

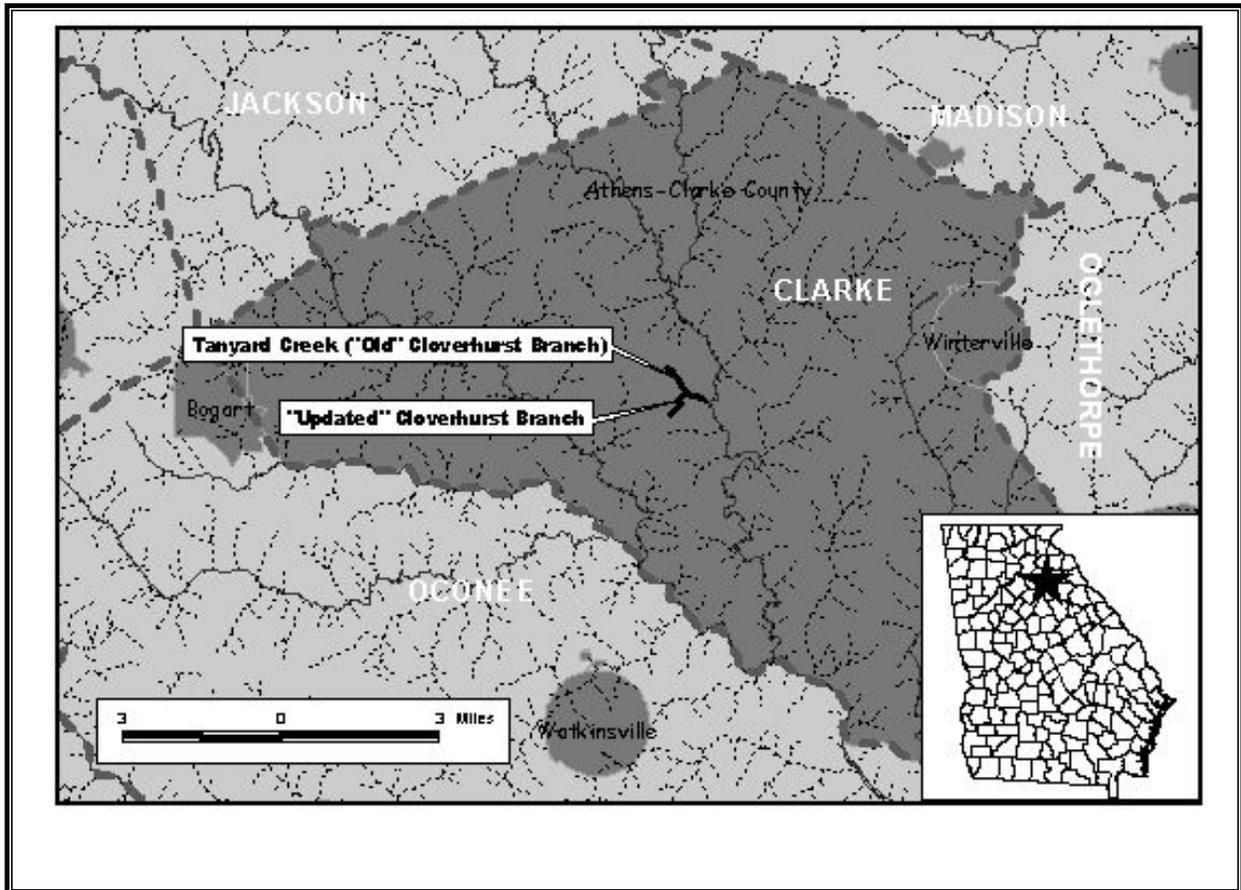
**STATE OF GEORGIA  
TMDL IMPLEMENTATION PLAN**

**ADDENDUM**

**Cloverhurst Branch Name and Location Modification  
To Reflect Update from 2000 to 2002 303d List**

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.



Impaired Waterbody*	Impaired Stream Location	River Basin
1. Tanyard Creek (Cloverhurst Branch)	U/S North Oconee River, Athens (Clarke Co.)	Oconee
2. Cloverhurst Branch	Athens (Clarke Co.)	Oconee

## **ADDENDUM DISCUSSION**

EPD is providing an addendum to the 2001 TMDL Implementation Plan for Cloverhurst Branch (TMDL ID #OCO0000005) located in the Oconee River Basin. This addendum is due to a name and location update from the 2000 to the 2002 303(d) list. The original Cloverhurst Branch name has been changed to Tanyard Creek based on data provided by Athens-Clarke County and US Geological Survey. Also, based on the same data, the name "Cloverhurst Branch" has been reassigned to an intermittent stream that is a tributary to Tanyard Creek (see map, page 1). Both stream segments are located in Athens, GA on or near the University of Georgia campus and both segments are less than a mile in length. As part of this addendum, EPD will apply the 2001 TMDL Implementation Plan to both Tanyard Creek ("old" Cloverhurst Branch) and the "updated" Cloverhurst Branch. This addendum is submitted attached to a copy of the 2001 TMDL Implementation Plan and Plan Narrative developed by the Northeast Georgia Regional Development Center.

