Total Maximum Daily Load

Evaluation

for

Seventy Stream Segments

in the

Ocmulgee 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

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EXECUTIVE SUMMARY

The State of Georgia assesses its water bodies for compliance with water quality standards criteria established for their designated uses as required by the Federal Clean Water Act (CWA). Assessed water bodies are placed into three categories, supporting, partially supporting, or not supporting their designated uses, depending on water quality assessment results. These water bodies are found on Georgia's 305(b) list, as required by that section of the CWA that defines the assessment process, and are published in *Water Quality in Georgia* (GA EPD, 2000-2001).

Some of the 305(b) partially and not supporting water bodies are also assigned to Georgia's 303(d) list, also named after that section of the CWA. Water bodies on the 303(d) list are required to have a Total Maximum Daily Load (TMDL) evaluation for the water quality constituent(s) in violation of the water quality standard. The 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 restore and maintain water quality.

The State of Georgia has identified seventy (70) stream segments located in the Ocmulgee River Basin as water quality limited (i.e., 303(d) listed as Biota Impacted) due to sedimentation. The water use classification of all of the impacted streams is Fishing. The general water quality criteria not being met states:

> 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.

The Biota Impacted designation indicates that studies have shown a modification of the biological community; more specifically, fish. In 1998 and 1999, the Department of Natural Resources (DNR) Wildlife Resources Division (WRD) conducted studies of fish populations. WRD used the Index of Biotic Integrity (IBI) and modified Index of Well-Being (IWB) to identify affected fish populations. The IBI and IWB values were used to classify the populations as Excellent, Good, Fair, Poor, or Very Poor. Stream segments with fish populations rated as Poor or Very Poor were listed as Biota Impacted, and were included in the partially supporting or not supporting list. Forty-one stream segments were rated as Poor or Very Poor, placed on the 303(d) list as partially supporting or not supporting their designated use, and scheduled for TMDL evaluation. The TMDLs for these forty-one stream segments were completed in January 2002. Since that time, two of the stream segments evaluated in the 2002 TMDL document have been removed from the 303(d) list (Little Shellstone Creek and Shellstone Creek).

Between 2000 and 2003, the WRD conducted additional studies of fish populations in the Ocmulgee River Basin. Based on these studies, thirty-one additional stream segments were rated as Poor or Very Poor and placed on the 303(d) list as partially supporting or not supporting their designated water use. Overall, between 1998 and 2003, fifty-seven stream segments were rated as Excellent, Good, or Fair and assessed as supporting their designated water use.

The general cause of low IBI scores is the lack of fish habitat due to stream sedimentation. To determine the relationship between the in-stream water quality and the source loadings, each watershed was modeled. The analysis performed to develop sediment TMDLs for the 303(d) listed watersheds utilized the Universal Soil Loss Equation (USLE). The USLE predicts the total

annual soil loss caused by erosion. The USLE method considered the characteristics of the watershed including land use, soil type, ground slope, and road surface. National Pollutant Discharge Elimination System (NPDES) permitted discharges were also considered. Modeling assumptions were considered conservative and provide the necessary implicit margin of safety for the TMDL.

The USLE was applied to both the partially supporting and not supporting 303(d) listed watersheds, and those not biologically impacted to determine both the existing sediment loading rates and the sediment load reductions needed to support beneficial use (i.e., unimpacted conditions). The average sediment load in those watersheds listed on the partially supporting or not supporting list is 0.19 tons/acre/yr, ranging from 0.01 to 1.91 tons/acre/yr. The average sediment load of the unimpaired watersheds is 0.16 tons/acre/yr, ranging from 0.02 to 1.22 tons/acre/yr. These values represent sediment load contributions from all land uses within unimpaired watersheds. Note that the average annual sediment loads for both watershed groups are generally within the same range.

Table 1 shows that approximately 29.9 percent of the average sediment load in the Ocmulgee River Basin is from roads. Approximately 20.0 percent of the total sediment load results from row crops, having an average sediment load of 1.33 tons/acre/yr. Urban land contributes approximately 14.7 percent of the total sediment load, with an average load of 0.27 tons/acre/yr. Grasses and wetlands contribute approximately 11.4 percent of the total sediment load, pasture and hay make up about 10.8 percent of the total load, and quarries, strip mines, and gravel pits contribute approximately 9.3 percent of the total sediment load. Estimates of the sediment contribution from construction are not available, but could represent a relatively high sediment load per acre.

Table 1. Summary of Current Conditions in the Ocmulgee River Basin

Land Use	Average Percent Land Use	Average Percent Sediment Load	Average Sediment Load (tons/acre/yr)
Open Water	0.7%	0.0%	0.01
Urban	13.3%	14.7%	0.27
Bare Rock, Sand and Clay	0.4%	0.0%	0.00
Quarries, Strip Mines, Gravel Pits	0.4%	9.3%	7.92
Forest	55.3%	3.2%	0.03
Pasture/Hay	13.6%	10.8%	0.09
Row Crops	3.8%	20.0%	1.33
Grasses, Wetland	11.5%	11.4%	0.32
Roads		29.9%	

These data indicate that row crops are the major source of sediment to our rivers and streams. However, over the last century there has been a dramatic decrease in the amount of land farmed in Georgia. Since 1950, there has been a 57 percent reduction in farmland. With the reduction in farmland, there has also been a decrease in the amount of soil erosion. This suggests that the sedimentation observed in the impaired stream segments may be legacy

sediment resulting from past land use practices. It is believed that if sediment loads are maintained at acceptable levels, streams will repair themselves over time.

This TMDL determines the sediment loads that can enter the impaired Ocmulgee River Basin streams without causing sediment impairment to the streams. This is based on the hypothesis that if an impaired watershed has a total annual sediment loading rate similar to a biologically unimpaired watershed, then the receiving stream will remain stable and not be biologically impaired due to sediment. The average total annual sediment load in the Ocmulgee River Basin unimpaired watersheds is 0.19 tons/acre/yr. The total annual sediment loads for each of the impaired watersheds are summarized in Table 2, along with any required sediment load reductions. The thirty-nine impaired stream segments remaining from the 2002 TMDL document are presented first, followed by the thirty-one impaired stream segments that have been listed based on additional WRD fish population studies.

Table 2. Total Annual Sediment Loads and the Required Sediment Reduction

Name	Current Load (tons/yr)	WLA (tons/yr)	WLAsw (tons/yr)	LA (tons/yr)	Allowable Total Load (tons/yr)	% Reduction
Barbershela Creek	681.7		180.0	77.2	257.1	62.3
Big Sandy Creek	155.4			155.4	155.4	0.0
Brown Branch	430.1			189.3	189.3	56.0
Butlers Creek	59.7			59.7	59.7	0.0
Cabin Creek	982.4	257.2		223.1	480.3	51.1
Calaparchee Creek	208.5			153.5	153.5	26.4
Carr Branch	58.1		10.2	47.9	58.1	0.0
Cobbs Creek	257.9		82.8	35.5	118.3	54.1
Cole Creek	122.5			56.3	56.3	54.0
Doolittle Creek	712.9		191.4	82.0	273.4	61.6
Dried Indian Creek	367.5		126.5	121.0	247.6	32.6
Eightmile Creek	86.0			34.9	34.9	59.4
Garner Creek	389.0		142.5	61.1	203.6	47.7
Gladesville Creek	181.7			181.7	181.7	0.0
Hansford Branch	26.1			26.1	26.1	0.0
Harmon Pye Branch	88.4			88.4	88.4	0.0
Herds Creek	487.8			487.8	487.8	0.0
Intrenchment Creek	330.8		231.6	99.3	330.8	0.0
Island Shoal Creek	244.7			160.2	160.2	34.5
Little Chehaw Creek	105.7			105.7	105.7	0.0
Little Deer Creek	1,745.4	162.7		134.7	297.4	83.0
Little Deer CreekTributary	1,333.4			43.7	43.7	96.7
Little Suwannee Creek	943.6		257.7	110.4	368.1	61.0
Long Branch	118.2			101.0	101.0	14.6
Malholms Creek	16.4			16.4	16.4	0.0
Mill Dam Creek	139.9			80.0	80.0	42.8
Mountain Creek	385.3			179.3	179.3	53.5
Phinazee Creek	123.5			111.8	111.8	9.5
Red Creek	606.9			482.0	482.0	20.6
Rock Creek	153.4	43.8		9.3	53.1	65.4
Rocky Creek - Butts	200.6			134.3	134.3	33.1
Rocky Creek - Monroe	396.8			254.6	254.6	35.8

Name	Current Load (tons/yr)	WLA (tons/yr)	WLAsw (tons/yr)	LA (tons/yr)	Allowable Total Load (tons/yr)	% Reduction
Rocky Creek - Bibb	259.8		77.1	157.2	234.2	9.9
Rum Creek	501.2	63.9		372.9	436.8	12.8
Sand Branch	140.7			44.9	44.9	68.1
Scoggins Creek	252.8			132.7	132.7	47.5
Shoal Creek	269.9		114.9	49.2	164.1	39.2
Snapping Shoals Creek	3,569.5	56.5	418.0	197.6	672.1	81.2
South River	2,621.0		1,571.4	673.5	2,244.8	14.4
Third Branch	118.2			101.0	101.0	14.6
Tobesofkee Creek	402.5	54.8		292.9	347.7	13.6
Tobler Creek	404.3			369.2	369.2	8.7
Town Branch	199.4	21.3		39.6	60.9	69.5
Trib to Little Haynes Cr	305.9			87.6	87.6	71.4
Trib to Tobesofkee Cr	67.2			37.6	37.6	44.0
Walnut Creek – Jones	6,491.6			1,067.3	1,067.3	83.6
Walnut Creek - Crawford	369.4			369.4	369.4	0.0
White Creek	128.8			108.0	108.0	16.1
Wise Creek	339.6			339.6	339.6	0.0
Wood Creek	146.2			62.8	62.8	57.0
Bay Creek	302.7	100.5		89.8	190.3	37.1
Big Grocery Creek	155.2			155.2	155.2	0.0
Big Horse Creek	18,632.5			10,482.1	10,482.1	43.7
Big Indian Creek	22,048.5	137.0		13,042.8	13,179.8	40.2
Bluff Creek	18,379.3			5,918.9	5,918.9	67.8
Cedar Creek	3,445.8			1,090.8	1,090.8	68.3
Crooked Creek	4,961.5			3,556.5	3,556.5	28.3
Deep Creek	1,274.5			1,274.5	1,274.5	0.0
Flat Creek	7,315.5			2,299.2	2,299.2	68.6
Folsom Creek	4,369.6			1,737.1	1,737.1	60.2
Gum Swamp Creek	8,360.4			4,908.0	4,908.0	41.3
Hartley Branch	392.6			364.8	364.8	7.1
Horse Creek	5,734.2			2,986.3	2,986.3	47.9
House Creek	1,565.4			345.9	345.9	77.9
Limestone Creek	12,917.2			1,613.8	1,613.8	87.5
Mossy Creek	12,950.8		53.6	7,606.0	7,659.7	40.9
Otter Creek	4,532.6			2,941.0	2,941.0	35.1
Rocky Creek - Jasper	12.1			12.1	12.1	0.0
Sturgeon Creek	5,832.4			4,634.9	4,634.9	20.5
Ten Mile Creek	10,325.3			3,444.6	3,444.6	66.6

Management practices that may be used to help maintain the annual average sediment loads at current levels include:

- Compliance with the requirements of the NPDES permit program;
- Implementation of GFC Best Management Practices for forestry;
- Adoption of NRCS Conservation Practices;
- Adherence to the Mined Land Use Plan prepared as part of the Surface Mining Permit Application;
- Adoption of proper unpaved road maintenance practices;
- Implementation of Erosion and Sedimentation Control Plans for land disturbing activities; and
- Evaluation of the effects of increased flow due to urban runoff on stream bank erosion.

Though the measurement of sediment delivered to a stream is difficult to determine, by monitoring the implementation of these practices, their anticipated effects will contribute to improving stream habitats and water quality, and thus be an indirect measurement of the TMDLs.

1.0 INTRODUCTION

1.1 Background

The State of Georgia assesses its water bodies for compliance with water quality standards criteria established for their designated uses as required by the Federal Clean Water Act (CWA). Assessed water bodies are placed into three categories, supporting, partially supporting, or not supporting their designated uses, depending on water quality assessment results. These water bodies are found on Georgia's 305(b) list, as required by that section of the CWA that addresses the assessment process, and are published in *Water Quality in Georgia* (GA EPD, 2000-2001).

Some of the 305(b) partially and not supporting water bodies are also assigned to Georgia's 303(d) list, also named after that section of the CWA. Water bodies on the 303(d) list are required to have a Total Maximum Daily Load (TMDL) evaluation for the water quality constituent(s) in violation of the water quality standard. The TMDL process establishes the allowable loading of pollutants or other quantifiable parameters for a water body based on the relationship between pollution sources and in-stream water quality conditions. This allows water quality based controls to be developed to reduce pollution and restore and maintain water quality.

