (RC&D) runs the Poultry Litter/ Dead Bird Management Program, which offers cost sharing with poultry producers to mitigate fecal coliform contamination from runoff.

Recommended Regulatory or Voluntary Actions

Implementation of measures to address the TMDL involves the cooperation of all landowners and land users in the watershed. Broad awareness and involvement are essential to the success of the implementation plan. Through careful land use planning and the use of best management practices, the impacts of storm water runoff can be minimized. Storm water runoff can be improved through methods like erosion control and the establishment of green spaces, parklands and stream buffers.

Carroll County and the City of Whitesburg are in the process of amending their Soil Erosion and Storm Water Ordinances to implement state National Pollution Discharge Elimination System (NPDES) requirements and their Soil Erosion Ordinance to include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II). The Implementation Plan also recommends that Carroll County amend the Snake Creek Ordinance to prohibit grazing in the buffer zone, expand the Nutrient Management Program run through the County

Cooperative Extension Services to include fecal coliform reduction and establish an Adopt-A-Stream program for Snake Creek.

Implementation Plan Schedule

The Implementation Plan for Snake Creek Watershed contains a work plan outlining the tasks to be accomplished during Phase I of the program (years 1 through 5).

A stakeholder group for Snake Creek Watershed has been identified. During the first year, this group will meet and determine how it will function to best achieve its goals. The stakeholders group must work together to identify additional remedial measures and sources of funding needed for their implementation. Management programs must be established and/or expanded as well as implemented during this first year. Educational programs focused at schools, interest groups and landowners will be developed and implemented during the first year. Monitoring and status reports of fecal coliform levels will be implemented during the first year. Work will also begin on detecting and eliminating any illicit discharges.

After the first year, work will continue throughout Phase I in the following areas: implementing and educational and outreach programs, detecting and eliminating illicit discharges, evaluation of additional management controls, monitoring and evaluating progress, and providing period progress reports. If the fecal coliform levels remain above the targeted level during the fourth year of the plan, the process to develop a more stringent Phase II plan should begin during the fifth year. The projected attainment date is ten years from the acceptance of this implementation plan by the EPD.

Monitoring Plan

Monitoring is a critical component in determining the success of the implementation plan. Monitoring helps assess compliance with regulations, major sources of loading and the affect of regulatory and voluntary measures implemented in the drainage basin. No two watersheds are alike. Therefore, in determining actual fecal coliform levels, it is essential to rely on monitoring of particular watersheds rather on computer modeling.

The EPD will monitor levels of fecal coliform in Snake Creek in 2005. Additionally, the County Department of Environmental Health will monitor yearly for septic system assessment. The Carroll County Water Authority and the City of Whitesburg Water Department do water quality testing on an annual basis. The West Georgia Watershed Assessment will also monitor the stream on an annual basis for watershed assessment.

Criteria to Determine Progress

Progress in meeting the goals of the Implementation Plan will be determined through analysis of water quality sampling results. Periodic monitoring will show the trends of fecal coliform levels throughout the five-year period. The number of regulatory controls or best management practices implemented in the Snake Creek Watershed will also serve as a measure of progress. The implementation plan will be considered successful if the TMDL level for Snake Creek meets the target TMDL level and the stream is removed from the 303 (d) list.

Conclusion

The development and implementation of an effective TMDL plan is critical to the environmental health of Carroll County and the City of Whitesburg. Removal of Snake Creek from the 303 (d) list and compliance with the Federal Clean Water Act is in the best possible environmental and economic interest of the City and County. Without the success the of TMDL Implementation Plan the county could face difficulty in areas such as the expansion or development of wastewater

treatment facilities and the location of industries that may contribute to increased levels of fecal coliform.

Success will be achieved through the continued enforcement of existing regulatory measures as well as the implementation of new measures. In addition, new, existing, and expanded voluntary measures will play a key role in achieving the ultimate goal. If fecal coliform levels in Snake Creek have not reached acceptable levels at the completion of the first five-year period, a second phase of implementation will be developed.

STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN FOR: Snake Creek
(STREAM)

Fecal coliform
(PARAMETER)

RIVER BASIN: Chattahoochee
PLAN DATE: March 31,2001

Prepared by: Chattahoochee-Flint Regional Development Center Address: 13273 GA Hwy 34 E, P.O. Box 1600 City: Franklin State: GA Zip: 30217-1600 e-mail: Inicholas@cfrdc.org		Or Prepared By: Address: _____ City: _____ State: _____ Zip: _____ e-mail: _____					
Date Submitted to EPD: 03-29-01		Date Submitted to EPD: _____					
General Information 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.		Significant Stakeholders 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)		Name/Organization	City of Whitesburg				
Water body name	Snake Creek	Address	PO Box 151				
HUC basin name	Snake Creek	City	Whitesburg	State	GA	Zip	30185
HUC number	031300020311	Phone	770-832-1184			e-mail	
Primary county	Carroll	Name/Organization	Carroll County				
Secondary county		Address	PO Box 338				
Primary RDC	Chattahoochee-Flint	City	Carrollton	State	GA	Zip	30117
Secondary RDC		Phone	770-830-5800			e-mail	
Water body location	Carroll County	Name/Organization	Rolling Hills RC&D				
		Address	203 Legion Road				
Miles or area impacted	12	City	Dallas	State	GA	Zip	30132
Parameter addressed in plan	Fecal coliform bacteria	Phone	770-505-4288			e-mail	
Water use classification	Fishing	Name/Organization	Cattleman's Association (Carrollton branch)				
Degree of impairment	Partially supporting use <input checked="" type="checkbox"/>	Address	900 Newnan Road				
	Not supporting use <input type="checkbox"/>	City	Carrollton	State	GA	Zip	30117
Date TMDL approved by EPA		Phone	770-836-6646			e-mail	
Impairment due to	Point sources <input type="checkbox"/>	Name/Organization	West GA Poultry Growers' Association				
	Nonpoint sources <input checked="" type="checkbox"/>	Address	900 Newnan Road				
	Both <input type="checkbox"/>	City	Carrollton	State	GA	Zip	30117
Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C		Phone	770-836-6646			e-mail	

Stakeholders continued on last page

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

EXISTING LOAD	TARGET TMDL	NEEDED REDUCTION
200 cfu/100 ml	175 cfu/100 ml	25 cfu/100 ml

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 CONTRIBUTION TO IMPAIRMENT	RECOMMENDED LOAD REDUCTION (FROM TMDL)
Base Flow	Contributes significantly to the impairment. Higher than acceptable base flow levels are attributed to unidentified non-point sources such as septic tank leakage, leaking sanitary sewer pipes, illicit connections, animal feed lots, etc.	73%
Agriculture or pasture land uses	Significant contribution to the impairment. Important loads are associated with animal operations in which large quantities of fecal mater are generated or spread on fields. Loads may also be associated with the land application of municipal sludge.	99.0%
Urban impervious land uses	Important contribution to the impairment. Pollutants due to deposition, street cleaning, etc. accumulate between storms and are washed off during storm events.	82%
Urban pervious land uses	Important contribution to the impairment. Important sources of loading are surface storm flow, failing septic systems, and leakage of sanitary sewer systems	82%
Barren Land Uses	Important contribution to the impairment. Pollutants due to illicit trash and hazardous waste dumping.	82%

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:

A. Existing or required regulatory actions

RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY	NAME OF REGULATION/ORDINANCE	DESCRIPTION	ENACTED OR PROJECTED DATE	STATUS
Carroll County	Snake Creek Watershed Protection District	For the protection of Carroll County's present and future water supply. Restricts land use, impervious surface coverage and requires a buffer zone along all property.	2001	Enforced

B. Existing voluntary actions

RESPONSIBLE ORGANIZATION OR ENTITY	NAME OF ACTION	DESCRIPTION	ENACTED OR PROJECTED DATE	STATUS
Georgia Forestry Commission	BMP's for forestry	Disseminating information to interested individuals and organizations		Ongoing
Natural Resource Conservation Service	BMP's for agriculture	Disseminating information to interested individuals and organizations		Ongoing
Natural Resource Conservation Service	BMP's for Erosion and Sediment Control	Disseminating information to interested individuals and organizations		Ongoing
Rolling Hills Resource Conservation and Development	Poultry Litter/ Dead Bird Management Program	Cost sharing with poultry producers to mitigate fecal coliform contamination from runoff	06-01	Grant pending
Georgia Soil & Water Conservation Commission	BMP Consulting	Disseminating information to interested individuals and organizations		Ongoing

