

# **Little Satilla Creek Watershed Cluster TMDL Implementation Plan Narrative Wayne County, Georgia**

## **Introduction**

Four segments of the Little Satilla Creek watershed cluster have been listed as impaired waterbodies on the State of Georgia's 303(d) list of impaired waters. The segments included on the list are Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum), Little Satilla Creek (Boggy Creek to Little Satilla River near Screven), Boggy Creek, and Reedy Creek. Because of the recent drought, there has been less water flow in the creeks. The lack of consistent water flow and the resultant high water temperatures of remaining pools of stagnant water have likely contributed to water quality problems, especially lower dissolved oxygen and fecal coliform. Locals note numerous large beaver dams throughout the creeks that aggravate the problems of low flow and stagnant water. Other concerns expressed by some locals were with current local forestry practices, especially drainage. However, no relevance and substantiating evidence were showing and it must be noted that these concerns relate more directly to concerns of water quantity as opposed to water quality. The lack of residential development and existing land use pattern of Boggy Creek and the presence of Wayne State Prison's wastewater treatment plant raises issues about non-point source pollution as the principal problem along Boggy Creek. While there may be some local concerns about the true nature of water quality issues surrounding the creeks, there is little question that there is a local desire to do what is necessary to better the water quality. The TMDL Implementation Plan concentrates on educating the public about non-point sources of water pollution and encouraging the use of best management practices at the agriculture, forestry, and urban and residential levels. Reduction of oxygen depleting materials entering Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) by 19%, Little Satilla Creek (Boggy Creek to Little Satilla River near Screven) by 16%, Boggy Creek by 13%, and Reedy Creek by 16% will make for better water quality regardless. A reduction in bacterial loading of 88% will significantly improve the quality of water of Little Satilla Creek (Boggy Creek to Little Satilla River near Screven). A more involved and in-depth monitoring program can also help better define the issues and resolve any local concerns.

## **Background and Purpose**

All four impaired segments of the Little Satilla watershed cluster, which lie in Wayne County, are in the Upper Satilla River Basin and eventually flow into the Little Satilla River along the Pierce and Brantley County lines. A 10-mile segment of Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) with headwaters northwest of the City of Odum, a 3-mile segment of Little Satilla Creek (Boggy Creek to Little Satilla River near Screven) with headwaters east of the City of Screven, a 1-mile segment of Boggy Creek with headwaters northwest of the City of Screven, and a 13-mile segment of Reedy Creek with headwaters

in the southeast part of Appling County are currently listed on the 303(d) list in the State of Georgia for violating the water quality standard for dissolved oxygen. The 10-mile segment of Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) is also listed on the State of Georgia's 303(d) list for the presence of fecal coliform bacteria.

Adequate dissolved oxygen in water, which derives from direct absorption from surrounding air, from aeration, and from plant photosynthesis, is necessary for good water quality, and to provide for aquatic life. It is an excellent indicator of the health of a water ecosystem. Organic material such as animal wastes, fertilizer, plants, and other wastes which enter a body of water cause algae growth, thus leading to lower oxygen levels as it dies and decomposes. The amount of oxygen that dissolves in water is also limited by water temperature. The warmer the water, the lower the amount of dissolved oxygen it can hold. Oxygen is essential for fish, invertebrate, plant and aerobic bacteria respiration. Dissolved oxygen levels below 3 ppm are harmful to most aquatic life.

The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals. At the time this occurred, the source water might have been contaminated by pathogens or disease producing bacteria or viruses, which can also exist in fecal material. Some waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis and hepatitis A. The presence of fecal contamination is an indicator that a potential health risk exists for individuals exposed to this water. Fecal coliform bacteria may occur in ambient water as a result of the overflow of domestic sewage or non-point sources of human and animal waste.

The U.S. Clean Water Act requires a TMDL, or Total Maximum Daily Load, to be established for each pollutant in every body of water on the 303(d) list. A TMDL is a calculation of the maximum amount of pollutant, from both point and non-point sources, that a water body can receive and still adhere to the minimum water quality standard developed by the State of Georgia. The United States Department of Interior-Geological Survey (USGS) and the Georgia Environmental Protection Division (GAEPD) gathered samples from the creeks beginning in January of 1998 through December of 1998 measuring the level of dissolved oxygen. In a report given on February 21, 1999, the dissolved oxygen level for 1998 was not in compliance with the daily average of 5.0mg/l and no less than 4.0mg/l at all times for waters supporting warm water species of fish that are state regulated for these four segments in the Little Satilla Creek watershed cluster. The GAEPD also tested samples from the creeks from January to December of 1998 to detect the level of fecal coliform. For the months of May through October, fecal coliform should not exceed a geometric mean of 200 counts per 100ml on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. In the months of November through April, fecal coliform should not exceed a geometric mean of 1000 colonies per 100ml, based on at least four samples collected from a given

sampling site over a 30-day period at intervals not less than 24 hours, and not to exceed a maximum of 4,000 colonies per 100ml for any sample. The data gathered indicated one exceedance of the fecal coliform level during the months of May through October geometric mean standard of 200 colonies per 100ml in the segment of Little Satilla Creek running from Keene Bay Branch to Dry Branch near Odum. In 2000, the 10-mile segment of Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) was placed on the 303(d) list. It should be noted that the Wayne State Prison is listed incorrectly by its NPDES wastewater permit as discharging into Dry Branch/Little Satilla, when it discharges to Boggy Creek. Boggy Creek has had fecal coliform problems as it was one of the creeks which the Heart of Georgia Altamaha RDC prepared a fecal coliform TMDL Implementation Inventory in FY 2001 at the request of EPD.

The purpose of this implementation plan is to identify the actions that must be taken in the future to raise the level of dissolved oxygen in the creeks by reducing the amount of oxygen-hindering materials entering Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) by 19%, Little Satilla Creek (Boggy Creek to Little Satilla River near Screven) by 16%, Boggy Creek by 13%, and Reedy Creek by 16% by 2012. Also, the implementation plan's purpose is to identify those actions that need to be utilized in the future to reduce bacterial loading in Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) by 88% by 2012. This should improve the water quality and better enable the creeks to meet the state water quality standard.