In 1998 and 1999, the Department of Natural Resources (DNR) Wildlife Resources Division (WRD) conducted studies of fish populations at a number of monitoring sites in the Ocmulgee River Basin. WRD used the Index of Biotic Integrity (IBI) and modified Index of Well-Being (IWB) to identify affected fish populations. The IBI and IWB values were used to classify the populations as Excellent, Good, Fair, Poor, or Very Poor. Stream segments with fish populations rated as Poor or Very Poor were listed as Biota Impacted. The Biota Impacted designation indicates that studies have shown a significant modification of the biological community. Forty-one stream segments were rated as Poor or Very Poor, placed on the 303(d) list as partially supporting or not supporting their designated use, and scheduled for TMDL evaluation. The TMDLs for these forty-one stream segments were completed in January 2002. Since that time, two of the stream segments evaluated in the 2002 TMDL document have been removed from the 303(d) list (Little Shellstone Creek and Shellstone Creek).

In each year between 1999 and 2003, the WRD conducted additional studies of fish populations in the Ocmulgee River Basin. Based on these studies, thirty-one additional stream segments were rated as Poor or Very Poor and placed on the 303(d) list as partially supporting or not supporting their designated water use. Overall, between 1998 and 2003, fifty-seven stream segments were rated as Excellent, Good, or Fair and assessed as supporting their designated water use. The seventy impaired stream segments are shown in Table 3. The thirty-nine impaired stream segments remaining from the 2002 TMDL document are presented first, followed by the thirty-one impaired stream segments that have been listed based on additional WRD fish population studies.

1.2 Watershed Description

The seventy impaired watersheds located in the Ocmulgee River Basin are located in the following counties: Ben Hill, Bleckley, Butts, Crawford, DeKalb, Dodge, Dooly, Fulton, Gwinnett, Henry, Houston, Jasper, Jones, Lamar, Macon, Monroe, Newton, Peach, Pulaski, Rockdale, Spalding, Telfair, Twiggs, Walton, and Wilcox (see Figure 1). The fifty-seven unimpaired watersheds are located in the following counties: Bibb, Bleckley, Crawford, DeKalb, Dodge,

Table 3. 303(d) Listed Stream Segments Located in the Ocmulgee River Basin

STREAM	STATUS	LOCATION	MILES
Bay Creek	Not Supporting	Headwaters to Beaver Creek (Peach/Houston Co.)	9
Big Sandy Creek	Partially Supporting	Upstream Indian Springs (Butts Co.)	8
Brown Branch	Partially Supporting	Headwaters (Locust Grove) to Wolf Creek (Henry Co.)	5
Butlers Creek	Partially Supporting	Tributary to Ocmulgee River (Jones Co.)	5
Cabin Creek	Not Supporting	Headwaters, Griffin to Towaliga River (Spalding Co.)	16
Calaparchee Creek	Partially Supporting	Upstream Lake Wildwood (Monroe/Bibb Co.)	13
Cole Creek	Partially Supporting	Tributary to Tobesofkee Creek (Lamar/Monroe Co.)	6
Eightmile Creek	Partially Supporting	Tributary to Towaliga River (Monroe Co.)	5
Gladesville Creek	Partially Supporting	Headwaters to Little Falling Creek (Jasper Co.)	9
Hansford Branch	Partially Supporting	Monroe County	2
Harmon Pye Branch	Partially Supporting	Tributary to Wise Creek (Jasper Co.)	1
Hartley Branch	Partially Supporting	Tributary to Deep Creek (Crawford Co.)	1
Herds Creek	Partially Supporting	D/S Ga. Hwy. 212 to Ocmulgee River (Jasper Co.)	6
Little Chehaw Creek	Partially Supporting	Headwaters to Chehaw Creek (Jones Co.)	3
Little Deer Creek	Partially Supporting	Headwaters to Deer Creek (Monroe Co.)	6
Little Deer Creek Tributary	Partially Supporting	Headwaters to Little Deer Creek (Monroe Co.)	1
Long Branch	Partially Supporting	Tributary to Ocmulgee River (Jasper Co.)	3
Malholms Creek	Partially Supporting	Headwaters (Jenkinsburg) to Tussahaw Creek (Butts Co.)	6
Mill Dam Creek	Partially Supporting	Monroe County	4
Phinazee Creek	Partially Supporting	Lamar/Monroe Counties	6
Red Creek	Partially Supporting	Tributary to Rocky Creek (Monroe Co.)	3
Rock Creek	Partially Supporting	Upstream Lite-N-Tie Rd. (Jones Co.)	1
Rocky Creek - Jasper	Partially Supporting	Jasper County	5

STREAM	STATUS	LOCATION	MILES
Rocky Creek - Butts	Partially Supporting	Upstream Big Sandy Creek (Monroe/Butts Co.)	6
Rocky Creek - Bibb	Partially Supporting	Upstream Lake Wildwood (Monroe/Bibb Co.)	7
Rocky Creek - Monroe	Partially Supporting	D/S English Rd. (CR 152) to Towaliga River (Monroe Co.)	4
Rum Creek	Partially Supporting	Rum and Town Creeks, U/S Lake Juliette (Monroe Co.)	6
Sand Branch	Partially Supporting	Tributary to Towaliga River (Monroe Co.)	2
Scoggins Creek	Partially Supporting	Tributary to Ocmulgee River (Jones Co.)	2
Third Branch	Partially Supporting	Tributary to Ocmulgee River (Jones Co.)	3
Tobesofkee Creek	Partially Supporting	Barnesville to Cole Creek (Lamar/Monroe Co.)	8
Tobler Creek	Partially Supporting	Tributary to Ocmulgee River (Monroe Co.)	6
Town Branch	Not Supporting	Headwaters (Jackson) to Aboothlacoosta Creek (Butts Co.)	3
Tributary to Tobesofkee Creek	Partially Supporting	Barnesville (Lamar Co.)	2
Walnut Creek - Crawford	Partially Supporting	Downstream Hwy. 42 (Crawford Co.)	4
Walnut Creek – Jones	Not Supporting	Headwaters to Ocmulgee River (Jones/Bibb Co.)	20
White Creek	Partially Supporting	Lamar/Monroe Counties	4
Wise Creek	Not Supporting	Headwaters to Ocmulgee River (Jasper Co.)	6
Wood Creek	Partially Supporting	Headwaters to D/S Ga. Hwy. 83 (Lamar/Monroe Co.)	3
Barbershela Creek	Partially Supporting	Headwaters to Snapfinger Creek (DeKalb Co.)	6
Big Grocery Creek	Partially Supporting	Headwaters to Ocmulgee River (Houston Co.)	4
Big Horse Creek	Partially Supporting	Alligator Creek to Ocmulgee River (Telfair Co.)	15
Big Indian Creek	Partially Supporting	Flat Creek to Mossy Creek (Houston Co.)	7
Bluff Creek	Partially Supporting	Ten Mile Creek to Ocmulgee River (Pulaski Co.)	4
Carr Branch	Partially Supporting	Headwaters to Yellow River (Rockdale Co.)	3
Cedar Creek	Partially Supporting	Headwaters to Brushy Creek (Wilcox Co.)	7
Cobbs Creek	Not Supporting	Headwaters to Shoal Creek (DeKalb Co.)	7
Crooked Creek	Partially Supporting	Cypress Lake to Ocmulgee River (Dodge Co.)	4

STREAM	STATUS	LOCATION	MILES
Deep Creek	Partially Supporting	Headwaters to Echeconnee Creek (Crawford Co.)	7
Doolittle Creek	Not Supporting	Headwaters to South River (DeKalb Co.)	5
Dried Indian Creek	Partially Supporting	Headwaters to Yellow Creek (Newton Co.)	10
Flat Creek	Partially Supporting	~0.4 mi U/S of U.S. Hwy. 41 to Big Indian Creek (Houston Co.)	5
Folsom Creek	Partially Supporting	~0.2 mi D/S CR 33 to Ocmulgee River (Wilcox Co.)	9
Garner Creek	Partially Supporting	Headwaters to Yellow River (Gwinnett Co.)	4
Gum Swamp Creek	Partially Supporting	Reedy Creek to Ga. Hwy. 257 (Bleckley/Dodge Co.)	12
Horse Creek	Partially Supporting	Headwaters to Alligator Creek (Dodge/Telfair Co.)	17
House Creek	Partially Supporting	Headwaters to Haw Pond Creek (Wilcox Co.)	7
Intrenchment Creek	Not Supporting	Headwaters to South River, Atlanta (Fulton/DeKalb Co.)	6
Island Shoal Creek	Partially Supporting	Headwaters to Mackey Creek (Henry Co.)	5
Limestone Creek	Partially Supporting	Okeetuck Creek to Big Indian Creek (Houston Co.)	3
Little Suwannee Creek	Not Supporting	Lake Perrin to Yellow River (Gwinnett Co.)	3
Mossy Creek	Partially Supporting	Mule Creek to Lake Joy (Peach/Houston Co.)	8
Mountain Creek	Partially Supporting	Headwaters to Sewage Treatment Pond #2 (South of Monroe) (Walton Co.)	5
Otter Creek	Partially Supporting	~1.7 mi U/S Ga. 182 (Old River Rd.) to Ocmulgee River (Ben Hill Co.)	4
Shoal Creek	Not Supporting	Headwaters to South River (DeKalb Co.)	7
Snapping Shoals Creek	Not Supporting	Almand Branch to South River (Rockdale/Newton Co.)	10
South River	Not Supporting	Atlanta to Flakes Mill Road (Fulton/DeKalb Co.)	16
Sturgeon Creek	Partially Supporting	Dickson Mill Creek to Ocmulgee River (Ben Hill Co.)	6
Ten Mile Creek	Partially Supporting	~0.7 mi U/S Ga. Hwy. 257 to Bluff Creek (Pulaski Co.)	7
Tributary to Little Haynes Creek	Partially Supporting	Headwaters to Little Haynes Creek (Walton Co.)	2

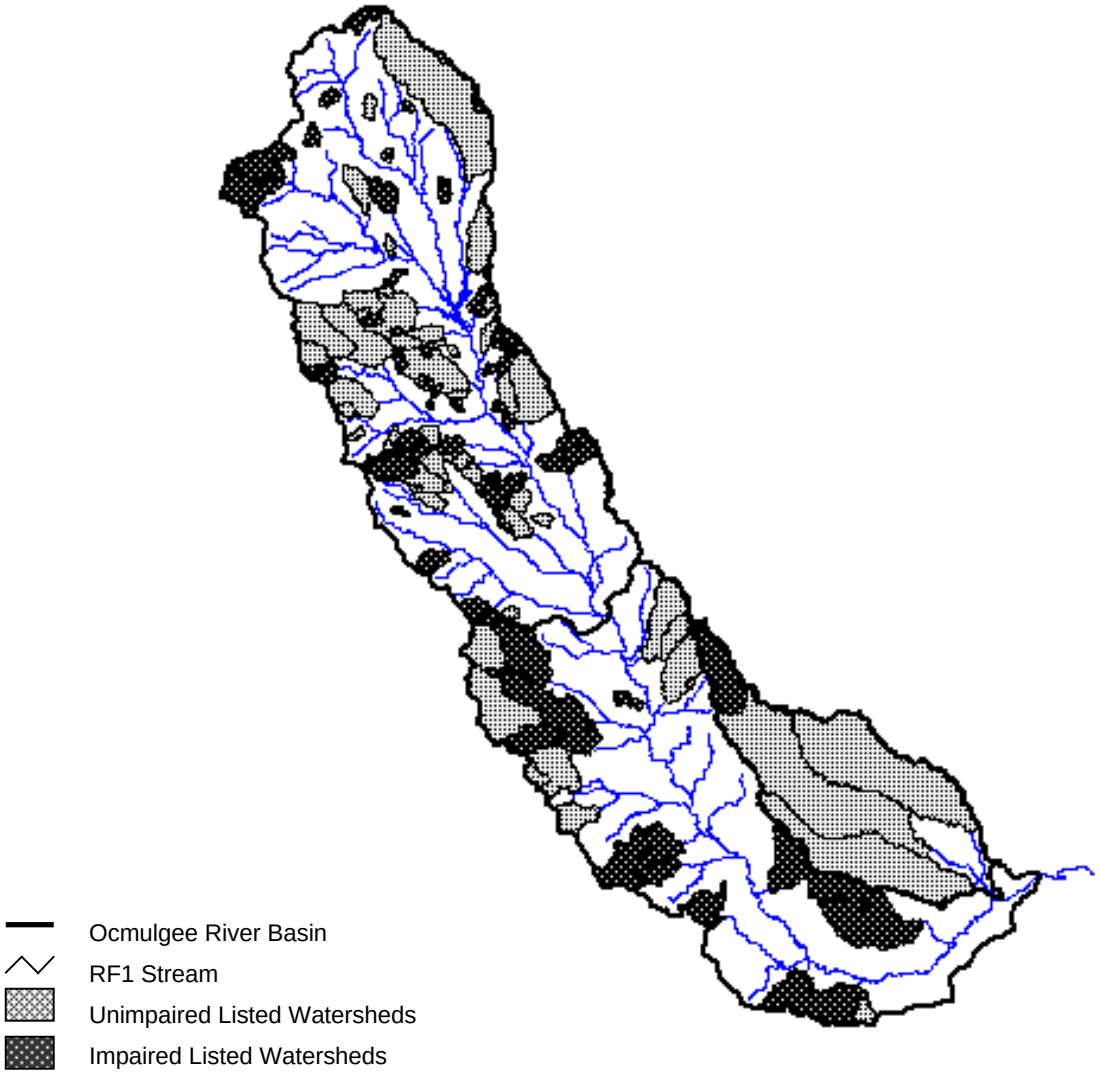

Figure 1. Impaired and Unimpaired Watersheds Monitored in the Ocmulgee River Basin

Dooly, Gwinnett, Henry, Houston, Jasper, Jones, Lamar, Laurens, Macon, Monroe, Newton, Peach, Rockdale, Spalding, Telfair, Twiggs, Walton, and Wheeler.