C. Additional recommended regulatory or other measures that should 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
Carroll County	Amendment to Snake Creek Watershed Protection District	Prohibit grazing in buffer zone. Require the maintenance of native vegetation in buffer zone		Under study
Carroll County	NPDES Permitting	Amend soil erosion and storm water ordinances to implement state NPDES requirements	08-00	Ongoing
City of Whitesburg	NPDES Permitting	Amend soil erosion and storm water ordinances to implement state NPDES requirements	08-00	Ongoing
Carroll County	Amend Soil Erosion Ordinance	Include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II)	06-02	Under review
City of Whitesburg	Amend Soil Erosion Ordinance	Include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II)	06-02	Under review
Carroll Co. Cooperative Extension Service	Nutrient Management Plans	Expand the program to include fecal coliform reduction	09-02	Under study
Carroll County	Adopt-a-Stream	Involving 4-H, Cattle Growers, etc on water quality monitoring	5-01	Training
City of Whitesburg	Adopt-a-Stream	Involving 4-H, Cattle Growers, etc on water quality monitoring	5-01	Training

III. SCHEDULE FOR IMPLEMENTING MANAGEMENT MEASURES OR OTHER CONTROL ACTIONS:

These must be implemented as expeditiously as practicable within five years of when the implementation plan is accepted by EPA.

IMPLEMENTATION ACTION*	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Form stakeholders group	X				
Organize implementation work with stakeholders and local officials to identify remedial measures and potential funding sources	X				
Identify sources of TMDL parameter	X				
Develop management programs to control runoff including identification and implementation of BMPs (Phase I):					
Agriculture					
Forestry					
Urban	X				
Mining					
Organize and implement education and outreach programs	X	X	X	X	X
Detect and eliminate illicit discharges	X	X	X	X	X
Evaluate additional management controls needed	X	X	X	X	X
Monitor and evaluate results	X	X	X	X	X
Reassess TMDL allocations		X	X	X	X
Provide periodic status reports on implementation of remedial activities	X	X	X	X	X
If needed, begin process for Phase II (next 5 years) and subsequent phases				X	X

* This schedule may be revised after meeting with the regional Water Issues Committee and stakeholders

IV. PROJECTED ATTAINMENT DATE AND BASIS FOR THAT PROJECTION:

The projected attainment date is 10 years from acceptance of the implementation plan by EPA.

V. MEASURABLE MILESTONES:

- Number of management controls and activities already implemented 6
- Number of management controls and activities proposed in five-year work program 8
- Number of management controls and activities actually implemented in five-year work period (to be completed after 5 years)
- Stream sampled to identify areas of concern See monitoring plan

VI. MONITORING PLAN:

Monitoring data that placed stream on 303(d) list will be provided if requested.

Previous or current sampling activities or other surveys to detect sources or to measure effectiveness of management measures or other controls

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
West GA Watershed Assessment	2000-2003	Fecal coliform	Watershed Assessment	On
Carroll County Water Authority	Annual	Fecal coliform	Water Quality	On
City of Whitesburg Water Department	Annual	Fecal coliform	Water Quality	On
Carroll County Dept of Environmental Health	As needed	Fecal coliform	Septic system assessments	On-going

Planned or proposed sampling activities or other surveys

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
EPD	2001	Multiple	Basin planning	On-going

VII. CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE:

- % concentration or load change (monitoring program)
- Categorical change in classification of the stream (delisting the stream is the goal)
- Regulatory controls or activities installed (ordinances, laws)
- Best management practices installed (agricultural, forestry, urban)

COMMENTS

Additional Stakeholders:

Carroll County Department of Environmental Health , 1004 Newnan Road, Carrollton, GA 30117, 770-836-6781