### **Plan Preparation**

The implementation plan was developed by the Heart of Georgia Altamaha RDC with the assistance of a watershed committee comprised of stakeholder representatives from the forestry industry, agriculture, the Georgia Forestry Commission, the Satilla Soil and Water Conservation District, Cooperative Extension Service, the Seven Rivers R C & D, the NRCS, a river activist group, Wayne County Commission, mayors of two local towns, and a city manager. The Heart of Georgia Altamaha RDC was in charge of drafting the plan under a contract signed with the GA EPD to prepare a TMDL Implementation Plan. A preliminary copy of the plan and planning process was discussed and a presentation was given at the initial watershed committee meeting on November 20, 2002 at the Wayne County Commissioners Office.

A meeting to educate the public and receive further stakeholder input by discussing and reviewing the draft plan took place with a presentation at the Polytechnic Center on the campus of Altamaha Technical College in Jesup, GA on December 12, 2002. At this meeting, any landowners who owned 25 acres or more of property within two miles of the creek were sent a letter informing and inviting them to the public meeting. Approximately twenty-five persons attended this meeting. Public comments were solicited and input was placed into the plan. The plan addresses the steps that will be taken in the future to improve the water

quality standard. The plan provides for monitoring and implementation actions to achieve goals submitted on the TMDL. A draft of the final plan was mailed to the watershed stakeholder committee on December 11, 2002, for solicitation of comments before final submittal to EPD.

### **TMDL Data and Potential Sources of Pollution**

In January 1998, the USGS and the GAEPD began a follow-up sampling and monitoring study as a part of a five-year River Basin Planning cycle (Georgia EPD). The data was gathered on a monthly basis through December 1998. Fifteen measurements were taken during the course of the year in Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) at US Route 341 (USGS ID No. 2227430). The minimum level of dissolved oxygen measured was 0.8 (mg/L). The maximum level of dissolved oxygen measured was 8.2 (mg/L). The mean of the fifteen measurements was 4.4 (mg/L). Also in January 1998 at US Route 341, GAEPD (Site 07024851) tested and found one exceedance of the fecal coliform level during the months of May through October geometric mean of 200 colonies/100ml. Nineteen measurements were taken during the course of the year in Little Satilla Creek (Boggy Creek to Little Satilla Creek near Screven) at County Road (USGS ID No. 2227480). The minimum level of dissolved oxygen measured was 0.4 (mg/L). The maximum level of dissolved oxygen measured was 8.6 (mg/L). The mean of the nineteen measurements was 4.2 (mg/L). Twenty measurements were taken during the course of the year in Boggy Creek at County Route 207 (USGS ID No. 2227478). The minimum level of dissolved oxygen measured was 0.4 (mg/L). The maximum level of dissolved oxygen measured was 9.3 (mg/L). The mean of the twenty measurements was 3.6 (mg/L). Nineteen measurements were taken during the course of the year in Reedy Creek at County Route 390 (USGS ID No. 2227429). The minimum level of dissolved oxygen measured was 0.3 (mg/L). The maximum level of dissolved oxygen measured was 9.8 (mg/L). The mean of the nineteen measurements was 4.1 (mg/L). These measurements were recorded and, as a result of the data, the four creek segments were placed on the State of Georgia's 2000 303(d) list as waterbody(s) that did not meet the State of Georgia's standards.

The Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) watershed consists primarily of forest and cropland, with minimal areas of pasture and wetlands. Of the 35,806 acres that make up the impaired segment, 85 percent is comprised of forest and cropland. The Little Satilla Creek (Boggy Creek to Little Satilla River near Screven) and the Reedy Creek watersheds consist primarily of forest and cropland, with minimal areas of pasture and wetlands. Of the 32,404 acres that make up the impaired segment, 82 percent is comprised of forest and cropland. The Boggy Creek watershed consists primarily of forest and cropland, with minimal areas of pasture and wetlands. Of the 29,466 acres that make up the impaired segment, 90 percent is comprised of mainly forest and very little

cropland. Urban non-point sources were identified by EPD as a possible primary source of the dissolved oxygen problem. One of the possible non-point sources is the general storm water runoff that originates from the cities of Odum and Screven. This is the runoff from construction, streets, and residential areas that results from rainfall. There is a point source with an NPDES permit that is a possible contributor to the problem of dissolved oxygen and fecal coliform in Boggy Creek. The Wayne State Prison (#GA0049573) located west of the City of Odum, is a source that flows into Boggy Creek. It is the only point source identified within the entire Little Satilla Creek watershed cluster. The Wayne State Prison's NPDES permit incorrectly identifies its discharge. The Boggy Creek land use and the prison location combine to point to the need for further investigation into the pollution problems, if any, of this creek.

As mentioned in the introduction, the erection by beavers of large dams has been a continuous problem. This has led to a significant reduction in the amount of timber located along the stream. In addition, the presence of the beavers also raises the possibility of an additional contributor of non-point source pollution. The beaver dams tend to aggravate the situation by further restricting a stream's ability to flow. Numerous attempts by locals to rectify the situation have thus far failed to produce significant improvement. Also mentioned in the introduction is the concern expressed by some local citizens toward the timber cutting practices of the local forestry industry. The forestry industry, however, is vigilant about following best management practices and has an ongoing formal monitoring program through an industry group and the Georgia Forestry Commission in place. These concerns seem misplaced and are more appropriately concerns of water quantity rather than water quality. Forested streamside management zones help protect water quality. The monitoring of forestry BMPs, including SMZs, needs to be vigorously continued and their use made more widespread by private landowners.

### **Regulatory and Voluntary Measures: Existing and Future**

Septic tank ordinances are an effective way to curtail urban and residential runoff. In Wayne County, such ordinances are not in effect, although septic tank installations are regulated. It is important that future septic tank regulations, particularly relating to post-construction maintenance, be implemented at the local level. Future use of residential BMPs should also be explored as a practical means of limiting residential runoff. The local Cooperative Extension office can help individual homeowners assess and utilize BMPs through its Home\*A\*Syst Program.