The land use characteristics of the Ocmulgee River Basin watersheds were determined using data from Georgia's National Land Cover Data (NLCD). This coverage is based on Landsat Thematic Mapper digital images developed in 2001. The classification is based on a modified Anderson level one and two system. Table 4 lists the land use distribution of the one hundred twenty-seven (127) watersheds WRD monitored between 1998 and 2003. The watersheds are grouped by those that are unimpaired, followed by those that are impaired. Table 5 lists the land use percentages for all the Ocmulgee River Basin watersheds monitored in a similar fashion. The data show that the watersheds are predominately forested with approximately 55.3 percent (ranging from 6.6 to 95.5 percent) in forest use. Agriculture is the next predominate land use at approximately 17.4%, consisting of approximately 3.8 percent row crops (ranging from 0.0 to 26.6 percent) and approximately 12.3 percent pastureland (ranging from 0.0 to 60.6 percent).
The soil characteristics of the Ocmulgee River Basin watersheds were determined using data from the State Soil Geographic (STATSGO) coverage. This coverage provides major soil type classifications. Table 6 lists the soil type distribution of the monitored watersheds.

1.3 Water Quality Standard

The water use classification for the impaired watersheds in the Ocmulgee River Basin is Fishing. The criterion violated is listed as Biota Impacted, which indicates that studies have shown a significant impact on fish. The potential cause(s) listed include urban runoff, nonpoint sources, and industrial facilities. The narrative standard exists to prevent objectionable conditions which interfere with legitimate water uses, as stated in Georgia's *Rules and Regulations for Water Quality Control*, Chapter 391-3-6-.03(5)(c):

> 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.

Table 4a. Land Use Distribution (Unimpaired Piedmont)

Area (acres)																
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Deciduous Shrubland**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Total**
Alcovy River	1,303.9	10,574.7	8,007.9	2,242.3	1,693.7	346.3	26,659.1	22,057.9	2,023.9	1,638.1	22,492.0	117.4	9,596.7	5,488.5	14.7	114,257.1
Bear Creek	228.2	956.0	83.0	8.9	164.3		5,657.5	3,034.0	541.3	61.6	7,564.0	129.2	2,001.0	892.9		21,322.0
Beaverdam Creek	80.3	685.8	169.7	17.1	52.7		2,799.4	829.5	330.9	7.3	351.6		341.8	82.1		5,748.3
Big Sandy Creek	240.6	1,865.2	366.5	187.5	197.9	80.5	10,582.1	10,595.8	1,597.0	581.1	4,495.8	2.7	3,461.2	976.9		35,230.8
Buck Creek	261.5	1,073.7	310.9	69.8	111.2	0.0	6,455.7	3,940.0	477.2	301.8	5,314.4	18.7	1,088.1	849.7	0.0	20,272.8
Chambliss Creek	20.0	244.0	116.5	103.6	13.6		1,032.8	892.9	157.0	43.1	782.8	1.8	136.8	3.8		3,548.6
Deer Creek	49.1	187.5	64.5	17.3	22.5	0.0	1,314.8	983.2	167.5	49.4	1,448.6	0.0	248.0	2.2	0.0	4,554.5
Douglas Creek	6.4	31.4	5.3		2.7		393.2	468.6	48.5	17.6	186.1		124.1	5.8		1,289.6
Falling Creek	232.8	1,585.2	17.3	0.0	115.4	27.4	17,193.6	15,924.5	5,292.8	72.9	933.4	0.0	2,152.7	2,311.3	9.1	45,868.4
Freeman Creek	23.1	181.0	76.9	6.2	11.6		556.4	439.2	13.1	64.0	458.1		200.8	34.0		2,064.6
Herds Creek	8.9	87.2	0.0	0.0	24.2	0.0	995.0	825.9	110.5	8.0	448.3	0.0	541.7	52.5	0.9	3,103.2
Honey Creek	102.3	1,232.5	1,062.3	232.8	32.0	338.7	2,662.0	3,019.8	89.6	171.2	1,151.7	3.3	419.2	199.5		10,717.0
Kinnard Creek	13.3	184.6	4.7	0.9	5.1		2,074.9	1,412.6	299.8	5.6	581.3		371.4	69.4		5,023.5
Lee Creek		36.9			23.1		700.7	617.1	127.0	32.9	182.4		233.1	33.8		1,987.0
Little Buck Creek	32.9	130.5	40.5	3.3	18.0		893.8	576.4	33.8	38.9	883.3		92.1	166.8		2,910.4
Little Deer Creek D/S DOT	42.7	107.2	48.5	32.9	13.6	109.0	925.4	804.6	118.8	31.6	256.6	0.0	241.5	97.6	0.0	2,829.9
Little Falling Creek	104.1	420.5	8.7	0.0	25.6	0.0	4,174.6	4,268.5	1,256.3	30.7	291.5	0.0	583.5	905.1	9.1	12,078.3
Long Branch	16.5	34.5			0.9		201.5	271.3	25.1	23.6	153.7		111.0	14.2		852.2
No Business Creek	45.1	965.4	836.6	340.7	78.1		446.8	593.3	10.0	8.2	202.8		24.9	7.6		3,559.5
Panther Creek	15.8	58.0	9.8	13.6	11.1		274.0	205.3	30.7	14.5	270.0	1.1	94.1	28.9		1,026.8
Peeksville Creek	18.9	76.1	37.6	0.9	7.6		583.1	383.2	47.6	27.6	540.2	1.6	191.5	15.1		1,930.8
Prairie Creek	15.1	91.8	33.4	4.7	12.5	24.0	341.1	394.7	54.3	16.7	501.5	40.7	161.9	64.9		1,757.3
Rock Creek	28.9	57.8	20.5	24.2		193.7	849.7	665.4	497.5	20.0	165.5	0.0	365.4	30.9	6.0	2,925.5

Area (acres)																
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Deciduous Shrubland**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Total**
Rocky Creek - Bibb	352.3	2,111.3	808.4	208.2	87.2	25.1	4,436.0	2,354.2	703.4	27.6	1,377.5	0.0	858.9	535.1	0.0	13,885.0
Rocky Creek - Monroe	84.5	719.4	96.1	5.6	86.7	0.9	5,884.4	4,514.9	633.8	253.3	1,870.3	2.4	1,460.6	440.5	0.0	16,053.4
Sabbath Creek	11.6	1,055.9	392.5	112.1	5.1		588.0	257.5	87.2		48.9		33.6	27.6		2,619.9
Swan Creek U/S	5.8	48.5	7.6	1.6	0.9		315.6	127.4	30.7	16.5	508.4		43.6	22.0		1,128.4
Swan Creek D/S	6.9	89.4	11.8	2.4	6.9	0.0	839.3	559.5	105.9	119.4	626.5	0.0	517.5	104.1	0.0	2,989.5
Tobesofkee Cr upper	212.6	979.8	341.4	125.4	77.8	295.6	7,729.1	6,687.8	990.1	636.2	5,181.4	23.1	2,165.8	752.6	0.0	26,198.7
Tobesofkee Cr lower	201.0	996.1	115.6	34.9	61.4	234.4	4,379.9	5,621.7	790.6	320.9	2,831.7	16.7	1,057.5	206.8	0.0	16,869.2
Towaliga River upper	1,319.9	1,572.1	627.4	45.6	143.4	41.4	10,341.9	9,022.9	504.6	508.2	8,315.0	60.7	1,975.0	1,315.9	0.0	35,793.8
Towaliga River lower	1,827.1	3,774.8	1,893.8	702.5	492.4	214.4	18,336.2	14,914.6	1,024.1	869.5	15,000.0	102.7	4,377.2	2,778.1	11.6	66,319.1
Town Branch U/S Jackson WPCP	6.0	266.4	134.1	50.7	11.8		268.6	416.8	44.3	12.0	72.9		47.4	27.8		1,358.8
Troublesome Creek	127.9	371.6	198.8	20.7	37.1	0.0	2,922.4	2,684.4	138.1	123.9	1,405.0	11.3	512.2	239.3	0.0	8,792.7
Tussahaw Creek Trib	11.1	82.1	25.4	8.9	3.6		359.6	297.8	21.8	10.0	664.5	2.4	94.7	62.0		1,643.9
Tussahaw Creek upper	111.0	844.4	446.6	266.6	58.5	30.0	2,599.0	2,379.8	159.7	130.1	3,510.6	33.8	742.6	505.0	0.0	11,817.6
Tussahaw Creek lower	226.6	1,948.3	661.6	315.6	139.7	72.9	5,662.4	6,071.8	680.1	310.9	7,595.4	57.8	1,562.9	674.9	0.0	25,981.0
Yellow Creek	59.4	132.3	2.2	0.0	28.2	0.0	1,583.3	1,534.3	213.3	103.6	1,198.5	0.0	257.7	180.4	0.0	5,293.3
Yellow Water Creek Trib D/S	1.1	50.3	48.5	11.3	2.2	0.0	76.9	112.1	11.8	4.0	54.9	0.9	21.1	1.6	0.0	396.7
Yellow Water Creek U/S	31.8	532.8	199.3	85.6	101.4		1,168.4	1,083.7	270.9	68.1	1,630.3	8.7	314.5	245.1		5,740.5
Yellow Water Creek D/S	31.8	537.7	200.6	85.6	101.4	0.0	1,171.3	1,083.7	271.3	68.1	1,648.8	8.7	316.9	245.1	0.0	5,770.9
Yellow Water Creek lower	57.2	597.8	187.0	92.5	98.3	0.0	1,524.0	1,102.1	216.2	102.7	2,471.6	6.7	418.5	207.3	0.0	7,081.9

Table 4b. Land Use Distribution (Unimpaired Southeastern Plain)

Area (acres)																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Deciduous Forest	Evergreen Forest	Mixed Forest	Deciduous Shrubland	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Total
Alligator Creek	526.4	5,328.8	466.1	68.5		71.6	12,114.3	58,319.2	11,761.6	694.7	8,999.3	14,073.5	13,490.2	13,965.5	752.6	140,632.4
Big Creek	81.4	972.9	172.1	110.5	0.0	3.1	5,934.0	4,887.6	1,125.1	69.8	3,141.0	6,359.4	1,493.3	1,784.4	139.9	26,274.6
Big Indian Creek	213.5	2,348.9	616.9	145.7			9,289.5	6,473.2	2,387.5	177.9	4,744.8	5,606.2	4,987.7	1,943.4	177.2	39,112.5
Little Shellstone Creek		8.0					256.4	183.5	49.6	12.2	13.8	8.2	193.0	3.1	3.1	731.0
Little Sturgeon Creek	14.9	227.3	9.8	2.2			212.4	2,768.3	251.1	154.1	220.2	398.7	839.3	380.1	28.9	5,507.2
Mossy Creek	4.0	958.9	120.1	35.6	3.1		5,304.8	2,754.7	944.7	143.7	3,313.3	3,263.5	2,158.3	704.7	108.3	19,817.8
Richland Creek	10.9	397.6	139.7	18.5			3,852.6	4,522.9	832.6	91.0	483.2	553.5	597.6	416.1	23.4	11,939.5
Savage Creek	33.4	877.3	254.0	27.4	2.7		12,146.1	14,404.9	3,256.4	373.8	879.3	754.1	2,397.6	2,745.1	88.5	38,240.5
Shellstone Creek	72.9	711.0	74.9	1.1	1.6	2.2	6,685.0	9,240.4	2,570.1	193.9	1,026.3	3,450.3	1,425.3	2,110.7	125.6	27,691.4
South Prong Creek	3.6	585.1	307.6	164.3		7.8	563.5	164.1	100.5	38.9	918.7	6,285.3	499.0	2,477.4	426.5	12,542.4
Sugar Creek	621.8	5,312.6	1,096.8	321.1		67.6	10,547.6	45,578.4	7,943.2	538.6	7,438.8	9,949.4	10,182.4	12,270.0	664.7	112,533.1
Whitewater Creek		64.0	16.5				1,192.9	252.6	182.6	23.1	262.0	163.2	373.8	120.1	6.0	2,656.9

Table 4c. Land Use Distribution (Impaired Piedmont)