## **HISTORY**

The original Cloverhurst Branch (now Tanyard Creek) was listed as "Not Supporting" the designated use of fishing because of the high fecal coliform values in the 1996 303(d) list based on spill data provided by Athens-Clarke County in 1994-1995. In 2000, trend monitoring data from EPD site #03015601 corrected the stream name to Tanyard Creek. Since some of the original 1994-1995 Athens-Clarke County data indicates it was collected near Cloverhurst Avenue, EPD decided to list the "updated" Cloverhurst Branch in the 2002 303(d) list.

## **DISCUSSION OF POLLUTANT AND POLLUTANT SOURCES**

Fecal coliform is a type of bacteria that lives in the intestinal tract of warm-blooded animals. The presence of these bacteria indicates that the water may be contaminated with human or animal wastes; and may also indicate the presence of harmful pathogens associated with fecal contamination. Fecal coliform contamination may be a sign of malfunctioning septic systems, sewage spills, leaking sewer lines, or animals defecating directly in the stream.

Since both segments are connected, in very close proximity, and have similar urban land use, the possible sources of fecal coliform within the stream segments are very likely the same including overflows and sewer leakage, possible relict septic systems, illicit discharges and miscellaneous urban runoff. These sources have been identified in the 2001 TMDL Implementation Plan for Tanyard Creek ("old" Cloverhurst Branch).

## **MANAGEMENT MEASURES, OUTREACH ACTIVITIES & MONITORING PLAN**

Since the sources of pollution are similar and both segments are within the jurisdiction of Athens-Clarke County, existing required regulatory or voluntary actions can be applied to both segments, as well as the outreach and education activities. Since the "updated" Cloverhurst Branch is a tributary to Tanyard Creek, it is incorporated in the monitoring plan. Also, EPD will be conducting monitoring of the Oconee Basin in 2004. These management measures, outreach activities and the monitoring plan have been identified in the 2001 TMDL Implementation Plan for Tanyard Creek ("old" Cloverhurst Branch).

## **CONCLUSION**

Because these streams are less than a mile; have the same pollutant and pollutant sources; and remedial, outreach and monitoring plan activities; EPD will apply the 2001 TMDL Implementation Plan for Tanyard Creek ("old" Cloverhurst Branch) to the "updated" Cloverhurst Branch. Therefore, this 2001 TMDL Implementation Plan will cover both Tanyard Creek ("old" Cloverhurst Branch) and the "updated" Cloverhurst Branch.

# **TMDL IMPLEMENTATION PLAN FOR CLOVERHURST BRANCH**

## **Introduction**

Cloverhurst Branch is in the Oconee River Basin. The stream segment is listed on the §303(d) list for the State of Georgia for not meeting the water quality standard for fecal coliform to support its designated use of fishing. It is one of eight stream segments being addressed within Athens-Clarke County simultaneously. The U.S. Environmental Protection Agency developed a total maximum daily load estimate (TMDL) for the creek, based on a prediction of a 30-day geometric mean of 459 cfu/100ml and suggested reductions of 70% in surface runoff and in groundwater/interflow. The purpose of this implementation plan is to identify and eliminate sources of fecal coliform in the drainage basin in order to meet the fecal coliform water quality standard.

## **Overview**

The drainage basin of Cloverhurst Branch lies wholly within the boundaries of the Unified Government of Athens-Clarke County. The drainage is a small part of the HUC 12-digit watershed, and defining the precise boundary will be an early task in the implementation plan. A portion of Cloverhurst Branch is confined to an underground culvert beneath the University of Georgia's Sanford Stadium.

The drainage area is a fully developed urban area. The drainage includes multi-family homes and dormitories, several buildings and other structures (including Sanford Stadium) of the University of Georgia, and extensive commercial development. The area is fully served by sewerage. The Athens-Clarke County Utilities Department does not believe there is a high likelihood of homes still using septic tanks in the area. It is an old area, however, and the possibility of very old wastewater disposal routes does exist.