Public education measures, beginning with the TMDL Implementation Plans and continuing in the future concerning Best Management Practices, are an efficient way to reach the local citizenry. Agriculture BMPs include, but are not limited to, the use of a waste storage structure, conservation tillage, waste storage pond, diversion, fencing, filter strips, stock trails/walkways, stream/shoreline protection, nutrient management, and well protection. Farmers utilize some of the agriculture

BMPs currently; however, many do not practice them, and some do not know how to define a BMP. The NRCS and the Seven Rivers RC&D continue to work with farmers by educating them and providing them with the proper resources/information to enable them to install current and future BMPs. Cooperative Extension can also provide individually tailored assistance with BMPs through its Farm\*A\*Syst Program.

The use of forestry BMPs are becoming more prevalent, however, some foresters and landowners continue to ignore forestry BMPs. The Georgia Forestry Commission has and continues to make a conscious effort to educate and monitor BMPs by aerial surveillance. Some forestry BMP categories include, but are not limited to, harvesting in SMZ's, mechanical site preparation, chemical site preparation, fertilization, firebreaks, skid trail stream crossings and road crossings, and logging roads. The State Implementation Committee of the forest industry's Sustainable Forestry Initiative can lend valuable support/assistance.

Cattle farmers have been and will continue to work with the NRCS to develop comprehensive plans to use proper nutrient management techniques. The plans would better the methods that farmers utilize when applying, monitoring and disposing nutrients on a daily basis in order to better implement land use practices. The Georgia EPD is in the process of using these nutrient management plans as a part of an individual permitting process of the cattle farms. This will control one of the principal identified sources of non-point source pollution in the Little Satilla Creek watershed cluster much like a point source.

The cities of Odum and Screven currently do not have planning and zoning regulations within the city limits. Wayne County currently does not have any planning and zoning regulations in the unincorporated areas as well. However, the City of Jesup, the county seat and located near the watershed cluster, does enforce planning and zoning regulations within its city limits. Wayne County enforces erosion and sedimentation control measures at the state level. However, there are no erosion and sedimentation measures enforced at the local level.

The implementation of Land Use Management Regulations is planned in the future on a county-by-county basis. The regulations will be put into place as the necessary support at the local level is obtained. They will be enforced by local governments, GA DNR, GA Department of Human Resources, GA Department of Community Affairs, and the GA Forestry Commission. The regulations would utilize state-mandated environmental planning criteria, local planning and zoning ordinances, BMPs for agriculture and forestry, erosion and sedimentation measures, and septic tank permitting to manage runoff and development. The Heart of Georgia Altamaha RDC will provide technical assistance in developing a "zoning lite" ordinance to encourage local governments to implement planning and zoning measures.

Storm Water Management Regulations are planned for implementation in the future as well on a county-by-county basis. The new regulations will be put into effect as requisite local support is obtained, and the GA DNR, GA EPD, and local governments will enforce them. The regulations would utilize local ordinance enforcement to produce better erosion and sedimentation control at the time of construction. These regulations could possibly require post-construction erosion and sedimentation control and possibly utilize passive design elements in new developments and stream buffers to prevent runoff.

A Cooperative Monitoring Program is needed for future implementation. The GA DNR, GA EPD, local governments, and possibly local volunteers could conduct the program. Additional regular monitoring of the Little Satilla Creek watershed cluster is needed to better define pollutant sources. The Boggy Creek problems need to be examined more closely and better defined. The program could also consist of a scientific study of issues such as natural dissolved oxygen levels in slow-moving blackwater streams. It also could possibly seek funding and cooperation for watershed assessments, including possible model demonstration assessments for small watersheds, and develop a program for implementation assessments for the Little Satilla Creek watershed cluster.

An implementation of an Adopt-A-Stream program is needed. The program would be utilized through various organizations and groups throughout the watershed. The program will provide updates on current stream conditions in the future as the requisite funding and support are developed.

### **Schedule for Implementation**

BMPs for the agriculture and forestry community will be promoted beginning in 2002 and continuing. The schedule for implementing the Land Use Management Regulations and the Storm Water Management Regulations is on a county-by-county basis in the near future, as local support is obtained. It would be helpful if the Cooperative Monitoring Program could be implemented in 2003 pending funding. An Adopt-A-Stream Program would also be helpful if implemented by 2004, pending local support and funding.

### **Monitoring Plan**

The GA Forestry Commission will continue to do aerial and land surveillance of the watershed area. Adopt-A-Stream monitoring will hopefully begin to take place in the future, as the requisite funding and support are developed.

### **Funding**

The GA Forestry Commission will continue to do aerial and land surveillance of the watershed area. The U.S. Fish and Wildlife Service is funding a program called "Partners for Wildlife," which is sponsored through the GA Soil and Conservation Service. Also, some funding will originate from the USDA through the Farm Service Agency and the Natural Resource Conservation Service. The UGA Cooperative Extension Service is funding two programs; Home\*A\*Syst and

Farm\*A\*Syst, which are enacted by the local agriculture extension agent offices. Finally, the State Implementation Committee (SFI) is funding a program called "Sustainable Forestry Initiative." Additional funding is likely needed to establish more in-depth monitoring.

### **Criteria to Determine Progress**

The criteria to determine whether progress toward attainment is being made will be shown through the results of future monitoring, any improved dissolved oxygen and/or fecal coliform levels and lessening of oxygen depleting materials entering the creeks.

### **Conclusion**

Improved future utilization and implementation of best management practices at the agricultural, forestry, and urban levels will provide substantial progress in raising the level of dissolved oxygen in Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum), Little Satilla Creek (Boggy Creek to Little Satilla River near Screven), Boggy Creek, and Reedy Creek. This will also improve the fecal coliform level in Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) (and/or Boggy Creek) by reducing the bacteria level. We anticipate the removal of Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum), Little Satilla Creek (Boggy Creek to Little Satilla River near Screven), Boggy Creek, and Reedy Creek from the State of Georgia's 303(d) list.