Area (acres)																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Deciduous Forest	Evergreen Forest	Mixed Forest	Deciduous Shrubland	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Total
Barbershela Creek	53.2	1,605.6	1,016.3	179.2	17.6	1.8	568.9	584.9	14.7	7.1	21.3		5.8	29.4		4,105.7
Big Sandy Creek	12.5	102.7	0.4	1.3	22.5		760.6	941.6	111.6	51.4	998.5	0.9	151.0	20.7		3,175.7
Brown Branch	13.8	149.7	59.6	11.1	24.0		634.0	415.4	64.7	8.7	1,421.7	5.6	120.8	94.1		3,023.1
Butlers Creek	5.3	73.6	0.9		1.6		1,141.7	1,163.8	494.6	1.8	28.9		30.9	48.3		2,991.3
Cabin Creek	148.3	957.6	814.2	238.0	10.2		1,889.0	1,541.8	227.1	83.8	1,442.8	1.6	242.2	71.6	0.0	7,668.1
Calaparchee Creek	49.8	180.1	91.0	32.7	12.5		758.1	307.1	54.5	14.2	537.3		310.7	102.7		2,450.7
Carr Branch	7.8	119.9	66.5	0.4	7.3		546.2	462.1	38.9	19.3	232.6	1.3	111.9	23.6		1,637.9
Cobbs Creek	2.2	841.5	552.0	162.6			48.5	269.5	4.4	5.8		1.3	0.9			1,888.7
Cole Creek		13.8	3.8		3.1		317.3	126.8	16.0	5.1	321.8	0.9	44.9	44.9		898.4
Doolittle Creek	22.7	1,749.5	1,151.1	442.3	18.0		298.9	580.7	29.8	3.3	60.5		7.3	1.1		4,365.2
Dried Indian Creek	66.3	657.2	433.9	356.7	17.3		465.7	800.6	155.9	54.3	717.0	8.9	171.0	48.0		3,952.7
Eightmile Creek	7.3	32.5			6.7		171.7	169.7	22.0	13.1	101.9		28.9	3.1		556.9
Garner Creek	11.3	1,105.3	854.9	126.8	3.8		307.1	658.5	8.7	8.9	114.8	36.7	13.8			3,250.4
Gladesville Creek	34.9	135.2	7.1		14.0		1,148.9	1,154.2	381.6	28.9	199.7		312.0	132.1	7.6	3,556.2
Hansford Branch		14.5					209.0	280.9	56.7		2.9		4.4	3.8		572.2
Harmon Pye Branch		68.1	2.4				756.8	616.5	101.0		16.0		110.3	46.5		1,717.5
Herds Creek	19.1	291.1	1.8		40.3		3,307.6	2,300.8	421.9	28.2	824.2		1,364.8	248.6	0.9	8,849.2
Intrenchment Creek	6.4	1,487.1	2,024.4	1,788.0	22.9		520.2	294.4	48.0	9.8	92.7		44.5	2.7		6,341.1
Island Shoal Creek	9.8	95.4	14.2	6.7	46.9		679.2	502.8	48.0	25.8	878.7	6.0	145.0	100.1		2,558.6
Little Chehaw	28.5	103.2	4.4	0.7	4.2		797.9	382.3	142.3	3.1	260.9	3.1	119.4	52.9		1,903.0
Little Deer Creek	50.0	145.7	68.7	50.0	36.2	109.0	1,823.8	1,229.8	351.6	34.0	286.7	0.0	387.2	176.4	0.0	4,749.1
Little Deer Creek trib	29.1	29.6	14.0	12.2	4.9	109.0	187.0	208.6		21.8	24.9		48.7	7.1		697.0
Little Suwanee Creek	105.4	1,284.1	1,756.9	420.1	26.5		1,005.9	760.1	7.3	14.5	277.1		76.3	143.0		5,877.0
Long Branch		30.0			2.9		750.8	461.5	143.4	2.0	18.0		198.8	5.1		1,612.5

Area (acres)																
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Deciduous Shrubland**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Total**
Malholms Creek	17.8	63.6	7.8	2.0	19.1		311.8	292.7	58.3	29.8	511.0	0.9	61.4	10.7		1,386.8
Mill Dam Creek		14.5			2.4		350.5	493.7	51.4	8.5	162.3		172.3	21.3		1,276.9
Mountain Creek	9.8	579.3	311.6	153.7	33.8		678.9	329.8	65.6	20.7	366.5		258.2	54.3		2,862.1
Phinazee Creek	14.2	67.6	8.9	0.9	3.1		669.6	266.0	19.3	56.5	272.0		373.2	33.1		1,784.4
Red Creek	20.5	353.2	67.8	4.9	58.3	0.9	2,700.7	2,542.1	260.6	155.4	570.6	0.4	769.2	191.5	0.0	7,696.1
Rock Creek	5.6	6.2	2.2	5.8		89.2	255.5	169.5	104.1	11.6	57.4		132.1	3.6	4.9	847.5
Rocky Creek - Butts	13.1	71.2	1.6		6.7		776.6	481.0	111.6	83.4	348.7		241.1	9.8		2,144.7
Rocky Creek - Monroe	49.6	181.2	24.0	0.7	24.7		1,258.3	1,122.6	166.3	46.7	764.6	2.0	275.5	148.1		4,064.3
Rocky Creek - Bibb	25.4	369.4	83.8	3.3	25.4		1,141.5	1,108.2	246.6	5.6	286.9		225.9	217.9		3,739.9
Rum Creek	31.1	503.7	189.5	123.2	33.6		2,050.2	2,025.9	384.5	116.8	891.1		496.8	127.9		6,974.3
Sand Branch		17.1			1.3		216.4	395.4	50.0	1.6	13.6		20.2	0.9		716.5
Scoggins Creek	10.0	106.3	2.7		14.5		728.5	605.8	236.4	5.6	69.8		337.4	2.2		2,119.1
Shoal Creek	2.4	1,264.5	561.3	237.1			215.0	293.1	35.1	2.4	6.4			2.2		2,619.7
Snapping Shoals Creek	85.4	1,825.1	2,337.3	1,551.1	98.3	83.0	1,099.5	2,033.7	137.4	87.0	827.3	2.7	277.8	285.5		10,731.1
South River	77.8	9,456.1	10,050.3	7,444.6	70.5	0.0	3,729.2	3,516.8	453.9	46.9	421.6	0.0	187.2	387.2	0.0	35,842.3
Third Branch		30.0			2.9		750.8	461.5	143.4	2.0	18.0		198.8	5.1		1,612.5
Tobesofkee Creek	76.7	798.4	335.8	125.4	46.9	104.1	4,883.6	3,666.9	549.3	430.1	3,961.6	22.5	1,555.2	595.8		17,152.3
Trib to Little Haynes Cr	10.0	202.8	112.3	3.6	19.1	8.0	241.1	482.4	8.0	38.5	221.9		47.6	4.2		1,399.5
Tobler Creek	17.8	280.9	68.1	12.5	45.4	1.8	2,302.4	1,877.2	385.4	40.3	245.5	1.1	544.4	72.3		5,894.8
Town Branch	6.2	226.2	157.2	104.1	2.9		127.0	151.2	64.3	6.7	102.7		17.6	5.6	0.0	971.6
Trib to Tobesofkee Cr	1.3	72.3	45.8	19.1	11.6		134.3	74.3	18.2	11.6	171.9	0.7	39.4			600.4
Walnut Creek - Jones	115.6	801.3	90.7	37.8	112.1	197.7	4,615.6	4,541.6	967.8	163.5	2,494.3	3.6	2,160.7	736.3	2.0	17,040.6
Walnut Creek - Crawford	53.8	223.7	8.7	1.8	31.6	2.4	2,413.3	3,175.5	398.7	205.0	737.7		715.6	147.0		8,114.9
White Creek	1.8	40.7	1.8		51.6		571.1	509.3	62.7	56.9	210.4	0.4	190.6	27.1		1,724.4
Wise Creek	28.5	278.2	23.4	1.6	14.0		2,603.9	2,402.7	432.3	14.5	516.6	0.9	587.5	153.0	0.0	7,057.0
Wood Creek	11.3	61.6		6.7	6.4		296.2	226.2	34.0	11.3	306.9	0.9	13.3	27.4		1,002.3

Table 4d. Land Use Distribution (Impaired Southeastern Plain)

Area (acres)																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Deciduous Forest	Evergreen Forest	Mixed Forest	Deciduous Shrubland	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Total
Bay Creek		324.0	181.2	187.2			278.2	88.1	55.2	4.9	33.1	89.4	68.1	3.1		1,312.5
Big Grocery Creek		13.6					997.2	1,404.6	1,079.7	1.1	2.2		15.6	402.7		3,916.7
Big Horse Creek	276.2	2,553.7	244.4	32.9	0.0	142.6	6,629.6	24,559.1	4,992.6	432.5	5,845.4	9,744.6	8,593.3	7,650.3	582.4	72,279.5
Big Indian Creek	382.1	5,931.9	1,971.7	1,172.4	0.0	11.6	19,100.1	14,241.9	5,609.5	430.1	11,358.0	13,636.8	10,187.5	6,501.7	346.5	90,881.8
Bluff Creek	52.3	1,409.9	248.0	14.2	0.0	44.5	3,875.8	10,029.4	1,908.7	191.9	2,046.4	13,931.9	2,563.2	4,233.8	263.5	40,813.6
Cedar Creek	26.2	292.2	85.2	2.9		13.6	652.9	1,675.9	320.2	12.7	564.0	2,639.5	493.3	684.5	58.3	7,521.3
Crooked Creek	127.0	850.9	61.6	14.7		11.8	2,420.0	8,274.6	1,840.9	109.6	1,796.4	3,841.1	2,737.8	2,265.5	171.9	24,523.7
Deep Creek	35.8	272.9	44.3	0.0	2.7	0.0	3,031.4	2,250.1	750.3	121.0	863.5	232.8	1,268.1	693.2	48.3	9,614.2
Flat Creek	125.6	685.8	63.8	61.2		2.4	3,619.8	3,064.5	1,095.7	104.5	1,714.2	2,748.3	1,545.8	960.3	62.3	15,854.2
Folsom Creek	52.3	420.3	63.4	9.3		23.4	844.4	5,574.8	686.5	89.6	852.2	1,891.2	724.5	667.6	78.9	11,978.4
Gum Swamp Creek	132.3	1,263.4	189.0	20.7		45.1	4,970.3	6,420.8	2,081.5	82.3	3,614.2	8,167.6	2,407.6	4,169.3	279.3	33,843.5
Hartley Branch	19.3	86.5	15.3		1.6		981.8	403.0	352.9	22.9	171.9	83.2	248.2	112.1	16.9	2,515.6
Horse Creek	125.6	938.0	128.1	26.0	0.0	1.3	1,958.8	5,740.3	1,353.2	34.0	2,380.7	3,775.2	1,862.3	2,128.5	139.9	20,591.9
House Creek	13.8	154.3	29.8			1.6	264.2	832.8	141.9	5.3	273.5	435.2	169.5	43.8	19.6	2,385.3
Limestone Creek	16.9	225.1	54.3	11.8		118.5	3,930.0	2,579.5	1,228.9	90.1	597.1	407.0	962.5	860.2	46.0	11,127.8
Mossy Creek	50.0	2,440.5	568.9	119.9	6.4	0.0	12,596.0	5,834.3	2,281.5	278.0	9,017.8	11,205.2	5,255.0	2,911.9	252.0	52,817.3
Otter Creek	176.4	1,188.7	189.7	30.9		14.2	1,283.8	9,030.2	1,119.7	61.8	1,648.1	1,555.8	2,102.9	1,645.7	231.7	20,279.7
Rocky Creek - Jasper	3.3	32.5			4.9		327.6	115.0	16.0	4.2	308.5	0.4	152.3	18.9		983.6
Sturgeon Creek	139.9	1,232.7	75.4	6.4	0.0	7.6	1,686.1	16,091.7	1,593.0	520.6	1,381.0	1,970.8	4,115.0	2,930.2	209.9	31,960.3
Ten Mile Creek	29.6	658.5	83.8	10.2		24.7	2,387.5	7,564.0	1,420.2	135.0	990.1	6,154.1	1,773.8	2,395.1	125.4	23,752.0

Table 5a. Land Use Percentages (Unimpaired Piedmont)