Possible sources of fecal coliform in the basin include overflows and failures of sewer lines; malfunctioning relict septic tanks; illicit direct discharge of residential or business wastewater into tributary streams; animal waste (pets and wildlife); and storm water runoff. There are no known problem areas with sewers in the area now, but there have been overflow problems in the past that were remediated. The stream was listed on the basis of Athens-Clarke County monitoring performed in the aftermath of a spill in 1994 - 1995.

Pinpointing individual sources typically requires extensive analysis and monitoring of the stream and its tributaries during both wet and dry weather conditions.

## **Current Activities**

Past development regulations in Athens-Clarke County (in place for some time) required detention ponds for large developments. However, such regulations were largely not in effect when most of the development in the basin occurred. If detention ponds are present, they have

limited usefulness for water quality, because the ordinance is designed to address water quantity only. It is not known how many storm water detention ponds are situated in the basin, or their locations.

Athens-Clarke County adopted a new land development code in December, 2000, that will require additional treatment of storm water runoff for water quantity as well as water quality. The ordinance at present calls for implementation through storm water management manuals to be adopted at a later date. These manuals are under development. However, the Cloverhurst Branch drainage is fully developed, and future water quality regulations will affect only redevelopment projects.

## **Future Activities**

### **Watershed Team Formation**

A Clarke County Watersheds Task Force will be formed to work on fecal coliform reduction in this basin as well as others in the county. Currently, the task force consists of representatives from the departments of Public Works (in charge of the storm water program), Utilities (in charge of sewerage), and Planning (in charge of land use planning and regulation). The Upper Oconee Watershed Network (UOWN), a public interest group interested in water quality in the Oconee River Basin, has volunteered to participate by linking its stream monitoring activities to the TMDL implementation plans. The Athens-Clarke County public health office will be added to the task force, as will the district and county offices of the Natural Resources Conservation Service.

In addition to the working task force, a stakeholders' group will be formed of persons with an interest in the watersheds. One meeting has been held with stakeholders. The Upper Oconee Watershed Network, Georgia Legal Watch/Community Watershed Project, and interested members of the community attended and expressed interest in continuing to participate. Additional groups and individuals will be contacted and invited to participate in the overall county effort and the Cloverhurst Branch effort specifically. This group will identify areas of concern, offer input to and feedback on plans, participate in outreach and education, and recruit support from the community.

For the Cloverhurst Branch TMDL plan, the University of Georgia's office of planning has committed to be part of the stakeholders' group, but were unable to attend the first meeting.

### **Public Education**

The task force and stakeholders' group will identify or develop materials to use in a public education campaign to inform citizens of the need to reduce sources of waste that might produce fecal coliform and minimize the exposure of storm water to these sources. The campaign will begin immediately and will inform the public of steps they can take to reduce possible sources. The task force will also decide where, when, and how to disseminate this information.

## **Compiling Additional Information**

Among the first steps in implementing this plan will be to compile additional data. Information needed will include, but not be limited to: Accurate delineation of the drainage (using data from the storm water study under way now); collection of existing stream sample data; collection of spill and leak reports connected with the sewer system; and collection of data from the utilities department to match addresses with sewer billing to determine if there are any extant septic tank systems in the drainage.

## **Monitoring**

All existing data on fecal coliform concentrations in Cloverhurst Branch will be compiled. Additional monitoring may be needed. The task force, with help from the stakeholders' group, will determine the specifics for baseline monitoring (such as selecting the locations, frequency, and conditions of monitoring), seek funding from local, state, and federal sources, and conduct the baseline monitoring as needed (provided that funding can be secured). Sampling costs, if carried out by county staff and tested in-house, are estimated to be approximately \$100 per sample. The purpose of the monitoring will be to identify the sources of fecal coliform in the basin in order to target them for abatement. The task force will consider setting up the BASINS/NPSF water quality model, with the assistance of the Northeast Georgia Regional Development Center, to incorporate and better analyze the monitoring data.

The Upper Oconee Watershed Network, and possibly other citizens' groups, sample for fecal coliform as part of their activities. UOWN has indicated a desire to direct their activities specifically toward TMDL-related stream segments. However, the level of training, certification, and oversight of their citizen monitors is unknown. Volunteer fecal coliform sampling will be a part of the monitoring program for this basin. In order to ensure that the data collected is reliable, the program will include cooperative efforts to ensure that data are collected using trained personnel and approved protocols.