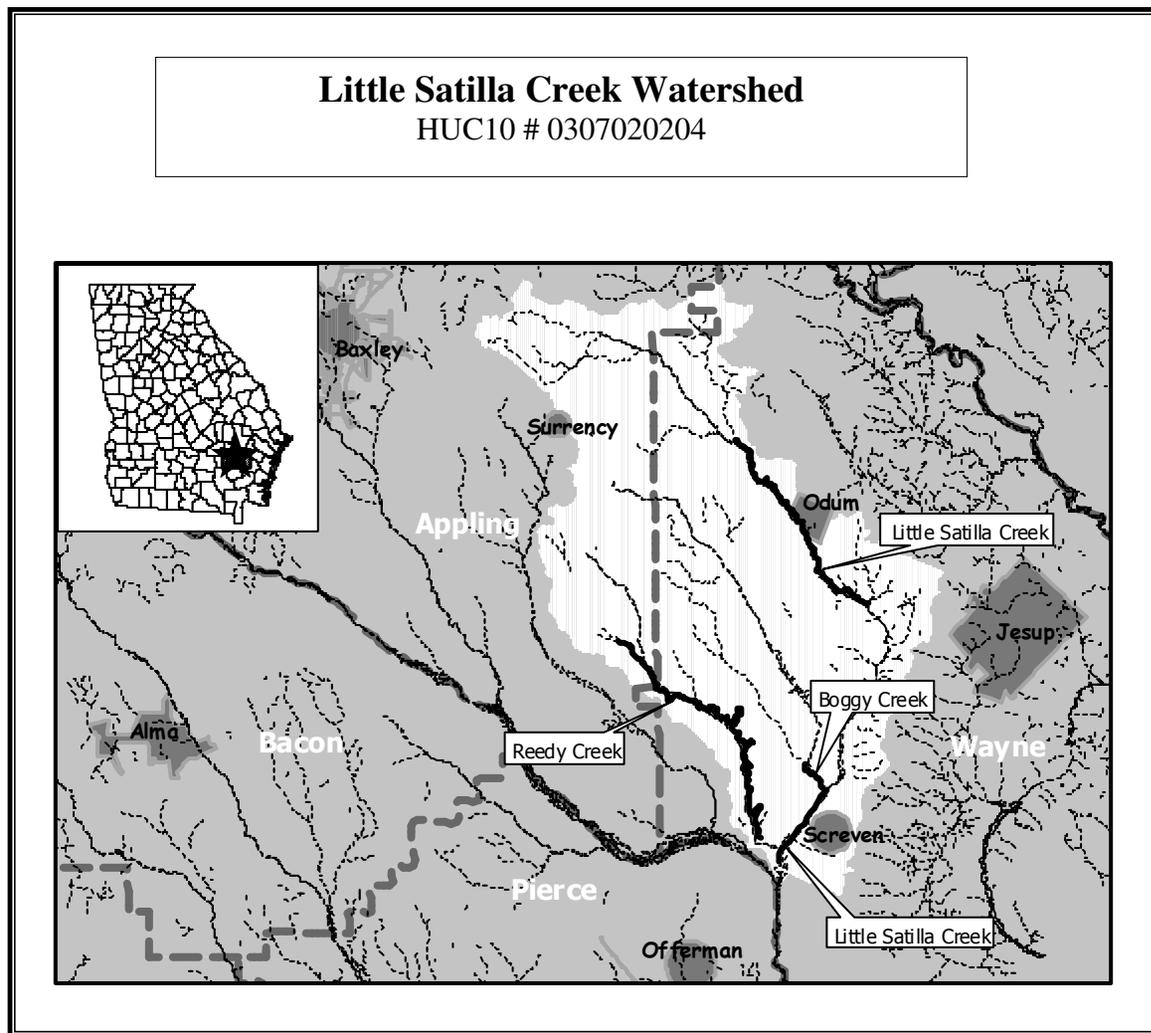
**STATE OF GEORGIA**  
**TMDL IMPLEMENTATION PLAN**  
**WATERSHED APPROACH**  
**SATILLA RIVER BASIN**

Local Watershed Governments  
 Heart of Georgia – Altamaha RDC  
 Wayne County  
 Appling County  
 Cities of Odum, Screven, Surrency

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 waterbody segments and the corresponding pollutants. The impaired waterbody segments 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.



**FIGURE 1**

Impaired Waterbody*	Impaired Segment Location	Impairment
1. Boggy Creek	Dry Creek to Little Satilla Creek north of Screven	DO
2. Little Satilla Creek	Keene Bay Branch to Dry Branch near Odum	DO, FC
3. Little Satilla Creek	Boggy Creek to Little Satilla River near Screven	DO
4. Reedy Creek	Headwaters to Big Satilla Creek near Screven	DO

\*These Waterbody Numbers are referenced throughout the Implementation Plan.

# Action Plan for Little Satilla Creek Watershed

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input checked="" type="checkbox"/> Dissolved Oxygen (DO)	<input type="checkbox"/> Industrial	<input type="checkbox"/> Habitat	Get Involved in Adopt-A-Stream Public Education Use Proper BMPs Check Septic System	Develop Zoning Ordinances Dispose of Harmful Chemicals Properly
<input checked="" type="checkbox"/> Fecal Coliform (FC)	<input checked="" type="checkbox"/> Urban	<input type="checkbox"/> Recreation		
<input type="checkbox"/> Sediment	<input checked="" type="checkbox"/> Agriculture	<input type="checkbox"/> Drinking Water		
<input type="checkbox"/> Metals	<input checked="" type="checkbox"/> Forestry	<input type="checkbox"/> Aesthetics		
<input type="checkbox"/> Fish Consumption Guidelines (FCG)	<input checked="" type="checkbox"/> Residential	<input checked="" type="checkbox"/> Other (Please List)		
<input type="checkbox"/> Other (Please List)	<input type="checkbox"/> Other (Please List)	Fishing		