	Percent Total Land Use														
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands
Alcovy River	1.14%	9.26%	7.01%	1.96%	1.48%	0.30%	23.33%	19.31%	1.77%	1.43%	19.69%	0.10%	8.40%	4.80%	0.01%
Bear Creek	1.07%	4.48%	0.39%	0.04%	0.77%	0.00%	26.53%	14.23%	2.54%	0.29%	35.48%	0.61%	9.38%	4.19%	0.00%
Beaverdam Creek	1.40%	11.93%	2.95%	0.30%	0.92%	0.00%	48.70%	14.43%	5.76%	0.13%	6.12%	0.00%	5.95%	1.43%	0.00%
Big Sandy Creek	0.68%	5.29%	1.04%	0.53%	0.56%	0.23%	30.04%	30.08%	4.53%	1.65%	12.76%	0.01%	9.82%	2.77%	0.00%
Buck Creek	1.29%	5.30%	1.53%	0.34%	0.55%	0.00%	31.84%	19.44%	2.35%	1.49%	26.21%	0.09%	5.37%	4.19%	0.00%
Chambliss Creek	0.56%	6.87%	3.28%	2.92%	0.38%	0.00%	29.10%	25.16%	4.42%	1.22%	22.06%	0.05%	3.85%	0.11%	0.00%
Deer Creek	1.08%	4.12%	1.42%	0.38%	0.49%	0.00%	28.87%	21.59%	3.68%	1.08%	31.81%	0.00%	5.44%	0.05%	0.00%
Douglas Creek	0.50%	2.43%	0.41%	0.00%	0.21%	0.00%	30.49%	36.33%	3.76%	1.36%	14.43%	0.00%	9.62%	0.45%	0.00%
Falling Creek	0.51%	3.46%	0.04%	0.00%	0.25%	0.06%	37.48%	34.72%	11.54%	0.16%	2.03%	0.00%	4.69%	5.04%	0.02%
Freeman Creek	1.12%	8.77%	3.73%	0.30%	0.56%	0.00%	26.95%	21.27%	0.64%	3.10%	22.19%	0.00%	9.73%	1.65%	0.00%
Herds Creek	0.29%	2.81%	0.00%	0.00%	0.78%	0.00%	32.06%	26.62%	3.56%	0.26%	14.45%	0.00%	17.46%	1.69%	0.03%
Honey Creek	0.95%	11.50%	9.91%	2.17%	0.30%	3.16%	24.84%	28.18%	0.84%	1.60%	10.75%	0.03%	3.91%	1.86%	0.00%
Kinnard Creek	0.27%	3.67%	0.09%	0.02%	0.10%	0.00%	41.30%	28.12%	5.97%	0.11%	11.57%	0.00%	7.39%	1.38%	0.00%
Lee Creek	0.00%	1.86%	0.00%	0.00%	1.16%	0.00%	35.27%	31.06%	6.39%	1.66%	9.18%	0.00%	11.73%	1.70%	0.00%
Little Buck Creek	1.13%	4.49%	1.39%	0.11%	0.62%	0.00%	30.71%	19.81%	1.16%	1.34%	30.35%	0.00%	3.16%	5.73%	0.00%
Little Deer Creek D/S DOT	1.51%	3.79%	1.71%	1.16%	0.48%	3.85%	32.70%	28.43%	4.20%	1.12%	9.07%	0.00%	8.53%	3.45%	0.00%
Little Falling Creek	0.86%	3.48%	0.07%	0.00%	0.21%	0.00%	34.56%	35.34%	10.40%	0.25%	2.41%	0.00%	4.83%	7.49%	0.08%
Long Branch	1.93%	4.04%	0.00%	0.00%	0.10%	0.00%	23.64%	31.84%	2.95%	2.77%	18.03%	0.00%	13.02%	1.67%	0.00%
No Business Creek	1.27%	27.12%	23.50%	9.57%	2.19%	0.00%	12.55%	16.67%	0.28%	0.23%	5.70%	0.00%	0.70%	0.21%	0.00%
Panther Creek	1.54%	5.65%	0.95%	1.32%	1.08%	0.00%	26.68%	19.99%	2.99%	1.41%	26.29%	0.11%	9.16%	2.82%	0.00%
Peeksville Creek	0.98%	3.94%	1.95%	0.05%	0.39%	0.00%	30.20%	19.85%	2.46%	1.43%	27.98%	0.08%	9.92%	0.78%	0.00%
Prairie Creek	0.86%	5.23%	1.90%	0.27%	0.71%	1.37%	19.41%	22.46%	3.09%	0.95%	28.54%	2.32%	9.21%	3.70%	0.00%
Rock Creek	0.99%	1.98%	0.70%	0.83%	0.00%	6.62%	29.05%	22.74%	17.00%	0.68%	5.66%	0.00%	12.49%	1.06%	0.21%
Rocky Creek - Bibb	2.54%	15.21%	5.82%	1.50%	0.63%	0.18%	31.95%	16.95%	5.07%	0.20%	9.92%	0.00%	6.19%	3.85%	0.00%

Percent Total Land Use																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands
Rocky Creek - Monroe	0.53%	4.48%	0.60%	0.03%	0.54%	0.01%	36.65%	28.12%	3.95%	1.58%	11.65%	0.02%	9.10%	2.74%	0.00%
Sabbath Creek	0.44%	40.30%	14.98%	4.28%	0.20%	0.00%	22.44%	9.83%	3.33%	0.00%	1.87%	0.00%	1.28%	1.05%	0.00%
Swan Creek U/S	0.51%	4.30%	0.67%	0.14%	0.08%	0.00%	27.97%	11.29%	2.72%	1.46%	45.05%	0.00%	3.86%	1.95%	0.00%
Swan Creek D/S	0.23%	2.99%	0.39%	0.08%	0.23%	0.00%	28.07%	18.72%	3.54%	3.99%	20.96%	0.00%	17.31%	3.48%	0.00%
Tobesofkee Creek	0.81%	3.74%	1.30%	0.48%	0.30%	1.13%	29.50%	25.53%	3.78%	2.43%	19.78%	0.09%	8.27%	2.87%	0.00%
Tobesofkee Creek lower	1.19%	5.90%	0.69%	0.21%	0.36%	1.39%	25.96%	33.33%	4.69%	1.90%	16.79%	0.10%	6.27%	1.23%	0.00%
Towaliga River upper	3.69%	4.39%	1.75%	0.13%	0.40%	0.12%	28.89%	25.21%	1.41%	1.42%	23.23%	0.17%	5.52%	3.68%	0.00%
Towaliga River lower	2.76%	5.69%	2.86%	1.06%	0.74%	0.32%	27.65%	22.49%	1.54%	1.31%	22.62%	0.15%	6.60%	4.19%	0.02%
Town Branch U/S Jackson	0.44%	19.61%	9.87%	3.73%	0.87%	0.00%	19.77%	30.67%	3.26%	0.88%	5.37%	0.00%	3.49%	2.05%	0.00%
Troublesome Creek	1.45%	4.23%	2.26%	0.24%	0.42%	0.00%	33.24%	30.53%	1.57%	1.41%	15.98%	0.13%	5.82%	2.72%	0.00%
Tussahaw Creek Trib	0.68%	4.99%	1.54%	0.54%	0.22%	0.00%	21.88%	18.11%	1.33%	0.61%	40.42%	0.15%	5.76%	3.77%	0.00%
Tussahaw Creek upper	0.94%	7.15%	3.78%	2.26%	0.49%	0.25%	21.99%	20.14%	1.35%	1.10%	29.71%	0.29%	6.28%	4.27%	0.00%
Tussahaw Creek lower	0.87%	7.50%	2.55%	1.21%	0.54%	0.28%	21.79%	23.37%	2.62%	1.20%	29.23%	0.22%	6.02%	2.60%	0.00%
Yellow Creek	1.12%	2.50%	0.04%	0.00%	0.53%	0.00%	29.91%	28.99%	4.03%	1.96%	22.64%	0.00%	4.87%	3.41%	0.00%
Yellow Water Creek Trib D/S	0.28%	12.67%	12.22%	2.86%	0.56%	0.00%	19.39%	28.25%	2.97%	1.01%	13.85%	0.22%	5.33%	0.39%	0.00%
Yellow Water Creek U/S	0.55%	9.28%	3.47%	1.49%	1.77%	0.00%	20.35%	18.88%	4.72%	1.19%	28.40%	0.15%	5.48%	4.27%	0.00%
Yellow Water Creek D/S	0.55%	9.32%	3.48%	1.48%	1.76%	0.00%	20.30%	18.78%	4.70%	1.18%	28.57%	0.15%	5.49%	4.25%	0.00%
Yellow Water Creek lower	0.81%	8.44%	2.64%	1.31%	1.39%	0.00%	21.52%	15.56%	3.05%	1.45%	34.90%	0.09%	5.91%	2.93%	0.00%

Table 5b. Land Use Percentages (Unimpaired Southeastern Plains)

	Percent Total Land Use														
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**
Alligator Creek	0.37%	3.79%	0.33%	0.05%	0.00%	0.05%	8.61%	41.47%	8.36%	0.49%	6.40%	10.01%	9.59%	9.93%	0.54%
Big Creek - Houston	0.03%	2.79%	0.08%	0.00%	0.00%	0.00%	23.98%	21.47%	4.23%	0.25%	7.18%	27.64%	4.59%	7.32%	0.44%
Big Creek	0.31%	3.70%	0.66%	0.42%	0.00%	0.01%	22.58%	18.60%	4.28%	0.27%	11.95%	24.20%	5.68%	6.79%	0.53%
Big Indian Creek	0.55%	6.01%	1.58%	0.37%	0.00%	0.00%	23.75%	16.55%	6.10%	0.45%	12.13%	14.33%	12.75%	4.97%	0.45%
Little Shellstone Creek	0.00%	1.10%	0.00%	0.00%	0.00%	0.00%	35.08%	25.10%	6.78%	1.67%	1.89%	1.13%	26.41%	0.43%	0.43%
Little Sturgeon Creek	0.27%	4.13%	0.18%	0.04%	0.00%	0.00%	3.86%	50.27%	4.56%	2.80%	4.00%	7.24%	15.24%	6.90%	0.52%
Mossy Creek	0.02%	4.84%	0.61%	0.18%	0.02%	0.00%	26.77%	13.90%	4.77%	0.72%	16.72%	16.47%	10.89%	3.56%	0.55%
Richland Creek	0.09%	3.33%	1.17%	0.15%	0.00%	0.00%	32.27%	37.88%	6.97%	0.76%	4.05%	4.64%	5.00%	3.48%	0.20%
Savage Creek	0.09%	2.29%	0.66%	0.07%	0.01%	0.00%	31.76%	37.67%	8.52%	0.98%	2.30%	1.97%	6.27%	7.18%	0.23%
Shellstone Creek	0.26%	2.57%	0.27%	0.00%	0.01%	0.01%	24.14%	33.37%	9.28%	0.70%	3.71%	12.46%	5.15%	7.62%	0.45%
South Prong Creek	0.03%	4.66%	2.45%	1.31%	0.00%	0.06%	4.49%	1.31%	0.80%	0.31%	7.32%	50.11%	3.98%	19.75%	3.40%
Sugar Creek	0.55%	4.72%	0.97%	0.29%	0.00%	0.06%	9.37%	40.50%	7.06%	0.48%	6.61%	8.84%	9.05%	10.90%	0.59%
Whitewater Creek	0.00%	2.41%	0.62%	0.00%	0.00%	0.00%	44.90%	9.51%	6.87%	0.87%	9.86%	6.14%	14.07%	4.52%	0.23%

Table 5c. Land Use Percentages (Impaired Piedmont)

Percent Total Land Use															
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**
Barbershela Creek	1.29%	39.11%	24.75%	4.37%	0.43%	0.04%	13.86%	14.25%	0.36%	0.17%	0.52%	0.00%	0.14%	0.71%	0.00%
Big Sandy Creek	0.39%	3.24%	0.01%	0.04%	0.71%	0.00%	23.95%	29.65%	3.52%	1.62%	31.44%	0.03%	4.75%	0.65%	0.00%
Brown Branch	0.46%	4.95%	1.97%	0.37%	0.79%	0.00%	20.97%	13.74%	2.14%	0.29%	47.03%	0.18%	3.99%	3.11%	0.00%
Butlers Creek	0.18%	2.46%	0.03%	0.00%	0.05%	0.00%	38.17%	38.90%	16.53%	0.06%	0.97%	0.00%	1.03%	1.61%	0.00%
Cabin Creek	1.93%	12.49%	10.62%	3.10%	0.13%	0.00%	24.63%	20.11%	2.96%	1.09%	18.82%	0.02%	3.16%	0.93%	0.00%
Calaparchee Creek	2.03%	7.35%	3.71%	1.33%	0.51%	0.00%	30.93%	12.53%	2.22%	0.58%	21.92%	0.00%	12.68%	4.19%	0.00%
Carr Branch	0.48%	7.32%	4.06%	0.03%	0.45%	0.00%	33.35%	28.21%	2.38%	1.18%	14.20%	0.08%	6.83%	1.44%	0.00%
Cobbs Creek	0.12%	44.55%	29.22%	8.61%	0.00%	0.00%	2.57%	14.27%	0.24%	0.31%	0.00%	0.07%	0.05%	0.00%	0.00%
Cole Creek	0.00%	1.53%	0.42%	0.00%	0.35%	0.00%	35.32%	14.11%	1.78%	0.57%	35.82%	0.10%	5.00%	5.00%	0.00%
Doolittle Creek	0.52%	40.08%	26.37%	10.13%	0.41%	0.00%	6.85%	13.30%	0.68%	0.08%	1.39%	0.00%	0.17%	0.03%	0.00%
Dried Indian Creek	1.68%	16.63%	10.98%	9.02%	0.44%	0.00%	11.78%	20.25%	3.94%	1.37%	18.14%	0.23%	4.33%	1.22%	0.00%
Eightmile Creek	1.32%	5.83%	0.00%	0.00%	1.20%	0.00%	30.83%	30.47%	3.95%	2.36%	18.29%	0.00%	5.19%	0.56%	0.00%
Garner Creek	0.35%	34.00%	26.30%	3.90%	0.12%	0.00%	9.45%	20.26%	0.27%	0.27%	3.53%	1.13%	0.42%	0.00%	0.00%
Gladesville Creek	0.98%	3.80%	0.20%	0.00%	0.39%	0.00%	32.31%	32.46%	10.73%	0.81%	5.62%	0.00%	8.77%	3.71%	0.21%
Hansford Branch	0.00%	2.53%	0.00%	0.00%	0.00%	0.00%	36.53%	49.09%	9.91%	0.00%	0.51%	0.00%	0.78%	0.66%	0.00%
Harmon Pye Branch	0.00%	3.96%	0.14%	0.00%	0.00%	0.00%	44.06%	35.89%	5.88%	0.00%	0.93%	0.00%	6.42%	2.71%	0.00%
Herds Creek	0.22%	3.29%	0.02%	0.00%	0.45%	0.00%	37.38%	26.00%	4.77%	0.32%	9.31%	0.00%	15.42%	2.81%	0.01%
Intrenchment Creek	0.10%	23.45%	31.92%	28.20%	0.36%	0.00%	8.20%	4.64%	0.76%	0.15%	1.46%	0.00%	0.70%	0.04%	0.00%
Island Shoal Creek	0.38%	3.73%	0.56%	0.26%	1.83%	0.00%	26.54%	19.65%	1.88%	1.01%	34.34%	0.23%	5.67%	3.91%	0.00%
Little Chehaw Creek	1.50%	5.42%	0.23%	0.04%	0.22%	0.00%	41.93%	20.09%	7.48%	0.16%	13.71%	0.16%	6.28%	2.78%	0.00%
Little Deer Creek	1.05%	3.07%	1.45%	1.05%	0.76%	2.29%	38.40%	25.90%	7.40%	0.72%	6.04%	0.00%	8.15%	3.71%	0.00%
Little Deer Creek Trib	4.18%	4.24%	2.01%	1.75%	0.70%	15.63%	26.83%	29.93%	0.00%	3.13%	3.57%	0.00%	6.99%	1.02%	0.00%
Little Suwanee Creek	1.79%	21.85%	29.89%	7.15%	0.45%	0.00%	17.12%	12.93%	0.12%	0.25%	4.71%	0.00%	1.30%	2.43%	0.00%
Long Branch	0.00%	1.86%	0.00%	0.00%	0.18%	0.00%	46.56%	28.62%	8.90%	0.12%	1.12%	0.00%	12.33%	0.32%	0.00%
Malholms Creek	1.28%	4.59%	0.56%	0.14%	1.38%	0.00%	22.48%	21.10%	4.20%	2.15%	36.85%	0.06%	4.43%	0.77%	0.00%

