STATE OF GEORGIA

REVISED TMDL IMPLEMENTATION PLAN

Savannah and Ogeechee River Basins
Revision 01; June 15, 2007

Partially Supporting Streams due to Fecal Coliform Bacteria

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TMDL Implementation Plans are platforms for establishing courses of actions to restore water quality to impaired water bodies in a watershed. They are intended to be 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 water quality of the water bodies.

The initial TMDL Implementation Plan was part of the TMDL developed in 2005. This Revision supercedes the initial TMDL Implementation Plan.

Table 1. This Implementation Plan is applicable to the following partially supporting streams in the Savannah and Ogeechee River Basins:

STREAM	RIVER BASIN	LOCATION	COUNTY
Big Creek	Ogeechee	Kelley's Pond to Ogeechee River, Louisville	Jefferson
Brier Creek	Savannah	Hwy 305 to MacIntosh Creek	Burke/Screven
Canoochee River	Ogeechee	Ga. Hwy. 192 to Fifteen Mile Creek near Metter	Candler
Crawford Creek	Savannah	Upstream Lake Hartwell near Lavonia	Franklin
Little Ogeechee River	Ogeechee	Two Mile Creek to Hamburg Mill Pond near Culverton	Hancock
Little River	Savannah	Confluence of N. & S. Forks to Kettle Creek near Washington	Wilkes
Peacock Creek	Ogeechee	Hwy. 144 to North Newport River near McIntosh	Liberty
Rocky Comfort Creek	Ogeechee	Duhart Creek to Ogeechee River, Louisville	Jefferson
Rocky Comfort Creek	Ogeechee	Joes Creek to Ivey Branch near Edgehill	Jefferson
She Creek	Savannah	Rabun County(EPA)	Rabun
Spirit Creek	Savannah	McDade Pond to Savannah River	Richmond

INTRODUCTION

The Total Maximum Daily Load (TMDL) process establishes the allowable pollutant loadings or other quantifiable parameters for a water body based on the relationship between pollutant sources and in-stream water quality conditions. This allows water quality-based controls to be developed to reduce pollution and to restore and maintain water quality.

In 2005, the Georgia Environmental Protection Division (EPD) developed TMDLs for fecal coliform for streams in the Savannah and Ogeechee River Basins. The United States Environmental Protection Agency (EPA) developed TMDLs for She Creek in the Savannah River Basin in 2005 independently of EPD. Fecal coliform bacteria are used as an indicator of the potential presence of pathogens in a stream. Table 1 presents the streams in the Savannah and Ogeechee River Basins that are listed on Georgia's 2004 303(d) list for partially supporting their designated use. If one geometric mean is in excess of the standard, the stream is placed on the partial support list. If more than one geometric mean is in excess of the standard, the stream is placed on the not support list. If the number of samples was inadequate for calculating the geometric mean, a stream is placed on the partial support list if 11% to 25% of the samples exceed the fecal coliform criteria, and on the not support list if 26% or more of the samples exceed the standard. Water-use classifications of the impacted streams include Fishing, Recreation, and Drinking Water.

WATER QUALITY STANDARD

Fecal coliform bacteria are used as an indicator of the potential presence of pathogens in a stream. The current water quality standard states that four or more water samples collected within a 30-day period that have a geometric mean for fecal coliform either in excess of 200 Colony Forming Units (CFU) per 100 milliliters from May through October, or in excess of 1000 (CFU) per 100 milliliters from November through April are in violation of the bacteria water quality standard. In addition, a single sample in excess of 4000 (CFU) per 100 milliliters from November through April can also provide a basis for adding a stream segment to the 303(d) listing.

POLLUTANT SOURCES

Identification of potential source categories is an important part of the TMDL analysis. Sources are identified as either point or nonpoint. A point source is defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. Nonpoint sources are diffuse and generally, but not always, involve accumulation of fecal coliform

bacteria on land surfaces that wash into surface waters as a result of storm events.

Some storm water runoff that may contain fecal coliform is regulated under the National Pollutant Discharge Elimination System (NPDES) permit program. Phase I and Phase II NPDES permits regulate storm water discharges associated with specific industrial activities (including construction sites one acre or greater) and municipal separate storm sewer systems (MS4s). Storm water discharges associated with industrial activities are currently covered under a General Storm Water NPDES Permit. The permit requires visual monitoring of storm water discharges, site inspections, implementation of best management practices (BMPs), and record keeping.

At present, all cities and counties, within the state of Georgia that had a population of greater than 100,000 at the time of the 1990 Census are permitted for their storm water discharge under Phase I. In March 2003, small MS4s serving urbanized areas were required to obtain storm water permits under the Phase II NPDES storm water regulations. An urbanized area, as defined by the 2000 Census, is an entity with a residential population of at least 50,000 people and an overall population density of at least 1,000 people per square mile.