## Impaired Waterbody & Pollutant:

Boggy Creek- Dissolved Oxygen

Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) – Dissolved Oxygen, Fecal Coliform

Little Satilla Creek (Boggy Creek to Little Satilla River near Screven) – Dissolved Oxygen

Reedy Creek – Dissolved Oxygen

## 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.

<b>Responsible Organization Or Entity</b>	<b>Description</b>	<b>Impacted Waterbodies*</b>	<b>Target Audience</b>	<b>Anticipated Dates (MM/YY)</b>
Heart of Georgia Altamaha RDC	TMDL Presentation at the Wayne County Commissioners Office for the committee	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	Local Governments, Agriculture Organizations, Georgia Forestry Commission, Forestry Industries, Satilla Soil and Water Conservation Service, RiverHaven, Natural Resource Conservation Service, Seven Rivers RC & D	November 20, 2002
Heart of Georgia Altamaha RDC	A Press Release in the The Press Sentinel concerning Public Meeting (December 8 <sup>th</sup> 2002 Edition)	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	General Public	December 8, 2002
Heart of Georgia Altamaha RDC	A Public Service Announcement to WIFO (105.5 FM) in Jesup, GA	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	General Public	December 6-12, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation for Public Meeting at the Polytechnic Center on the Altamaha Technical College Campus in Jesup, GA	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	Landowners with 25 Acres or more within 2 miles on either side of the four creeks in Wayne County	December 12, 2002
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Screven City Council Meeting	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	City Officials	January 6, 2003
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Odum City Council Meeting	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	City Officials	January 7, 2003
Heart of Georgia Altamaha RDC	TMDL Presentation at City of Jesup City Council Meeting	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	City Officials	January 21, 2003
Heart of Georgia Altamaha RDC	TMDL Presentation at Wayne County Commissioners Meeting	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch), Little Satilla (Boggy Creek to Little Satilla Creek), Reedy Creek	County Officials	February 3, 2003

## 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.

<b>Name/Organization</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>	<b>E-Mail</b>
City of Screven	PO Box 146	Screven	GA	31560	(912)-579-2211	
City of Odum	PO Box 159	Odum	GA	31555	(912)-586-2211	
Wayne County Commissioners	PO Box 270	Jesup	GA	31598	(912)-427-5900	
Wayne County Cooperative Extension Service	PO Box 509	Jesup	GA	31598	(912)-427-5965	
GA Forestry Commission	5003 Jacksonville Hwy.	Waycross	GA	31503	(912)-287-4915	
Satilla Soil and Water Conservation Service	4484 K'ville Road	Screven	GA	31560	N/A	
RiverHaven	Route 3 Box 497B	Hortense	GA	31543	N/A	
Rayonier Southeast Forest Products	PO Box 626	Jesup	GA	31598	(912)-427-5280	
Natural Resource Conservation Service	3661 Altama Avenue	Brunswick	GA	31520	(912)-265-8092	
Seven Rivers RC & D	203 South Dixon St. Suite 1	Alma	GA	31510	(912)-632-4832	
Wayne State Prison	1093 Tag St.	Odum	GA	31555	(912)-586-2244	

**WATER BODIES/STREAMS COVERED IN THIS PLAN:**

These impaired waterbody segments 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.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>BOGGY CREEK</b>	Dry Creek to Little Satilla Creek	1	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Wayne			NP	
Pollutants	Water Quality Standards	Required Reduction (%)	TMDL ID	Date TMDL Established
DO	Natural DO = 1.43 mg/l at USGS sampling station # 2227478	Reduce Oxygen demanding materials by 13%		December 2001

Waterbody Name #3	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>LITTLE SATILLA CREEK</b>	Keene Bay Branch to Dry Branch near Odum	10	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Wayne			UR	
Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
DO	Natural DO = 2.96 mg/l at USGS sampling station # 2227430	Reduce oxygen demanding materials by 19%		December 2001
FC	1000/100 ml (geometric mean Nov.-April) 200/100 ml (geometric mean May-Oct.)	Reduce oxygen demanding materials by 88%		June 2000

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
<b>LITTLE SATILLA CREEK</b>	Boggy Creek to Little Satilla Creek near Screven	3	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Wayne			NP	
Pollutants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
DO	Natural DO = 1.78 mg/l at USGS sampling station # 2227480	Reduce oxygen demanding materials by 16%		December 2001

<b>Waterbody Name #2</b>	<b>Location</b>	<b>Miles/Area Impacted</b>	<b>Use Classification</b>	<b>Partially Supporting/ Not Supporting (PS/NS)</b>
<b>REEDY CREEK</b>	Headwaters to Big Satilla Creek near Screven	13	Fishing	NS
<b>Primary County</b>	<b>Secondary County</b>	<b>Second RDC</b>	<b>Source (Point/ Nonpoint)</b>	
Appling	Wayne		UR	
<b>Pollutants</b>	<b>Water Quality Standards</b>	<b>Required Reduction</b>	<b>TMDL ID</b>	<b>Date TMDL Established</b>
DO	Natural DO = 1.28 mg/l at USGS sampling station # 2227429	Reduce oxygen demanding materials by 16%		December 2001