Percent Total Land Use															
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands
Mill Dam Creek	0.00%	1.13%	0.00%	0.00%	0.19%	0.00%	27.45%	38.66%	4.02%	0.66%	12.71%	0.00%	13.50%	1.67%	0.00%
Mountain Creek	0.34%	20.24%	10.89%	5.37%	1.18%	0.00%	23.72%	11.52%	2.29%	0.72%	12.80%	0.00%	9.02%	1.90%	0.00%
Phinazee Creek	0.80%	3.79%	0.50%	0.05%	0.17%	0.00%	37.52%	14.91%	1.08%	3.17%	15.24%	0.00%	20.91%	1.86%	0.00%
Red Creek	0.27%	4.59%	0.88%	0.06%	0.76%	0.01%	35.09%	33.03%	3.39%	2.02%	7.41%	0.01%	10.00%	2.49%	0.00%
Rock Creek	0.66%	0.73%	0.26%	0.68%	0.00%	10.52%	30.15%	19.99%	12.28%	1.36%	6.77%	0.00%	15.59%	0.42%	0.58%
Rocky Creek - Butts	0.61%	3.32%	0.07%	0.00%	0.31%	0.00%	36.21%	22.43%	5.21%	3.89%	16.26%	0.00%	11.24%	0.46%	0.00%
Rocky Creek - Monroe	1.22%	4.46%	0.59%	0.02%	0.61%	0.00%	30.96%	27.62%	4.09%	1.15%	18.81%	0.05%	6.78%	3.64%	0.00%
Rocky Creek - Bibb	0.68%	9.88%	2.24%	0.09%	0.68%	0.00%	30.52%	29.63%	6.59%	0.15%	7.67%	0.00%	6.04%	5.83%	0.00%
Rum Creek	0.45%	7.22%	2.72%	1.77%	0.48%	0.00%	29.40%	29.05%	5.51%	1.67%	12.78%	0.00%	7.12%	1.83%	0.00%
Sand Branch	0.00%	2.39%	0.00%	0.00%	0.19%	0.00%	30.20%	55.18%	6.98%	0.22%	1.89%	0.00%	2.82%	0.12%	0.00%
Scoggins Creek	0.47%	5.02%	0.13%	0.00%	0.68%	0.00%	34.38%	28.59%	11.16%	0.26%	3.30%	0.00%	15.92%	0.10%	0.00%
Shoal Creek	0.09%	48.27%	21.43%	9.05%	0.00%	0.00%	8.21%	11.19%	1.34%	0.09%	0.25%	0.00%	0.00%	0.08%	0.00%
Snapping Shoals Creek	0.80%	17.01%	21.78%	14.45%	0.92%	0.77%	10.25%	18.95%	1.28%	0.81%	7.71%	0.02%	2.59%	2.66%	0.00%
South River	0.22%	26.38%	28.04%	20.77%	0.20%	0.00%	10.40%	9.81%	1.27%	0.13%	1.18%	0.00%	0.52%	1.08%	0.00%
Third Branch	0.00%	1.86%	0.00%	0.00%	0.18%	0.00%	46.56%	28.62%	8.90%	0.12%	1.12%	0.00%	12.33%	0.32%	0.00%
Tobesofkee Creek	0.45%	4.65%	1.96%	0.73%	0.27%	0.61%	28.47%	21.38%	3.20%	2.51%	23.10%	0.13%	9.07%	3.47%	0.00%
Trib to Little Haynes Cr	0.72%	14.49%	8.02%	0.25%	1.37%	0.57%	17.23%	34.47%	0.57%	2.75%	15.86%	0.00%	3.40%	0.30%	0.00%
Tobler Creek	0.30%	4.76%	1.15%	0.21%	0.77%	0.03%	39.06%	31.84%	6.54%	0.68%	4.16%	0.02%	9.24%	1.23%	0.00%
Town Branch	0.64%	23.28%	16.18%	10.71%	0.30%	0.00%	13.07%	15.56%	6.61%	0.69%	10.57%	0.00%	1.81%	0.57%	0.00%
Trib to Tobesofkee Cr	0.22%	12.04%	7.63%	3.19%	1.93%	0.00%	22.37%	12.37%	3.04%	1.93%	28.63%	0.11%	6.56%	0.00%	0.00%
Walnut Creek - Jones	0.68%	4.70%	0.53%	0.22%	0.66%	1.16%	27.09%	26.65%	5.68%	0.96%	14.64%	0.02%	12.68%	4.32%	0.01%
Walnut Creek - Crawford	0.66%	2.76%	0.11%	0.02%	0.39%	0.03%	29.74%	39.13%	4.91%	2.53%	9.09%	0.00%	8.82%	1.81%	0.00%
White Creek	0.10%	2.36%	0.10%	0.00%	2.99%	0.00%	33.12%	29.53%	3.64%	3.30%	12.20%	0.03%	11.05%	1.57%	0.00%
Wise Creek	0.40%	3.94%	0.33%	0.02%	0.20%	0.00%	36.90%	34.05%	6.13%	0.20%	7.32%	0.01%	8.33%	2.17%	0.00%
Wood Creek	1.13%	6.15%	0.00%	0.67%	0.64%	0.00%	29.55%	22.56%	3.39%	1.13%	30.62%	0.09%	1.33%	2.73%	0.00%

Table 5d. Land Use Percentages (Impaired Southeastern Plains)

Percent Total Land Use																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands
Bay Creek	0.00%	24.69%	13.81%	14.27%	0.00%	0.00%	21.20%	6.71%	4.20%	0.37%	2.52%	6.81%	5.18%	0.24%	0.00%
Big Grocery Creek	0.00%	0.35%	0.00%	0.00%	0.00%	0.00%	25.46%	35.86%	27.57%	0.03%	0.06%	0.00%	0.40%	10.28%	0.00%
Big Horse Creek	0.38%	3.53%	0.34%	0.05%	0.00%	0.20%	9.17%	33.98%	6.91%	0.60%	8.09%	13.48%	11.89%	10.58%	0.81%
Big Indian Creek	0.42%	6.53%	2.17%	1.29%	0.00%	0.01%	21.02%	15.67%	6.17%	0.47%	12.50%	15.00%	11.21%	7.15%	0.38%
Bluff Creek	0.13%	3.45%	0.61%	0.03%	0.00%	0.11%	9.50%	24.57%	4.68%	0.47%	5.01%	34.14%	6.28%	10.37%	0.65%
Cedar Creek	0.35%	3.89%	1.13%	0.04%	0.00%	0.18%	8.68%	22.28%	4.26%	0.17%	7.50%	35.09%	6.56%	9.10%	0.77%
Crooked Creek	0.52%	3.47%	0.25%	0.06%	0.00%	0.05%	9.87%	33.74%	7.51%	0.45%	7.33%	15.66%	11.16%	9.24%	0.70%
Deep Creek	0.37%	2.84%	0.46%	0.00%	0.03%	0.00%	31.53%	23.40%	7.80%	1.26%	8.98%	2.42%	13.19%	7.21%	0.50%
Flat Creek	0.79%	4.33%	0.40%	0.39%	0.00%	0.02%	22.83%	19.33%	6.91%	0.66%	10.81%	17.33%	9.75%	6.06%	0.39%
Folsom Creek	0.44%	3.51%	0.53%	0.08%	0.00%	0.19%	7.05%	46.54%	5.73%	0.75%	7.11%	15.79%	6.05%	5.57%	0.66%
Gum Swamp Creek	0.39%	3.73%	0.56%	0.06%	0.00%	0.13%	14.69%	18.97%	6.15%	0.24%	10.68%	24.13%	7.11%	12.32%	0.83%
Hartley Branch	0.77%	3.44%	0.61%	0.00%	0.06%	0.00%	39.03%	16.02%	14.03%	0.91%	6.83%	3.31%	9.87%	4.46%	0.67%
Horse Creek	0.61%	4.56%	0.62%	0.13%	0.00%	0.01%	9.51%	27.88%	6.57%	0.17%	11.56%	18.33%	9.04%	10.34%	0.68%
House Creek	0.58%	6.47%	1.25%	0.00%	0.00%	0.07%	11.08%	34.92%	5.95%	0.22%	11.47%	18.25%	7.10%	1.84%	0.82%
Limestone Creek	0.15%	2.02%	0.49%	0.11%	0.00%	1.07%	35.32%	23.18%	11.04%	0.81%	5.37%	3.66%	8.65%	7.73%	0.41%
Mossy Creek	0.09%	4.62%	1.08%	0.23%	0.01%	0.00%	23.85%	11.05%	4.32%	0.53%	17.07%	21.21%	9.95%	5.51%	0.48%
Otter Creek	0.87%	5.86%	0.94%	0.15%	0.00%	0.07%	6.33%	44.53%	5.52%	0.30%	8.13%	7.67%	10.37%	8.11%	1.14%
Rocky Creek - Jasper	0.34%	3.30%	0.00%	0.00%	0.50%	0.00%	33.30%	11.69%	1.63%	0.43%	31.36%	0.05%	15.49%	1.92%	0.00%
Sturgeon Creek	0.44%	3.86%	0.24%	0.02%	0.00%	0.02%	5.28%	50.35%	4.98%	1.63%	4.32%	6.17%	12.88%	9.17%	0.66%
Ten Mile Creek	0.12%	2.77%	0.35%	0.04%	0.00%	0.10%	10.05%	31.85%	5.98%	0.57%	4.17%	25.91%	7.47%	10.08%	0.53%

Table 6a. Soil Type Distribution (Unimpaired Piedmont)

Name	Drainage Area Upstream from the monitoring point (sq mile)	Soil Type (acres)																
		GA129	GA127	GA101	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA035	GA031	GA030	GA026	GA025
K-Factor		**0.14**	**0.03**	**0.25**	**0.14**	**0.30**	**0.16**	**0.21**	**0.17**	**0.14**	**0.13**	**0.15**	**0.26**	**0.24**	**0.24**	**0.27**	**0.25**	**0.27**
Alcovy River	178.53												40,367	2,512			30,858	40,519
Bear Creek	33.32																7,848	13,473
Beaverdam Creek	8.98														30	1,405		4,312
Big Sandy Creek	55.05														57		7,349	27,823
Buck Creek	31.68				2,924	14,409												2,939
Chambliss Creek	5.54																54	3,494
Deer Creek	7.12																1,507	3,046
Douglas Creek	2.02																312	977
Falling Creek	71.67														1,347	2,049	27,900	14,571
Freeman Creek	3.23																1539.4	525.2
Herds Creek	4.85																1270.7	1832.5
Honey Creek	16.75												4,012	4,646			2,060	
Kinnard Creek	7.85														68		3,549	1,406
Lee Creek	3.10																939	1048
Little Buck Creek	4.55																	2,910
Little Deer Creek D/S DOT	4.42																57	2,772
Little Falling Creek	18.87														591	1,379	5,802	4,306
Long Branch	1.33																	852
No Business Creek	5.56												2,779	781				
Panther Creek	1.60																	1,027
Peeksville Creek	3.02																878	1,052
Prairie Creek	2.75																53	1,704
Rock Creek	4.57								238	1,188	757				32	70		669

Name	Drainage Area Upstream from the monitoring point (sq mile)	Soil Type (acres)																
		GA129	GA127	GA101	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA035	GA031	GA030	GA026	GA025
K-Factor		**0.14**	**0.03**	**0.25**	**0.14**	**0.30**	**0.16**	**0.21**	**0.17**	**0.14**	**0.13**	**0.15**	**0.26**	**0.24**	**0.24**	**0.27**	**0.25**	**0.27**
Rocky Creek - Bibb	21.70														918	2,631	503	9,833
Rocky Creek - Monroe	25.08			370													6,510	9,173
Sabbath Creek	4.09										71				65			2,484
Swan Creek U/S	1.76																485	643
Swan Creek D/S	4.67			41													1,785	1,164
Tobesofkee Creek	40.94																6,341	19,858
Tobesofkee Creek lower	26.36																5,334	11,535
Towaliga River	55.93							213									14,210	21,371
Towaliga River	103.62							214									26,840	39,265
Town Branch U/S Jackson WPCP	2.12																	1,359
Troublesome Creek	13.74																3,575	5,217
Tussahaw Creek tributary	2.57																297	1,347
Tussahaw Creek upper	18.47																4,441	7,377
Tussahaw Creek lower	40.60					337	105										11,532	14,007
Yellow Creek	8.27																2,187	3,107
Yellow Water Creek Trib D/S	0.62																	397
Yellow Water Creek U/S	8.97																	5,741
Yellow Water Creek D/S	9.02																	5,771
Yellow Water Creek lower	11.07																	7,082

