Total Maximum Daily Load

**Evaluation** 

**Forty-Nine Stream Segments** 

in the

Coosa River Basin

for Sediment

(Biota Impacted)

Submitted to:

The U.S. Environmental Protection Agency Region 4 Atlanta, Georgia

Submitted by: The Georgia Department of Natural Resources Environmental Protection Division Atlanta, Georgia

January 2009

Total Maximum Daily Load Evaluation Coosa River Basin (Biota Impacted)

**SUMMARY MEMORANDUM** 

January 2009

1. 303(d) Listed Waterbody Information

County:

Cherokee Major River Basin: Coosa 8-Digit Hydrologic Unit Code(s): 03150104

Waterbody Name: **Toonigh Creek** Location: Stream Length: Watershed Area:

Headwaters to Lake Allatoona 6 miles 6.1 square miles Lake Allatoona Piedmont

**Total Allowable Sediment Load Toonigh Creek** 

Constituent(s) of Concern:

Fishing (not supporting designated use)

**Applicable Water Quality Standard:** All waters shall be free from material related to municipal, industrial or other discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses.

214.5 tons/yr

implicit

319.3 tons/yr

2. TMDL Development

Designated Use:

Tributary to:

Ecoregion:

Analysis/Modeling:

Universal Soil Loss Equation was used to determine the average annual sediment load

3. Allocation Watershed/Stream Reach

Wasteload Allocations (WLA): Future Construction Sites

Meet requirements of General Storm Water Permit

Wasteload Allocations (WLAsw): 104.8 tons/yr

Load Allocation (LA):

Margin of Safety (MOS):

Total Allowable Sediment Load:

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6.0 RECOMMENDATIONS

## 6.1 Monitoring

Monitoring is conducted at a number of locations across the State each year. GA EPD has adopted a basin approach to water quality management; an approach 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. The Coosa River Basin, along with the Tallapoosa and Tennessee River Basins, will again receive focused monitoring in 2011. One goal of the focused basin monitoring is to continue to monitor 303(d) listed waters. Therefore, additional monitoring of these streams will be initiated as appropriate during the next monitoring cycle to determine if there has been improvement in the biological communities.

## 6.2 Sediment Management Practices

It has been determined that most of the sediment found in the Coosa River Basin streams is due to past land use practices and is referred to as "legacy" sediment. Therefore, it is recommended that there be no net increase in sediment delivered to the impaired stream segments, so that these streams will recover over time.

The measurement of sediment delivered to a stream is difficult, if not impossible, to determine. Therefore, setting a numeric TMDL may be ineffective given the difficulty in measuring it. In addition, habitat and aquatic communities can be slow to respond to changes in sediment loading, which is why monitoring will continue according to the five-year monitoring cycle. Thus, this TMDL recommends that compliance with NPDES permits and implementation of Best Management Practices (BMPs) be monitored. The anticipated effects of compliance with NPDES permits and implementation of BMPs will be the improvement of stream habitats and water quality, and thus be an indirect measurement of the TMDL.

Management practices recommended to maintain the total allowable sediment loads at current levels include:

- Compliance with NPDES permit limits and requirements; ESPC PLAN + CMP
- Implementation of GFC Best Management Practices for forestry Adoption of NRCS Conservation Practices; — ESPC PLAN
- Adherence to the Mined Land Use Plan prepared as part of the Surface Mining Permit
- Adoption of proper unpaved road maintenance practices;
  See Section 6.2.2.4.
- Implementation of Erosion and Sedimentation Control Plans for land disturbing activities; and ESPC PLAN
- Mitigation and prevention of stream bank erosion due to increased stream flow and velocities caused by urban runoff. To N/A: NO INCREASES DUE TO PROJECT.

## 6.2.1 Point Source Approaches

Point sources are defined as discharges of treated wastewater or storm water into rivers and streams at discrete locations. Treated wastewater tends to be discharged at relatively stable rates; whereas, storm water is discharged at irregular, intermittent rates, depending on precipitation and runoff. The NPDES permit program provides a basis for developing municipal, industrial and storm water permits, monitoring and compliance with limitations, and appropriate

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## 6.2.2.4 Roads

Unpaved roads can be a major contributor of sediment to our waterways if not properly managed. The following guidance for the maintenance and service of unpaved roadways, drainage ditches, and culverts can be used to minimize roadway erosion. One publication that may include some additional guidance is Recommended Practices Manual, A Guideline for Maintenance and Service of Unpaved Roads (Choctawhatchee, et. al, 2000).