## 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 )

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>	<b>Impacted Waterbodies*</b>
Dissolved Oxygen & Fecal Coliform	Agriculture	Possible introduction of animal waste from upslope practices and sediment from storm water runoff when BMPs are not followed	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch)- DO, Little Satilla (Boggy Creek to Little Satilla Creek)- DO & FC, Reedy Creek
Dissolved Oxygen & Fecal Coliform	Forestry	Possible introduction of sediment and plant debris resulting from timber practices when BMPs are not followed	Boggy Creek, Little Satilla (Keene Bay Branch to Dry Branch)- DO, Little Satilla (Boggy Creek to Little Satilla Creek)- DO & FC , Reedy Creek
Dissolved Oxygen	Residential/Recreational	Possible introduction of discharges resulting from septic tank runoff and littering from nearby residential areas as well as a campground area at nearby Lake Grace and general use of the lake	Boggy Creek
Dissolved Oxygen	Municipal (Wastewater)	Possible introduction of wastewater discharges from prison facility (Wayne State Prison)	Boggy Creek
Dissolved Oxygen & Fecal Coliform	Residential	Possible introduction of discharges resulting from septic tank runoff and littering from nearby residential areas (including Odum)	Little Satilla (Keene Bay Branch to Dry Branch)
Dissolved Oxygen & Fecal Coliform	Municipal (Storm water Runoff)	Possible introduction of storm water runoff from municipal areas (Odum & Screven)	Little Satilla (Keene Bay Branch to Dry Branch)- DO & FC Little Satilla (Boggy Creek to Little Satilla Creek)- DO
Dissolved Oxygen & Fecal Coliform	Urban	Possible introduction of water runoff from urban development in and near Odum & Screven	Little Satilla (Keene Bay Branch to Dry Branch)- DO & FC, Little Satilla (Boggy Creek to Little Satilla Creek)- DO

**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
Georgia Water Quality Control Act (OCGA 12-5-20)	Georgia DNR, EPD	Makes it unlawful to discharge excessive pollutants into waters of the state in amounts harmful to public health, safety or welfare, animals, or the physical destruction of stream habitat	1964	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform-(Little Satilla/Odum)	Agriculture, Municipal, Residential/Recreational, Forestry, Residential	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effective in point source pollution in dealing with local governments and industry/ Limited effectiveness in dealing with non-point sources

Measurable Milestones	Schedule		Comments
	Start	End	
Land Use Application System Permits NPDES Permits	1964	Ongoing	Work with local governments and others to increase monitoring of Land Use Application System Permits and NPDES Permits/ Wayne State Prison has an NPDES Permit (#GA0049573) – Boggy Creek

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Forestry Water Quality Program	Georgia Forestry Commission	Designated by EPD to lead the effort to develop BMP's, educational BMP programs, forestry complaint resolution process and BMP monitoring, conducts biennial BMP monitoring, complaint investigation and mediation	1999 Manual	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coiform-(Little Satilla/Odum)	Preharvesting planning, road management, harvesting, forest chemical management	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek	Established BMPs Effective in limiting runoff and less effective in limiting debris associated with timber practices

Measurable Milestones	Schedule		Comments
	Start	End	
Harvesting in SMZ's, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Stream Crossings/Road Crossings, Logging Roads	1999 Manual	Ongoing	Additional installation of BMPs possible, depending on future monitoring results

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory /Voluntary
Agricultural BMP's	Georgia Soil and Water Conservation Service, Georgia Department of Agriculture	Leads effort in agricultural water quality program, develops agricultural BMP educational and monitoring efforts	1987	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Pesticide management, animal facility runoff, irrigation water management	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Utilization of BMPs has been found to be effective in controlling runoff and other contaminants from farming practices

Measurable Milestones	Schedule		Comments
	Start	End	
Waste Storage Structure, Conservation Tillage, Waste Storage Pond, Diversion, Fencing, Field Borders, Filter Strips, Stock Trails/Walkways, Stream/Shoreline Protection, Nutrient Management, Well Protection, Land Use Application System Permits and NPDES Permits	1987	Ongoing	Additional BMPs possible depending on results of future monitoring/ Work with local governments and others to increase monitoring of Land Use Application System Permits and NPDES Permits

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Nutrient Application Plan	Natural Resource Conservation Service	Leads effort in agricultural water quality by developing plans to control nutrient runoff	2000	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Pesticide management, irrigation water management	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effective in the initial stages of the program’s beginning if plans are followed properly

Measurable Milestones	Schedule		Comments
	Start	End	
Increase the number of farming establishments utilizing nutrient application plans to limit nutrient runoff	2000	Ongoing	Plans will continue to be effective at the local level if they continue to be implemented by more and more farming establishments

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Comprehensive Nutrient Management Plan (CNMP)	Agriculture Extension Service, Department of Natural Resources	Leads effort in agricultural water quality by developing plans to control animal waste runoff	2001	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Animal facility runoff	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effective in the initial stages of the program’s beginning and if the plans are carried out properly

Measurable Milestones	Schedule		Comments
	Start	End	
Increase the number of farming establishments implementing plans/Encourage increased compliance with plan requirements	2001	Ongoing	Plans will continue to be effective at the local level if they continue to be implemented by more and more farming establishments

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Georgia Erosion and Sedimentation Control Act (OCGA 12-7-1)	Georgia Department of Natural Resources Environmental Protection Division and Local Governments	Authorizes local governments to adopt a comprehensive ordinance governing land-disturbing activities within local planning and zoning jurisdictions and require the use of BMPs	Amended 2000	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Agricultural, Residential/Recreational, Municipal, Residential	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effectiveness is minimal due to a lack of local enforcement of erosion and sedimentation control measures

Measurable Milestones	Schedule		Comments
	Start	End	
Local erosion and sedimentation control measures	2003	Ongoing	Work with local governments to obtain a greater enforcement of erosion and sedimentation control measures at the local level

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory /Voluntary
Georgia Planning Act (OCGA 12-2-8)	Georgia Department of Natural Resources and Local Governments	Authorized DCA to develop minimum planning standards and procedures that local government planning and zoning jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountains, water supply watersheds, groundwater recharge areas, and wetlands	1989	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Agricultural, Residential/Recreational, Residential, Municipal	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effectiveness is minimal because of lack of land use management regulations at the local level

Measurable Milestones	Schedule		Comments
	Start	End	
Land Use Management Regulations	2003	Ongoing	Need to work with local governments to establish land use management regulations and other regulations as appropriate/ Need to work with local governments in enforcing DNR’s Part 5 Environmental Planning criteria to better protect local streams

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory /Voluntary
Local Septic Tank Permit Ordinance	Georgia Department of Human Resources and Local Governments	Authorizes the regulation of septic tanks, including placement, installation and maintenance	1969	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Residential/Recreational, Residential	Boggy Creek, Little Satilla Creek - (Odum)	Effective at point of construction and poor at point of post-construction follow up maintenance