The Georgia EPD is scheduled to conduct monitoring of the Oconee Basin in 2004 in support of its 5-year River Basin Management Plan cycle. In addition, the task force may participate in additional monitoring in 2004 - 2005 to determine the effectiveness of implementation plan activities.

## **Source Identification**

After analyzing the monitoring data, the task force will seek to identify and rank potential sources of fecal coliform. It is anticipated that the stakeholders' group will be valuable in this step. Possible sources in the drainage include illegal discharges, sewer line overflows and leaks, animal waste from pets and wildlife, poorly sited and managed commercial solid waste receptacles, and miscellaneous urban surface runoff.

## **Pollution Reduction Strategies**

Considerable data are available and will be tapped to identify any extant septic tank users and

potential areas of concern. If failing septic tank systems are found, prompt action will be taken through the health department to eliminate them.

Public education and outreach will be an important part of the strategy. Informing residents and businesses about the fecal coliform violation is a necessary step to recruiting their support and changing individual behaviors. Outreach will include information about on-site septic systems, disposal of pet waste, and other non-point source pollution prevention. The Upper Oconee Watershed Network is already very active in this area. Strategies could include a web page, mass mailings, attendance at civic clubs and homeowners' association meetings, stream walk\,s, and stream clean-ups.

Athens-Clarke County falls under the Phase II storm water regulations, and is currently undertaking a storm water study, conducted by the consulting firm of Arcadis, Geraghty, and Miller, in order to comply with the requirements of the general permit by 2003. Originally conceived as primarily a water quantity study, the scope of work has been amended to address water quality issues as well. Additional outcomes of this planning effort will be detailed drainage basin mapping at the 2-foot and 1-foot contour level, GIS mapping of all storm sewer lines of eight inches or greater, and the identification of specific problem areas.

### **Phase I Implementation**

Funding options will be explored by the task force. The Clean Water Act §319 funds, state revolving loan fund, Georgia Environmental Facilities (GEFA) grants and loans, Community Development Block Grants, and local funds are sources to explore. Human resources are available through local water quality citizens' groups and will be explored, as well as the many services of the University of Georgia.

Once funding is established, the task force members will pursue measures to reduce the contributions of the sources identified.

### **Monitoring Progress**

After implementation of the strategies has continued for a reasonable length of time, monitoring will be repeated to determine the extent of improvement. The purpose will be to have Cloverhurst Branch removed from the §303(d) list if monitoring shows compliance with the fecal coliform standard.

### **Subsequent Phases**

If the second round of monitoring shows that the stream remains in violation of the fecal coliform standard, then the previous steps will be repeated until acceptable water quality is attained.

### **Reporting**

The task force will write an annual report on progress on the TMDL implementation plan and will prepare a final report showing that water quality compliance has been achieved.

### **Ongoing Maintenance, Monitoring, and Follow-up**

The task force will develop a strategy for maintaining the water quality standard in the future. It will also devise a method of monitoring to assure that standards are indeed maintained.

This plan may be modified according to experience and circumstances.

STATE OF GEORGIA  
 TMDL IMPLEMENTATION PLAN FOR: Cloverhurst Branch  
 (STREAM)

RIVER BASIN: Oconee  
 (PARAMETER) PLAN DATE: 3/27/01

Prepared by: Joseph Tichy Northeast Georgia Regional Development Center Address: 305 Research Drive City: Athens State: Georgia Zip: 30605 e-mail: jtichy@negrdc.org Date Submitted to EPD: _____		Or Prepared By: _____ Address: _____ City: _____ State: _____ Zip: _____ e-mail: _____ Date Submitted to EPD: _____					
<b>General Information</b> 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.		<b>Significant Stakeholders</b> 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)	OCO0000005	Name/Organization	Unified Government of Athens-Clarke County				
Water body name	Cloverhurst Branch	Address	P.O. Box 1868				
HUC basin name	Upper Oconee River	City	Athens	State	GA	Zip	30603-1868
HUC number	030701010505	Phone	706-613-3470		e-mail		
Primary county	Clarke	Name/Organization	See also accompanying list.				
Secondary county	N/A	Address					
Primary RDC	Northeast Georgia	City		State		Zip	
Secondary RDC	N/A	Phone			e-mail		
Water body location	Athens (Clarke County)	Name/Organization					
		Address					
Miles or area impacted	.98 mi.	City	Athens	State	GA	Zip	30601
Parameter addressed in plan	Fecal coliform	Phone			e-mail		
Water use classification	Fishing	Name/Organization					
Degree of impairment	Partially supporting use <input type="checkbox"/>	Address					
	Not supporting use <input checked="" type="checkbox"/>	City		State	GA	Zip	30603
Date TMDL approved by EPA		Phone			e-mail		
Impairment due to	Point sources <input type="checkbox"/>	Name/Organization					
	Nonpoint sources <input checked="" type="checkbox"/>	Address					
	Both <input type="checkbox"/>	City		State		Zip	
<b>Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C</b>		Phone			e-mail		

If more, add to comments on last page.