Disturbances to unpaved roadway surfaces and ditches, and poor road surface drainage, result in deterioration of the road surface. This leads to increased roadway erosion and, thus, stream sedimentation. Unpaved roads are typically maintained by blading and / or scraping of the roads to remove loose material. Proper, timely, and selective surface maintenance can prevent and minimize erosion of unpayed roadways. This in turn lengthens the life of the road and reduces maintenance costs. Roadway blading that occurs during periods when there is enough moisture content allows for immediate re-compaction. In addition, roadwork performed near streams or stream-crossings during "dry" months of the year can reduce the amount of sediment that enters a stream.

Roadside ditches convey storm water runoff to an outlet. A good drainage ditch is shaped and lined with appropriate vegetative or structural material. A well-vegetated ditch slows, controls and filters the storm water runoff, providing an opportunity for sediments to be removed from the runoff before it enters surface waters. Energy dissipating structures to reduce velocity, dissipate turbulence or flatten flow grades in ditches are often necessary. Efficient disposal of runoff from the road helps preserve the roadbed and banks. Properly installed "turn-outs" or intermittent discharge points help to maintain a stable velocity and proper flow capacity within the ditch by timely outleting water from them. This in turns alleviates roadway flooding, erosion, and maintenance problems. Properly placed "turn-outs" distribute roadway runoff and sediments over a larger vegetative filtering area, helping to reduce road side ditch maintenance to remove accumulated sediment.

Culverts are conduits used to convey water from one side of a road to another. Installation, modification, and / or improvements of culverts when stream flows and expected rainfall is low can reduce the amount of sediment that enters a stream. If the entire installation process, from beginning to end, can be completed before the next rainfall event, stream sedimentation can be minimized. Diverting all existing or potential stream flows while the culvert is being installed can also help reduce or avoid sedimentation below the installation. The culvert design can have a significant impact on the biological community if the size and species of fish passing through it are not considered. Changes in water velocities and the creation of vertical barriers affect the biological communities.