Measurable Milestones	Schedule		Comments
	Start	End	
Continuous updating of health inspector manual to upgrade current standards	1969	Ongoing	Better enforcement at local level needed

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory /Voluntary
Land Use Management Regulations	Heart of Georgia Altamaha Regional Development Center, Local Governments, Georgia Department of Natural Resources, Georgia Department of Human Resources, Georgia Department of Community Affairs, Georgia Forestry Commission	Utilize state-mandated environmental planning criteria, local planning and zoning ordinances, BMP's for agricultural and forestry, and septic tank permitting to manage runoff and development, RDC will provide technical assistance in developing a model "zoning-lite" ordinance to encourage local governments to implement planning and zoning measures	Adopted on a County-by-County basis	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Agricultural, Residential/Recreational, Municipal, Residential	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Not very effective due to lack of Land Use Regulations on county-wide level

Measurable Milestones	Schedule		Comments
	Start	End	
Establishment of County-wide Land Use Regulations	2008	Ongoing	There is a need to work with local governments to adopt Land Use Regulations

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Cooperative Monitoring Program	Georgia Department of Natural Resources, Georgia Environmental Protection Division, Local Governments, Heart of Georgia Altamaha Regional Development Center	Seek a scientific study of issues such as natural dissolved oxygen levels in slow-moving streams, could seek funding/cooperation for watershed assessments including possible model demonstration assessments for small watersheds, develop a program for implementation assessments for entire Little Satilla Creek Watershed Cluster		Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Agricultural, Residential/Recreational, Municipal, Residential	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Anticipated effectiveness is significant because of more frequent monitoring which will produce better and more frequent data

Measurable Milestones	Schedule		Comments
	Start	End	
Implementation of Adopt-A-Stream programs with various organizations for purposes of more sampling/Additional monitoring to increase the amount of data collected	2003	Ongoing	Utilize monitoring programs of Georgia Forestry Commission, NRCS, Adopt-A-Stream to gather updated sampling data on a more frequent basis

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Environmental Code Enforcement	Local Governments, Department of Natural Resources, Environmental Protection Division	Utilize local ordinances to ensure greater compliance with state environmental codes at the local level	2008	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Residential/Recreational, Municipal, Residential	Boggy Creek, Little Satilla Creek – (Odum), Little Satilla Creek – (Screven), Reedy Creek	Limited effectiveness due to lack of enforcement at county-wide level

Measurable Milestones	Schedule		Comments
	Start	End	
Establishment of code enforcement program	2008	Ongoing	Greater enforcement of state standards at the local level could help to reduce the amount of man made wastes entering into local streams

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory /Voluntary
Clean Water Act, Section 404 CFR Part 232.3 (Pine Plantation Regulations)	US EPA, Army Corps of Engineers	Requires normal forestry practices to adhere to BMPs and 15 baseline provisions for forest road construction and maintenance in and across waters of the U.S., including lakes, rivers, perennial and intermittent streams, wetlands, sloughs, and natural ponds in order to qualify for the silvicultural exemption from the permitting process	1988	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Forestry	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Significantly effective in controlling runoff in silviculture practices

Measurable Milestones	Schedule		Comments
	Start	End	
Installation of additional BMPs/Increase compliance with BMPs and education by Georgia Forestry Commission and industrial forestry companies	2008	Ongoing	Based on future monitoring results, additional BMPs may be required

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory /Voluntary
Federal Farm Bill	U.S. Department of Agriculture	Prohibits landowners from converting forested wetlands to agricultural uses (swamp buster)		Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Forestry	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effective in leaving forested wetlands in their natural state

Measurable Milestones	Schedule		Comments
	Start	End	
Increase number of farmers utilizing incentive programs to keep forested wetlands in their natural state	1940's	Ongoing	Legislative updates should continue to increase program incentives

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Standards of Practice (OCGA 43-1-19)	Georgia State Board of Registration for Foresters	Failure to practice professional forestry in accordance with generally accepted standards of practices (includes BMPs) shall constitute unprofessional conduct and shall be grounds for disciplinary action	1993	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Forestry	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Effective in ensuring professional standards of forestry practices

Measurable Milestones	Schedule		Comments
	Start	End	
Keeping professional standards updated and enforced	1993	Ongoing	Standards need to be closely monitored and continuously enforced to ensure professional conduct

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Forestry BMPs	Georgia Forestry Commission	BMP Categories include Harvesting in SMZ's, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Stream Crossings and Road Crossings, Logging Roads	1999	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform – (Little Satilla/Odum)	Forestry	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Somewhat Effective but could be more so with increased utilization by more farming establishments

Measurable Milestones	Schedule		Comments
	Start	End	
Continuous installation of new BMPs as appropriate	1999	Ongoing	Need for monitoring of BMPs to monitor utilization and effectiveness/Need for continued and stronger industry enforcement

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
NPDES (National Discharge Permits)	Georgia Department of Natural Resources Protection Division and Local Governments	Regulates facilities that are allowed to discharge treated wastewater into surface water	Unknown	Current	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Correctional Facility	Boggy Creek	Effectiveness is greater with governments and larger industries/ Less effective with smaller entities

Measurable Milestones	Schedule		Comments
	Start	End	
State monitoring and renewal	2000	Ongoing	Wayne State Prison NPDES Permit (#GA0049573) Closer monitoring and enforcement of regulations would make the permit more effective

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Storm water Management Regulations	Georgia Department of Natural Resources, Environmental Protection Division, and Local Governments	Utilize local ordinance enforcement to produce better erosion/sedimentation control at the time of construction, could possibly require post-construction erosion/sedimentation control, could use passive design elements in new developments and stream buffers to prevent runoff	Adopted on a County-by-County basis	Planned	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen & Fecal Coliform	Municipal	Little Satilla Creek – (Odum), Little Satilla Creek – (Screven)	Limited Effectiveness due to lack of erosion and sedimentation regulations