FORM B

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

EXISTING LOAD	TARGET TMDL	NEEDED REDUCTION
459 cfu/100ml	150 cfu/100ml	309 cfu/100ml (70%)

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 Pervious (runoff)	Pet and wildlife waste from runoff; dumpsters; miscellaneous urban.	70%
Urban Impervious (runoff)	As above; sewer leakage and overflow; possible relict septic tanks	70%
Urban Pervious (interflow/gw)	Leaking sewers, infiltration, septic tanks, illicit discharges	70%

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:

See the attachment for more instructions.

Existing or required regulatory actions

<b>RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY</b>	<b>NAME OF REGULATION/ORDINANCE</b>	<b>DESCRIPTION</b>	<b>ENACTED OR PROJECTED DATE (mm/yy)</b>	<b>STATUS</b>
Clarke County Health Dept.	Septic Tank Permitting	Requires permitting of septic tanks, proper wastewater disposal	Unknown	Ongoing
Athens-Clarke County Planning Dept.	Land Development Ordinance	Require some storm water facilities on larger developments – driven by quantity, not quality.	Unknown	Ongoing

Existing voluntary actions

<b>RESPONSIBLE ORGANIZATION OR ENTITY</b>	<b>NAME OF ACTION</b>	<b>DESCRIPTION</b>	<b>ENACTED OR PROJECTED DATE (mm/yy)</b>	<b>STATUS</b>
Community Watershed Project	Education & Research	Brochures, stream walks, Annual “River Rendezvous”; press articles	Ongoing	Ongoing
ACC Utilities Dept.	Maintenance	Regular clearing and inspection of sewer lines; continual inspection of known problem locations	Ongoing	Ongoing

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 (mm/yy)	STATUS
Athens-Clarke County; volunteer organizations	Monitoring	Monitoring regime TBA to identify specific sources	08/01	Under discussion
Athens-Clarke County	Storm Water Ordinance/System Design	Incorporate water quality into design and operation of storm water facilities; incorporate storm water quality control into development ordinances	2003	Under study for general NPDES storm water permitting
ACC, Health Dept., other TF members	Illicit discharges	Identify any illicit connections of fecal sources to drainage system, failed septic systems	2002 +	Under consideration

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	X			
Identify sources of TMDL parameter	X	X			
Develop management programs to control runoff including identification and implementation of BMPs (Phase I):					
Agriculture					
Forestry					
Urban		X	X	X	X
Mining					
Organize and implement education and outreach programs	X	X	X	X	X
Detect and eliminate illicit discharges		X	X		
Evaluate additional management controls needed			X		
Monitor and evaluate results				X	X
Reassess TMDL allocations					X
Provide periodic status reports on implementation of remedial activities and review/modify implementation plan		X	X	X	X
If needed, begin process for Phase II (next 5 years) and subsequent phases					X

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 \_\_\_\_\_4\_\_\_\_\_
- Number of management controls and activities proposed in five-year work program \_\_\_\_\_3\_\_\_\_\_
- 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 developed See monitoring pla to be
- Other \_\_\_\_\_ \_\_\_\_\_
- Other \_\_\_\_\_ \_\_\_\_\_

VI. MONITORING PLAN:

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
Athens-Clarke Co. (Utilities Dept.)	1994 – 1995	FC, Temp, pH, DO	Monitor in response to spills	Completed
Athens-Clarke Co. (Utilities & Public Works Depts.)	Continual	Uncertain – incl FC	Various – usually in response to problems	Ongoing
Upper Oconee Watershed Network	Unknown	Unknown	General survey of water quality; uncertified samplers, did not necessarily use standard methods.	Ongoing

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

<b>ORGANIZATION</b>	<b>TIME FRAME</b>	<b>PARAMETERS</b>	<b>PURPOSE</b>	<b>STATUS</b>
EPD	2004	All	basin planning	
Upper Oconee Watershed Network	2001 – 2005	FC, other	Support for TMDL implementation	Under consideration
Athens-Clarke County (Utilities & Public Works Depts.)	2001 – 2005	FC	Support for TMDL implementation	TBD pending ability to secure funding from local, state, federal sources

**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, park management)

**COMMENTS**

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