

TMDL IMPLEMENTATION PLAN

DIXIE CREEK

Submitted by Chattahoochee-Flint RDC

In furtherance of Georgia Environmental Protection Division contract #751-10102. The preparation of this document was financed in part through a grant from the U.S. Environmental Protection Agency under the Provisions of Section 604(b) of the Federal Water Pollution Control Act, as amended.

August 2, 2006

**STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
DIXIE CREEK, CITY OF LAGRANGE AND TROUP COUNTY, GEORGIA**

Background

Dixie Creek in the City of LaGrange, and Troup County, Georgia has a beneficial water use classification of fishing and is currently listed as an impaired water body. The target TMDL for Dixie 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 Dixie Creek Watershed is included in this document. The purpose of this plan is to reduce or eliminate the pollutants contained in the runoff into Dixie 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 191 cfu/100ml. This is 16 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 Dixie Creek.

Land Use

Dixie Creek Watershed encompasses 3.3 square miles (2136 acres) in the central portion of Troup County, Georgia, within the city limits of LaGrange. Urban use accounts for 39% of land use within the watershed, with the remaining 61 % being distributed between agriculture (13%), forestry (47%), and barren land (.7%).

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

Existing Regulatory or Voluntary Action

The City of LaGrange maintains and enforces both a Storm Water Ordinance and a Soil Erosion and Sedimentation Ordinance. The Storm Water Ordinance requires commercial development of over one-half acre to implement technologies to minimize runoff. The Soil Erosion and Sedimentation Ordinance, intended to protect water quality, regulates all development over one acre.

Troup County has three regulatory measures in place that affect water quality in Dixie Creek. The Watershed Protection Ordinance regulates land use in the water supply watershed that contains Dixie Creek. Dixie Creek lies within a groundwater recharge area and is protected under a Groundwater Recharge Protection District, which also regulates land use. Troup county's Subdivision Regulations require site plans and mitigation for all erosion caused by construction activities.

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.

Both the Natural Resource Conservation Service (NRCS) and the Georgia Soil and Water Conservation Commission (GSWCC) are actively disseminating information on Best Management Practices (BMPs) within the Dixie Creek Watershed. NRCS's focus is on BMPs targeted at erosion and sedimentation control while GSWCC does consulting on all BMP applications for all land use types.

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.

Both the City of LaGrange and Troup County are in the process of amending their Zoning Ordinances to comply with more stringent state requirements. This includes amendments to Storm Water Ordinances to implement state National Pollution Discharge Elimination System (NPDES) requirements and amendments to the Soil Erosion Ordinances to include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II). The Implementation Plan also recommends an amendment to the Storm Water Ordinance to include residential development and language on water quality.

Implementation Plan Schedule

The Implementation Plan for Dixie 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 Dixie 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 effect 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 Dixie Creek in 2005. Additionally, the Troup County Department of Environmental Health will monitor yearly for septic system assessment and the City of LaGrange will do water quality testing on an annual basis.

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 Dixie Creek Watershed will also serve as a measure of progress. The implementation plan will be considered successful if the TMDL level for Dixie 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 the City of LaGrange and Troup County. Removal of Dixie 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 of LaGrange and Troup County. Without the success of the TMDL Implementation Plan the City and 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 Dixie 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: Dixie 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		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)		Name/Organization	City of LaGrange				
Water body name	Dixie Creek	Address	PO Box 430				
HUC basin name	Dixie Creek	City	LaGrange	State	GA	Zip	
HUC number	031300020707	Phone	706-883-2000			e-mail	
Primary county	Troup	Name/Organization	Troup County				
Secondary county		Address					
Primary RDC	Chattahoochee-Flint	City		State		Zip	
Secondary RDC		Phone				e-mail	
Water body location	City of LaGrange and	Name/Organization	Two Rivers RC&D				
	Troup County	Address	900 Dallis St				
Miles or area impacted	3	City	LaGrange	State	GA	Zip	30240
Parameter addressed in plan	Fecal coliform bacteria	Phone	706-885-0101			e-mail	
Water use classification	Fishing	Name/Organization	West Point Lake Coalition				
Degree of impairment	Partially supporting use <input type="checkbox"/>	Address	PO Box 3677				
	Not supporting use <input checked="" type="checkbox"/>	City	LaGrange	State	GA	Zip	30241
Date TMDL approved by EPA		Phone	706-812-8822			e-mail	
Impairment due to	Point sources <input type="checkbox"/>	Name/Organization	Troup County Health Department				
	Nonpoint sources <input checked="" type="checkbox"/>	Address	107 Medical				
	Both <input type="checkbox"/>	City	LaGrange	State	GA	Zip	30240
Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C		Phone	706-845-4085			e-mail	

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

EXISTING LOAD	TARGET TMDL	NEEDED REDUCTION
191 cfu/100 ml	175 cfu/100 ml	16 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)
Urban impervious land uses	100% contribution to the impairment. Pollutants, due to deposition, street cleaning, etc. accumulate between storms and are washed off during storm events.	20%

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
Troup County	Watershed Protection District	Regulates land use and requires buffer zones		Enforced
Troup County	Groundwater Recharge Protection District	Regulates land use within district		Enforced
Troup County	Subdivision Regulations	Requires site plan and mitigation for erosion during construction		Enforced
City of LaGrange	Storm Water Ordinance	Requires commercial development with over ½ acre of impervious surface to minimize runoff	1998	Enforced
City of LaGrange	Soil Erosion and Sedimentation Ordinance	Regulates all development over 1.1 acres. Intended to protect water quality	1998	Enforced

B. Existing voluntary actions

RESPONSIBLE ORGANIZATION OR ENTITY	NAME OF ACTION	DESCRIPTION	ENACTED OR PROJECTED DATE	STATUS
Natural Resource Conservation Service	BMP's for Erosion and Sediment Control	Disseminating information to interested individuals and organizations		Ongoing
Georgia Soil & Water Conservation Commission	BMP Consulting	Disseminating information to interested individuals and organizations		Ongoing

C. Additional recommended regulatory or other measures, which 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
City of LaGrange	Amendments to the Storm Water Ordinance	Include residential development. Include language about water quality		
City of LaGrange	Amend Soil Erosion Ordinance	Include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II)	06-02	Under review
Troup County	Amend Soil Erosion Ordinance	Include recommendations of the Erosion and Sedimentation Control Technical Study Committee (DIRT II)	06-02	Under review
City of LaGrange	NDPES Permits	Amend soil erosion and storm water ordinances to implement state NPDES requirements	08-02	Under review
Troup County	NDPES Permits	Amend soil erosion and storm water ordinances to implement state NPDES requirements	08-02	Under review
City of LaGrange	Adopt-A-Stream	Involving 4-H, Cattle Growers, etc on water quality monitoring	5-01	Training
Troup County	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 7
- Number of management controls and activities proposed in five-year work program 6
- 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.

Describe 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
City of LaGrange Public Utility Department	Annual	Fecal coliform	Water Quality	On-Going
Troup County Health Department	As Needed	Fecal coliform	Septic System Assesment	On-Going

Describe any planned or proposed sampling activities or other surveys. (Scheduled EPD sampling can be found in the Basin Planning document.)

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