Coosa	0315010403 Etowah River	Settingdown Creek to Long Swamp Creek	FC	IMDL	2003	TMOL PLAN	04/30/2006	
Coosa	0315010403 Settingdown Creek	Dawson and Forsyth Counties (EPA)	Bio(sediment)	TMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010403 Settingdown Creek	Squattingdown Creek to Thalley Creek	Bio F	TMDL	2009		09/30/2009	
Coosa	0315010404 Long Swamp Creek	Hwy 53 to Etowah River, near Ball Ground	FC	TMOL.	2003	TMDL PLAN	04/30/2006	
Coosa	0315010405 Sharp Mountain Creek	Rock Creek to Etowah River	FC	TMDL,	2003	TMDL PLAN	04/30/2006	
Coosa	0315010406 Etowah River	Sharp Mountain Creek to Lake Allatoona	FC	TMDL	2009		09/30/2010	
Coosa	0315010407 Shoal Creek	Hwy 140 to Lake Allatoona	<b>FC</b>	TMDL	1998	TMDL PLAN	03/31/2001	
Coosa	0315010408 Avery Creek	Bradshaw Lake to Mill Creek	Bio F	TMDL.	2009		09/30/2009	
Coosa	0315010408 Chastain Branch	Tributary to Noonday Creek	FC	IMPL	1998	TMDL PLAN	03/31/2001	
Coosa	0315010408 Lake Allatoona	Little River Embayment	Chlorophyll a	TMDL	2003	TMOL PLAN	04/30/2006	
Coosa	0315010408 Lake Allatoona	Little River Embayment	FC	TMDL.	2003	TMDL PLAN	04/30/2006	
Coosa	0315010408 Lake Allatcona	Little River Embayment	FGG(PCBs)	TMDL	1998	TMOL PLAN	03/31/2001	
Coosa	0315010408 Little Noonday Creek	Cobb County	FC	TMDL	2003	TMOL PLAN	04/30/2006	
Coosa	0315010408 Little River	Hwy 140 to Lake Allatoona	FC	TMDL	2009		09/30/2010	
Coosa	0315010408 Noonday Creek	Headwaters to Little Noonday Creek	Bio F	TMDL	2009		09/30/2009	
Coosa	0315010408 Noonday Creek	Little Noonday Creek to Lake Allatoona	Bio-F	TMDL	2009		09/30/2009	
Coosa	0315010408 Noonday Creek	Little Noonday Creek to Lake Allatoona	FC.	IMOL	2009		09/30/2010	
Coosa	0315010408 Rocky Creek	D/S Garrett Lake (Fulton County)	-FC	IMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010408 Rubes Creek	Headwaters to Little River	BioF	TMDL	2009		09/30/2009	
Coosa	0315010408 Rubes Creek	Headwaters to Little River	FC	TMDL	5003	IMDL PLAN	04/30/2006	
Coosa Coosa	0315010408 Toonigh Creek	Headwaters to Lake Allatoona	Bio F	TMDL	2009		09/30/2009	
Coosa	0315010409 Acworth Creek	Tributary to Lake Acworth	FC	IMDL	2003	IMPLEDAN	04/30/2006	,
Coosa	0315010409 Allatoona Creek	Headwaters to Little Allatoona Creek	Bio ₹	IMDL	2009		09/30/2009	
Coosa	0315010409 Allatoona Creek	Headwaters to Little Allatoona Creek	FC	TMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010409 Butler Creek	Headwaters to Lake Acworth	Bio F	TMDL	2009		09/30/2009	
Coosa	0315010409 Butler Craek	Headwaters to Lake Acworth	FC	IMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010409 Lake Acworth	Upper/Mid-Lake Cobb County	FC	IMDL	2003	IMDL PLAN		
Coosa	0315010409 Lake Allatoona	Tanyard Creek Embayment	FC	TMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010409 Lake Allatoona	Tanyard Creek Embayment	FCG(PCBs)	IMDL	1998	TMOL PLAN	03/31/2001	
Coosa	0315010409 Little Allatoona Creek	Cobb County	FC	IMDL	2003	IMDL PLAN		
Coosa	0315010409 Proctor Creek	Headwaters to Lake Acworth	Bio F	TMDL	2009	markets and seed	09/30/2009	
Coosa	0315010409 Proctor Creek	Headwaters to Lake Acworth (Cobb County)	FG	TMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010409 Tanyard Creek	White Lake to Lake Allatoona	FC,	TMDL	2003	TMDL PLAN		
Coosa	0315010409 Tributary to Allatoona Creek	Cobb County	FC	IMDL	2003	TMDL PLAN	04/30/2006	
Coosa	0315010410 Kellogg Creek	Lake Allatoona Tributary	FC	IMDL	1998	TMDL PLAN	03/31/2001	
Coosa	0315010410 Lake Allatoona	Carters Creek Embayment	FC	TMOL	2003	IMPL PLAN	04/30/2006	
Coosa	0315010410 Lake Allatoona	Cherokee, Cobb, & Bartow Counties	FCG(PCBs)	IMPL	1998	TMDL PLAN	03/31/2001	
Coosa	0315010410 Owl Creek	Lake Allatoona Tributary	FC	IMDL	2003	TMDL.PLAN	04/30/2006	
Coosa	0315010410 Rowland Springs Branch	Lake Allatoona Tributary	FC	IMDL	1998	IMOL PLAN	03/31/2001	
Coosa	0315010410 Stamp Creek	Lake Allatoona Tributary	FC	TMDL	1998	TMOL PLAN	03/31/2001	
Coosa	0315010411 Lawrence Creek	Headwaters to Pumpkinvine Creek	Bio F	IMPL	2009	muisas, montes	09/30/2009	
Coosa	0315010411 Pumpkinvine Creek	Little Pumpkinvine Creek to Etowah River	FÇ	TMDL	2003	IMOL PLAN		
Coosa	0315010411 Pumpkinvine Creek	Weaver Creek to Little Pumpkinvine Creek (north of Dallas)	Bio F	IMDL	5000	المراجعة ويعرو وهوا	09/30/2009	
Coosa	0315010412 Raccoon Creek	Pegamore Lake to Etowah River	FC.	IMPL	2003	TMOL PLAN	04/30/2006	
Coosa	0315010413 Etowah River	Lake Allatoona to Richland Creek	DO	TMDL	1999	TMDL PLAN	03/31/2001	
Coosa	0315010413 Etowah River	Lake Allatoona to Richland Creek	FC	IMDL	2003	IMOL PLAN	04/30/2006	
Coosa	0315010413 Etowah River	Lake Allatoona to Richland Creek	FCG(PCBs)	IMDL	2003	TMOL PLAN		
Coosa	0315010413 Etowah River	Richland Creek to Euharlee Creek	FCG(PCBs)	TMDL	2003	TMDL PLAN	, -	
Coosa	0315010413 Nancy Creek	Headwaters to Pattit Creek	Blo F	TMDL	2009		09/30/2009	
Coosa	0315010413 Pettit Creek	Satterfield Branch to Nancy Creek	FC	TMDL	2009		09/30/2009	
Coosa	0315010413 Tributary to Pettit Creek	Cartersville	FC	IMDL	2003	TMDL PLAN		
Coosa	0315010414 Euharlee Creek	Hills Creek to upstream Plant Bowen	FC	IMDL.	2003	IMDL PLAN	04/30/2006	
COOSA	0315010414 Euharlee Creek	Hills Creek to upstream Plant Bowen (EPA)	Bio(sediment)	TMDL.	2003	TMOL PLAN	04/30/2006	

SHEET NO.