Table 6b. Soil Type Distribution (Impaired Piedmont)

Name	Drainage Area Upstream from the monitoring point (sq mile)	Soil Type (acres)																
		GA129	GA127	GA101	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA035	GA031	GA030	GA026	GA025
K-Factor		**0.14**	**0.03**	**0.25**	**0.14**	**0.30**	**0.16**	**0.21**	**0.17**	**0.14**	**0.13**	**0.15**	**0.26**	**0.24**	**0.24**	**0.27**	**0.25**	**0.27**
Barbershela Creek	6.42	1,362											438					2,306
Big Sandy Creek	4.96																	3,176
Brown Branch	4.72																1,013	2,010
Butlers Creek	4.67																1,615	1,377
Cabin Creek	11.98																1,985	5,683
Calaparchee Creek	3.83																	2,451
Carr Branch	2.56												75	1,563				
Cobbs Creek	2.95	1,889																
Cole Creek	1.40																320	579
Doolittle Creek	6.82	4,219														54		92
Dried Indian Creek	6.18												2,175	10			385	1,3834
Eightmile Creek	0.87																12	545
Garner Creek	5.08	3,246																5
Gladesville Creek	5.56														1,096	2,321	8,869	4,319
Hansford Branch	0.89																11	561
Harmon Pye Branch	2.68														564		702	452
Herds Creek	13.83																3,186	5,663
Intrenchment Creek	9.91	2,013	3,772													556		
Island Shoal Creek	4.00																1,345	1,214
Little Chehaw Creek	2.97																	1,903
Little Deer Creek	7.42																879	3,870
Little Deer Creek Trib	1.09																	697
Little Suwanee Creek	9.18																1,253	4,624
Long Branch	2.52														1,613			
Malholms Creek	2.17																532	855
Mill Dam Creek	2.00																409	868

Name	Drainage Area Upstream from the monitoring point (sq mile)	Soil Type (acres)																
		GA129	GA127	GA101	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA035	GA031	GA030	GA026	GA025
K-Factor		**0.14**	**0.03**	**0.25**	**0.14**	**0.30**	**0.16**	**0.21**	**0.17**	**0.14**	**0.13**	**0.15**	**0.26**	**0.24**	**0.24**	**0.27**	**0.25**	**0.27**
Mountain Creek	4.47																34	2,829
Phinazee Creek	2.79																799	985
Red Creek	12.03																2,602	5,094
Rock Creek	1.32									373	402				2			70
Rocky Creek - Butts	3.35																207	1,938
Rocky Creek - Monroe	6.35																1,643	2,422
Rocky Creek - Bibb	5.84															198	511	3,031
Rum Creek	10.90																2,016	4,959
Sand Branch	1.12																194	523
Scoggins Creek	3.31			315											1,026	537		242
Shoal Creek	4.09	2,620																
Snapping Shoals Creek	16.77												3,332				5,541	1,859
South River	56.00													606		34,452		784
Third Branch	2.52														1,613			
Tobesofkee Creek	26.80																1,648	15,504
Trib to Little Haynes Cr	2.19												1,341	59				
Tobler Creek	9.21															3,079		2,816
Town Branch	1.52																2	970
Trib to Tobesofkee Cr	0.94																	600
Walnut Creek - Jones	26.63														1,714		7,401	7,926
Walnut Creek - Crawford	12.68														5,151	2,241		723
White Creek	2.69																104	1,620
Wise Creek	11.03														1,704		3,513	1,841
Wood Creek	1.57																439	563

Table 6c. Soil Type Distribution (Unimpaired Southeastern Plains)

Name	Drainage Area upstream from monitoring point (sq mi)	Soil Type (acres)																			
		GA097	GA088	GA072	GA060	GA057	GA056	GA055	GA054	GA051	GA050	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA026	GA025
K-Factor		0.29	0.28	0.13	0.11	0.15	0.15	0.11	0.14	0.12	0.15	0.14	0.30	0.16	0.21	0.17	0.14	0.13	0.15	0.26	0.25	0.27
Alligator Creek	219.74					11,599		805		7,461	59,167	58,478							3,122			
Big Creek	5.94										393			3,409								
Big Creek	41.05										1,963			24,277								
Big Indian Creek	61.11										227			26,312			12,396					
Little Shellstone Creek	1.14						88							643								
Little Sturgeon Creek	8.60							1,158				3,158			1,192							
Mossy Creek	30.97													10,906		1,080	5,995	1,836				
Richland Creek	18.66						1,929				2,136			7,875								
Savage Creek	59.75						3,151		4,453		2,151			27,763								
Shellstone Creek	43.27						12,608				7,851			7,233								
South Prong Creek	19.60										9,897			2,645								
Sugar Creek	175.83											36,305	69,372						6,137	709		
Whitewater Creek	4.15														297			1,054	1,306			

Table 6d. Soil Type Distribution (Impaired Southeastern Plains)

Name	Drainage Area upstream from monitoring point (sq mi)	Soil Type (acres)																			
		GA097	GA088	GA072	GA060	GA057	GA056	GA055	GA054	GA051	GA050	GA049	GA047	GA046	GA043	GA041	GA040	GA039	GA038	GA036	GA026	GA025
K-Factor		0.29	0.28	0.13	0.11	0.15	0.15	0.11	0.14	0.12	0.15	0.14	0.30	0.16	0.21	0.17	0.14	0.13	0.15	0.26	0.25	0.27
Alligator Creek	219.74					11,599		805		7,461	59,167	58,478							3,122			
Big Creek	5.94										393			3,409								
Big Creek	41.05										1,963			24,277								
Big Indian Creek	61.11										227			26,312			12,396					
Little Shellstone Creek	1.14						88							643								
Little Sturgeon Creek	8.60							1,158				3,158			1,192							
Mossy Creek	30.97													10,906		1,080	5,995	1,836				
Richland Creek	18.66						1,929				2,136			7,875								
Savage Creek	59.75						3,151		4,453		2,151			27,763								
Shellstone Creek	43.27						12,608				7,851			7,233								
South Prong Creek	19.60										9,897			2,645								
Sugar Creek	175.83											36,305	69,372						6,137	709		
Whitewater Creek	4.15														297			1,054	1,306			

2.0 WATER QUALITY ASSESSMENT

2.1 Fish Sampling

In 1998 and 1999, the Department of Natural Resources (DNR) Wildlife Resources Division (WRD) conducted studies of fish communities in the Ocmulgee River Basin. Biological monitoring is a method used to evaluate the health of a biological system in order to assess degradation from various sources. It is based on direct observations of aquatic communities. Forty-one stream segments were rated as Poor or Very Poor based on the 1998 and 1999 studies, placed on the 303(d) list as partially supporting or not supporting their designated use, and scheduled for TMDL evaluation. One additional stream, Carr Branch, was placed on the 2000 303(d) list based on GA EPD investigations. The TMDLs for these forty-one stream segments were completed in January 2002. Since that time, two of the stream segments evaluated in the 2002 TMDL document have been removed from the 303(d) list (Little Shellstone Creek and Shellstone Creek).

Between 2000 and 2003, the WRD conducted additional studies of fish populations in the Ocmulgee River Basin. Based on these studies, thirty-one additional stream segments were rated as Poor or Very Poor and placed on the 303(d) list as partially supporting or not supporting their designated water use. Overall, between 1998 and 2003, fifty-seven stream segments were rated as Excellent, Good, or Fair and assessed as supporting their designated water use.

The work performed by the WRD looked at patterns of fish communities within the various ecoregions. An ecoregion is a region of relative homogeneity in ecological systems or in relationships between organisms and their environment. Seven major ecoregions have been identified in Georgia based upon soil types, potential natural vegetation, land surface form, and predominant land uses. These include the Blue Ridge Mountains, Ridge and Valley, Southwestern Appalachians, Piedmont, Middle Atlantic Coastal Plain, Southeastern Plains, and Southern Coastal Plain.

Reference sites within the Piedmont and Southeastern Plains ecoregions were established. These sites represented the least impacted sites that exist given the prevalent land use within the ecoregion. One hundred twenty-six (126) sites were sampled within the Ocmulgee River Basin (see Tables 7, 8, and 9). These sites had to be accessible, wadeable, and representative of the stream under investigation. The length of the fish sampling site was thirty-five times the mean stream width, up to 500 meters. This sampling length was found to be long enough to include the major habitat types present. Electrofishing and seining techniques were used for sampling the fish population (GAWRD, 2000).

Two indices of fish community health were used to assess the biotic integrity of the aquatic systems: the modified Index of Well-Being (IWB) and the Index of Biotic Integrity (IBI). The IWB and IBI scores were classified as Excellent, Good, Fair, Poor, or Very Poor. Segments with fish populations rated as Poor or Very Poor were listed as Biota Impacted.

The modified IWB measures the health of the aquatic community based on the density and diversity or structural attributes of the fish community. The IWB is calculated based on four parameters: the relative density of fish, the relative biomass of fish, the Shannon-Wiener Index of Diversity based on number, and the Shannon-Wiener Index of Diversity based on biomass.

The IBI assesses the biotic integrity of aquatic communities based on the functional and compositional attributes of the fish community. The IBI consists of twelve measurements or

metrics, which assess three facets of the fish population: species richness and composition, trophic composition and dynamics, and fish abundance and condition. Each metric is scored by comparing its value to the value of the regional reference site. Factors that affect the structure and function of a fish community include stream location and size. Thus, the metrics were developed for regional drainage basins, e.g., the Atlantic Slope Drainage Basin, which includes the Ocmulgee, Oconee, Ogeechee, and Savannah River Basins. To account for the fact that streams with larger drainage basins normally have greater species richness, Maximum Species Richness plots were developed for the species richness metric (GAWRD, 2000).

To supplement the findings of the fish community data, habitat assessments were performed at each sampling site. Habitat scores evaluate the physical surroundings of a stream as they affect and influence the quality of the water resource and its resident aquatic community. These data may also help clarify the results of the biotic indices. The habitat assessment used was developed by personnel within the Watershed Protection Branch (WPB) of GA EPD and is a modification of the EPA Rapid Bioassessment Protocol III (GAWPB, 2000). It incorporates different assessment parameters for riffle/run prevalent streams. The habitat assessment evaluates the stream's physical parameters and is broken into three levels. Level one describes in-stream characteristics that directly affect biological communities (in-stream cover, epifaunal substrate, embeddedness, and riffle frequency). Level two describes the channel morphology (channel alteration, sediment deposition, and channel flow status). Level three describes the riparian zone surrounding the stream, which indirectly affects the type of habitat and food resources available in the stream (bank vegetation, bank stability, and riparian zone width). The total habitat scores obtained for each sampling station are compared to a site-specific control or regional reference site. The ratio between the station of interest and the reference site provides a percent comparability that can be used to classify the stream.

Table 7 summarizes WRD's fish community study scores. The IBI, IWB, and Habitat Assessment scores are listed and the watersheds are grouped by the unimpaired watersheds, followed by the impaired watersheds. In addition, the table includes the drainage areas upstream of the monitoring points and the county in which the monitoring points are located. Table 8 provides the detailed habitat assessment scores.

During the fish community studies, physical characteristics of the stream were measured at the monitoring sites. These characteristics included the number of pools, depth of the deepest pool, number of riffles, average stream depth, and average stream width. In addition, stream water quality measurements were taken at the time of the fish sampling. The parameters measured included water temperature, dissolved oxygen, conductivity, pH, turbidity, total hardness and alkalinity. Table 9 provides a summary of these field measurements.

Visual observations of the stream and watershed were also made by WRD personnel. The type of land use and the extent of land-disturbing activities and other pertinent features of the watershed were systematically observed from all available road accesses and were recorded. This information was used to determine the possible sources of eroded soils and other possible contaminants.