Measurable Milestones	Schedule		Comments
	Start	End	
File for NPDES general land disturbance permit/ Phase II General Industrial Permits	2003	Ongoing	ISTEA Exemption ends for all local governments in March 2003/All cities and counties will need to file Notices of Intent by this date

## POTENTIAL FUNDING SOURCES

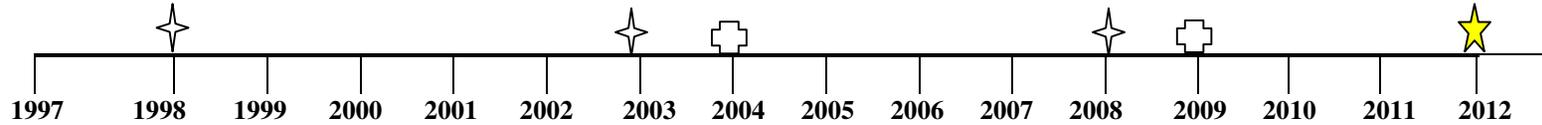
The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

<b>Funding Source</b>	<b>Responsible Authority</b>	<b>Status</b>	<b>Anticipated Funding Amount</b>	<b>Impacted Waterbodies*</b>
Georgia Forestry Commission	Georgia Forestry Commission	Current	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
Georgia Department of Natural Resources	Environmental Protection Division	Current	\$75,000.00	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
U.S. Environmental Protection Agency	U.S. Environmental Protection Agency	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
U.S. Department of Agriculture	Farm Service Agency	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
U.S. Department of Agriculture	Natural Resource Conservation Service	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
U.S. Fish and Wildlife Service	Georgia Soil and Water Conservation Service ("Partners for Wildlife" Program)	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
University of Georgia Extension Service	Local Cooperative Extension Service (Home*A*Syst Program)	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
University of Georgia Extension Service	Local Cooperative Extension Service (Farm*A*Syst Program)	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek
State Implementation Committee	Sustainable Forestry Initiative Program	Planned	Unknown	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek - (Screven), Reedy Creek



### PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by EPD.



- EPD Monitoring ☆
- Evaluate TMDL & Attainment Date ⊕
- Project Attainment ☆

### 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	
1998 USGS Study	United States Geological Survey	Boggy Creek	Dissolved Oxygen	To detect the levels of dissolved oxygen at the USGS Certified Station #2227478 (CR 207)	01/98	12/98	Previous
1998 USGS Study	United States Geological Survey	Little Satilla Creek - (Odum)	Dissolved Oxygen & Fecal Coliform	To detect the levels of dissolved oxygen and fecal coliform at the USGS Certified Station #2227430 (US RT 341) for DO and Site (07024851) for FC	01/98	12/98	Previous
1998 USGS Study	United States Geological Survey	Little Satilla Creek – (Screven)	Dissolved Oxygen	To detect the levels of dissolved oxygen at the USGS Certified Station #2227480 (County Road)	01/98	12/98	Previous
1998 USGS Study	United States Geological Survey	Reedy Creek	Dissolved Oxygen	To detect the levels of dissolved oxygen at the USGS Certified Station #2227429 (CR390)	01/98	12/98	Previous

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
Best Management Practices Monitoring	Georgia Forestry Commission	Boggy Creek, Little Satilla Creek - (Odum), Little Satilla Creek – (Screven), Reedy Creek	Dissolved Oxygen & Fecal Coliform	Within the watershed, can conduct monthly aerial reconnaissance to identify recent forestry practices, conduct BMP audit, and make recommendations for remediation if problems are found		On-going	Current

**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) Install BMPS and reduce the amount by 10% by 2008 when USGS monitors and by 20% by 2012

*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) Classifications are proposed to remain fishing/ Delist from 303(d) list

- Regulatory controls or activities installed (ordinances, laws) Work with local governments and individuals to install Erosion and Sedimentation Controls, Land Use Management Regulations (Development Regulations such as stream buffers, limited impervious cover, porous pavement materials, limited clearing, grading, and disturbance); BMPs, Storm Water Management, Code Enforcement, etc. to help reduce runoff and minimize land disturbance.

- Best management practices installed (agricultural, forestry, urban) Forestry- (Harvesting in Streamside Management Zones, Mechanical Site Preparation, Chemical Site Preparation, Fertilization, Firebreaks, Skid Trail Crossing and Road Crossings, Logging Roads) Agriculture – (Waste Storage Facilities, Conservation Tillage, Waste Storage Pond, Diversion, Fencing, Field Borders, Filter Strips, Stock Trails/Walkways, Stream/Shoreline Protection, Nutrient Management, Well Protection)

Urban – (Septic Tank BMPs, Storm water BMPs )

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**COMMENTS**

Wayne State Prison is located on top of Boggy Creek, instead of Little Satilla Creek (Keene Bay Branch to Dry Branch near Odum) as noted in the Dissolved Oxygen TMDL

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Attachments

- Appendix A – Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Committee Meeting Invitation List (November 20, 2002)
- Appendix B – Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Committee Meeting Sign-in Sheet  
(November 21, 2002)
- Appendix C – Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Committee Meeting Handout  
(November 21, 2002)
- Appendix D – Stakeholder Notification List for Little Satilla Creek Watershed Proposed TMDL Implementation Plan Public Meeting (December 12, 2002)  
(Wayne County)
- Appendix E – Press Release for Public Meeting for Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Public Meeting in The Press-Sentinel (December 4, 2002)
- Appendix F – Announcement for Public Meeting for Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Public Meeting in The Press-Sentinel (Jesup, GA-December 8<sup>TH</sup>, 2002 Edition)
- Appendix G – Public Service Announcement concerning Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Public Meeting given to WIFO-FM (105.5 in Jesup, GA) (December 6-12, 2002)
- Appendix H – Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Public Meeting Sign-in Sheet (December 12, 2002)
- Appendix I - Little Satilla Creek Watershed Cluster Proposed TMDL Implementation Plan Public Meeting Handout (December 12, 2002)

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**Environmental Protection Division of the Department of Natural Resources,  
State of Georgia.**

**TOGETHER WE CAN MAKE A DIFFERENCE!**