MS4 permits prohibit non-storm water discharges (i.e. illicit discharges) from entering storm sewer systems. They also require controls or BMPs to reduce the discharge of pollutants to the maximum extent practicable. A site-specific Storm Water Management Plan (SWMP) outlining appropriate controls is required by and referenced in the permit. The intent of the storm water NPDES permits is not to treat water after collection, but to reduce exposure of storm water to pollutants. It would be infeasible and prohibitively expensive to try to control pollutant discharges from each storm water outfall. Table 2 identifies the 2 stream segments in this plan that are affected by MS4 permittees.

Table 2. Streams and corresponding permitted MS4s in the Savannah and Ogeechee River Basins:

STREAM	RIVER BASIN	LOCATION	PERMITTEE
Peacock Creek	Ogeechee	Hwy. 144 to North Newport River near McIntosh	Hinesville Phase II
Spirit Creek	Savannah	McDade Pond to Savannah River	Richmond County Phase I / Hephzibah Phase II

Fecal coliform loads from NPDES-permitted MS4 areas may be significant, but these sources cannot be easily segregated from other storm water runoff. Other sources of fecal coliform in urban areas include wastes that are attributable to domestic animals, leaks and overflows of sanitary sewers, illicit discharges of sanitary waste, and leaking septic systems. In agricultural areas, potential sources of fecal coliform may include confined animal feeding operations (CAFOs), animals grazing in pastures, dry manure storage facilities and lagoons,

chicken litter storage areas, and direct access of livestock to streams. Wildlife and waterfowl can also be an important source of fecal coliform bacteria.

Fecal coliform bacteria are responsible for approximately 45 percent of the impaired stream segments in the State of Georgia. This TMDL implementation plan addresses only those streams listed as being "partially impaired" by fecal coliform, meaning that water quality standards were generally exceeded only 11% to 25% during a minimum of four separate sampling periods. Identification of specific fecal coliform sources for the majority of these streams is not possible at this time due to the widespread nature of these bacteria in natural environments. With these factors in mind, TMDL implementation for the streams included in this plan should concentrate on educating the public on potential sources of fecal coliform and encouraging implementation of 'good housekeeping practices' directed toward reducing introduction of this contaminant to surface waters.

PLAN FOR TMDL IMPLEMENTATION

Georgia EPD is responsible for administering and enforcing laws to protect the waters of the State and is the lead agency for implementing the State's Nonpoint Source Management Program. Georgia is working with local governments, agricultural and forestry agencies such as the Georgia Department of Agriculture, the Natural Resource Conservation Service (NRCS), the Georgia Soil and Water Conservation Commission (GSWCC), and the Georgia Forestry Commission (GFC) to foster implementation of BMPs that address nonpoint source pollution. The following management practices are recommended to reduce fecal coliform loads to stream segments:

- Sustained compliance with NPDES permit limits and requirements where applicable;
- Adoption of NRCS Conservation Practices for primarily agricultural lands;
- Application of BMPs appropriate to specific agricultural and urban land uses;
- Further development and streamlining of mechanisms for identifying, reporting, and correcting illicit connections, breaks, and other sanitary sewer system problems;
- Adoption of local ordinances requiring periodic septic system inspection, pumpout, and maintenance where appropriate; and
- Ongoing public education efforts on the sources of fecal coliform and common sense approaches to lessen the impact of this contaminant on surface waters.

Public education efforts are targeting individual stakeholders to provide information regarding the use of BMPs to protect water quality. GA EPD will also continue efforts to increase awareness and educate the public about the impact of human activities in urban settings on water quality, ranging from the

consequences of industrial and municipal discharges to individual activities and personal behavior in residential neighborhoods.

MONITORING PLAN

Water quality monitoring is conducted at a number of locations across the State each year. GA EPD has adopted a basin approach to water quality management that divides Georgia's major river basins into five groups. This approach provides for additional sampling work to be focused on one of the five basin groups each year and offers a five year planning and assessment cycle.

GA EPD encourages local governments and municipalities to develop a water quality monitoring program. These programs can help pinpoint various fecal coliform sources as well as verify the 303(d) stream segment listings. This will be especially valuable for those segments where listing was based on limited data. In addition, regularly scheduled sampling will determine if there has been some improvement in the water quality of the listed stream segments.

REFERENCES

GA-EPD 2005, Total Maximum Daily Load Evaluation for Twenty-One Stream Segments in the Ogeechee River Basin for Fecal Coliform (January 2005)

GA-EPD 2005, Total Maximum Daily Load Evaluation for Thirty-Two Stream Segments in the Savannah River Basin for Fecal Coliform (January 2005)

Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-03, Water Use Classifications and Water Quality Standards, Revised February 2004.