Table 7a. 1998-2003 WRD's Fish Community Study Scores (Piedmont)

Name	Drainage Area upstream from the monitoring point (sq mile)	County	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Alcovy River	180.2	Newton	09/10/99	42	Fair	8.7	Good	78.03
Bear Creek	33.9	Newton	10/24/00	34	Fair	8.9	Good	151.77
Beaverdam Creek	9.2	Bibb	04/18/99	34	Fair	7.2	Fair	106.90
Big Sandy Creek	54.8	Butts/Monroe	04/08/98	42	Fair			75.70
Buck Creek	32.4	Lamar	04/20/99	44	Good	8.8	Good	82.00
Chambliss Creek	5.8	Monroe	04/14/98	42	Fair	6.4	Fair	57.30
Deer Creek	7.3	Monroe	04/14/98	50	Good	8.1	Good	66.30
Douglas Creek	2.2	Butts	04/05/98	36	Fair	7.7	Good	91.70
Falling Creek	72.4	Jones	04/06/99	44	Good	7.5	Fair	51.20
Freeman Creek	3.5	Newton	07/10/03	44	Good	7.66	Good	105.2
Herds Creek	5.0	Jasper	04/04/98	40	Fair	6.6	Fair	47.0
Herds Creek	5.0	Jasper	06/05/03	40	Fair	7.39	Good	81.1
Honey Creek	17.2	Rockdale	08/06/03	40	Fair	7.64	Fair	61.9
Kinnard Creek	7.9	Jasper	04/05/98	36	Fair	6.2	Fair	70.00
Lee Creek	3.2	Monroe	04/02/98	38	Fair	6.8	Fair	74.70
Little Buck Creek	4.7	Lamar	04/01/99	44	Good	6.7	Fair	74.00
Little Deer Creek D/S DOT	6.2	Monroe	05/16/98	36	Fair	7.4	Good	88.00
Little Falling Creek	18.9	Jones	04/09/98	36	Fair	7.4	Fair	56.30
Long Branch	1.4	Butts	04/06/98	46	Good	7.1	Fair	86.30
Lower Towaliga Creek	57.0	Henry	09/22/03		Fair			
No Business Creek	5.9	Gwinnett	07/31/03	34	Fair	7.41	Good	109.2
Panther Creek	1.8	Butts	04/05/98	34	Fair	6.9	Fair	111.30
Peeksville Creek	3.2	Henry	04/05/99	34	Fair	6.4	Fair	57.5
Peeksville Creek	3.2	Henry	09/21/01	42	Fair	6.3	Fair	67.36
Prairie Creek	2.9	Lamar	04/10/98	34	Fair	7.1	Fair	59.70
Rocky Creek - Bibb	22.7	Bibb	04/30/99	38	Fair	7.1	Fair	95.33
Rocky Creek - Jones	4.7	Jones	04/12/98	34	Fair	6.4	Fair	56.70
Rocky Creek - Monroe	26.0	Monroe	04/05/99	36	Fair	8	Fair	71.30
Sabbath Creek	4.5	Bibb	04/01/99	42	Fair	8	Good	118.80
Swan Creek D/S	4.9	Lamar	04/11/98	54	Excellent	8.3	Excellent	92.00
Swan Creek D/S	4.9	Lamar	04/08/99	54	Excellent	7.3	Excellent	70.20
Swan Creek D/S	4.9	Lamar	09/21/00	36	Fair	5.1	Poor	72.10
Swan Creek D/S	4.9	Lamar	09/21/01	40	Fair	6.4	Fair	80.55
Swan Creek U/S	1.8	Lamar	04/11/98	44	Good	7.2	Fair	152.00
Swan Creek U/S	1.8	Lamar	04/08/99	38	Fair	6.6	Fair	103.20
Tobesofkee Creek	42.6	Monroe	09/18/03		Fair			112.6

Name	Drainage Area upstream from the monitoring point (sq mile)	County	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Tobesofkee Creek lower	54.9	Monroe	04/05/99	44	Good	8.2	Fair	76.90
Towaliga River	105.4	Butts	04/06/99	36	Fair	7.6	Fair	68.50
Towaliga River	57.0	Henry		34	Fair	7.59	Fair	100.1
Town Branch U/S Jackson WPCP	2.2	Butts	04/08/98	38	Fair	6.6	Fair	94.00
Troublesome Creek	13.9	Spalding	04/06/99	48	Good	7.1	Fair	53.20
Tussahaw Creek lower	61.2	Butts	09/21/01	36	Fair	7.8	Fair	80.28
Tussahaw Creek lower	61.2	Butts	04/06/99	42	Fair	8.5	Fair	66.90
Tussahaw Creek tributary	2.6	Henry	09/21/01	38	Fair	7	Fair	88.5
Tussahaw Creek tributary	2.6	Henry	04/04/99	36	Fair	7.1	Fair	81.1
Tussahaw Creek tributary	2.6	Henry	06/05/03		Fair			109.9
Tussahaw Creek upper	19.1	Henry	04/06/99	42	Fair			78.20
Yellow Creek	1.6	Monroe	04/14/98	44	Good	7.1	Fair	59.00
Yellow Water Creek Trib D/S	0.7	Butts	04/09/98	38	Fair	6.8	Fair	64.70
Yellow Water Creek U/S	9.1	Butts	04/06/99	44	Good	8.2	Excellent	57.20
Yellow Water Creek D/S	9.2	Butts	04/07/99	38	Fair	7.5	Good	51.10
Yellow Water Creek lower	20.7	Butts	04/10/98	36	Fair	7.8	Fair	85.30
Barbershela Creek	6.7	DeKalb	07/14/03	18	Very Poor	3.5	Very Poor	59.87
Big Sandy Creek	5.1	Butts	04/06/98	24	Very Poor	4.9	Very Poor	52.30
Brown Branch	5.0	Henry	04/04/99	36	Fair	3.8	Very Poor	101.60
Butlers Creek	4.6	Jones	04/09/98	22	Very Poor	4.7	Very Poor	64.70
Cabin Creek upper	12.5	Spalding	04/12/99	24	Very Poor	6.5	Poor	62.40
Cabin Creek mid	4.2	Spalding	04/12/99	16	Very Poor	4.4	Very Poor	51.60
Cabin Creek lower	1.6	Spalding	04/12/99	12	Very Poor	4.2	Very Poor	47.40
Calaparchee Creek	4.1	Monroe	04/08/98	20	Very Poor	4.7	Very Poor	38.30
Carr Branch	2.7	Rockdale	05/30/03	20	Very Poor	4.8	Very Poor	50.75
Cobbs Creek	3.2	DeKalb	06/20/03	26	Poor	6.7	Fair	75.03
Cole Creek	1.5	Lamar	04/10/98	28	Poor	5.4	Poor	64.30
Doolittle Creek	7.1	DeKalb	07/14/03	24	Very Poor	5.1	Poor	58.40
Dried Indian Creek	6.4	Newton	07/10/03	22	Very Poor	4.1	Very Poor	71.40
Eightmile Creek	1.0	Monroe	04/03/98	30	Poor	5.7	Poor	92.70
Garner Creek	5.3	Gwinnett	07/15/03	28	Poor	6	Fair	74.57
Gladesville Creek	5.5	Jasper	04/05/98	22	Very Poor			45.30
Hansford Branch	1.0	Monroe	04/02/98	22	Very Poor	5	Poor	98.30
Harmon Pye Branch	2.8	Jasper	04/05/98	32	Poor	5.4	Poor	57.70
Herds Creek	14.0	Jasper	04/05/98	32	Poor	6.6	Poor	86.30
Intrenchment Creek	10.4	DeKalb	08/13/03	16	Very Poor	0	Very Poor	55.57
Island Shoal Creek	4.2	Henry	07/10/03	22	Very Poor	4	Very Poor	65.10

Name	Drainage Area upstream from the monitoring point (sq mile)	County	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Little Chehaw	3.1	Jones	04/04/99	22	Very Poor	5.4	Poor	52.80
Little Deer Creek U/S DOT	6.1	Monroe	04/01/98	30	Poor	5.9	Fair	62.70
Little Deer Creek	9.2	Monroe	04/05/99	28	Poor	6.2	Fair	53.50
Little Deer Creek Tributary	1.2	Monroe	04/01/98	30	Poor	5.2	Poor	96.30
Little Suwanee Creek	10.2	Gwinnett	08/07/03	18	Very Poor	5.3	Poor	71.6
Long Branch	2.6	Jasper	04/05/98	30	Poor	6.3	Fair	92.70
Malholms Creek	2.3	Butts	04/06/99	26	Poor	4.9	Very Poor	72.50
Mill Dam Creek	2.1	Monroe	04/02/98	24	Very Poor	6.1	Fair	108.70
Mountain Creek	4.6	Walton	05/29/03	32	Poor	6.4	Fair	77.63
Phinazee Creek	2.9	Monroe	04/03/98	26	Poor	4.9	Very Poor	107.30
Red Creek	12.4	Monroe	04/02/98	30	Poor	5.7	Very Poor	45.00
Rock Creek	1.4	Jones	04/13/98	34	Fair	5.6	Poor	79.70
Rocky Creek - Butts Co	3.4	Butts	04/06/98	26	Poor	4.5	Very Poor	64.30
Rocky Creek - Jasper Co	1.6	Jasper	04/05/98	32	Poor	5.5	Poor	67.70
Rocky Creek - Monroe Co	6.6	Monroe	04/02/98	20	Very Poor	4.8	Very Poor	63.70
Rocky Creek - Bibb Co	6.2	Bibb	04/01/99	28	Poor	5.5	Poor	72.00
Rum Creek	11.4	Monroe	04/14/98	32	Poor	6.6	Poor	65.70
Sand Branch	1.1	Monroe	04/01/98	30	Poor	6.5	Fair	128.70
Sand Branch	1.0	Monroe	04/01/98	30	Poor	5.8	Fair	116.30
Scoggins Creek	3.5	Jones	04/09/98	20	Very Poor			41.70
Shoal Creek	4.2	DeKalb	06/20/03	30	Poor	6.4	Fair	78.00
Snapping Shoals Creek	17.2	Rockdale	08/06/03	22	Very Poor	5.6	Poor	88.45
South River	58.9	DeKalb	10/14/03	16	Very Poor	4.60	Very Poor	57.10
Third Branch	3.2	Jones	04/09/98	32	Poor	6	Fair	39.30
Tobesofkee Creek lower	27.7	Monroe	04/05/99	34	Fair	6.8	Poor	53.20
Tobesofkee River middle	4.1	Lamar	04/08/98	30	Poor	6.4	Fair	80.00
Tobesofkee Creek upper	2.4	Lamar	04/08/98	28	Poor	6.1	Fair	61.30
Tobler Creek	9.3	Monroe	04/07/98	22	Very Poor	4.8	Very Poor	40.00
Town Branch U/S Forsyth WTP	1.6	Monroe	04/01/98	18	Very Poor	5.4	Poor	60.00
Town Branch D/S Forsyth WTP	1.7	Monroe	04/01/98	22	Very Poor	4.1	Very Poor	108.30
Town Branch Butts Co	2.3	Butts	04/08/98	24	Very Poor	4.8	Very Poor	60.30
Tributary to Little Haynes Creek	2.3	Walton	05/30/03	18	Very Poor	4.1	Very Poor	48.07
Tributary to Tobesofkee Creek	1.1	Lamar	04/08/98	16	Very Poor	2.9	Very Poor	75.70
Walnut Creek upper - Jones	8.5	Jones	04/12/98	24	Very Poor	4.6	Very Poor	48.30
Walnut Creek lower - Jones	31.0	Jones	04/04/99	32	Poor	6.7	Poor	55.20
Walnut Creek - Crawford Co	13.0	Crawford	04/02/99	30	Poor	5.3	Very Poor	61.00
White Creek	2.8	Monroe	04/03/98	28	Poor	6.1	Fair	65.30

Name	Drainage Area upstream from the monitoring point (sq mile)	County	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Wise Creek	11.3	Jasper	04/05/98	34	Fair	6.1	Very Poor	58.00
Wood Creek	2.0	Monroe	04/11/98	28	Poor	6.5	Fair	122.00

Table 7b. 1998-2003 WRD's Fish Community Study Scores (Southeastern Plains)

Name	Drainage Area upstream from the monitoring point (sq mile)	County	Date	IBI Score	IBI Category	IWB Score	IWB Category	Habitat Total
Alligator Creek	58.7	Wheeler	08/23/00	46	Good	8.2	Good	111.87
Big Creek	8.7	Houston	05/09/00	40	Fair	7	Fair	112.95
Big Creek	47.2	Dooly	05/09/00	40	Fair	6.9	Fair	127.13
Big Indian Creek lower	153.2	Houston	08/22/00	54	Excellent	7.8	Fair	117.23
Big Indian Creek lower	153.2	Houston	10/15/01	50	Good	7.2	Fair	119.27
Big Indian Creek upper	65.0	Houston	05/11/00	50	Good	7.1	Fair	121.12
Little Ocmulgee River	314.4	Telfair	08/23/00	40	Fair	6.5	Poor	69.67
Little Shellstone Creek	1.2	Bleckley	06/10/99	38	Fair	6.9	Fair	111.63
Little Sturgeon Creek	9.0	Ben Hill	05/03/00	44	Good	7.7	Good	150.97
Mossy Creek	33.0	Peach	06/01/00	48	Good	7	Fair	125.83
Richland Creek	19.2	Twiggs	08/22/00	46	Good	7.2	Fair	91.33
Savage Creek	61.2	Twiggs	05/10/00	44	Good	6.7	Fair	105.93
Shellstone Creek	43.5	Bleckley	06/10/99	36	Fair	7.7	Fair	0.00
South Prong Creek	24.9	Dooly	08/20/02	48	Good	8.7	Excellent	125.1
South Prong Creek	24.9	Dooly	08/22/00	56	Excellent	8.9	Excellent	130.3
South Prong Creek	24.9	Dooly	10/15/01	48	Good	8.2	Excellent	136.2
Sugar Creek	180.4	Telfair	07/12/00	42	Fair	7.9	Good	97.07
Whitewater Creek	4.4	Crawford	05/10/00	48	Good	7.5	Good	165.40
Bay Creek	2.5	Peach	05/29/98	16	Very Poor	-1.8	Very Poor	52.00
Big Grocery Creek	6.3	Houston	06/01/00	32	Poor	6.3	Fair	97.90
Big Horse Creek	115.7	Telfair	07/12/00	20	Very Poor	6.1	Poor	100.85
Big Indian Creek	153.2	Houston	08/20/02	30	Poor	7.40	Fair	118.77
Bluff Creek	69.5	Pulaski	06/02/00	32	Poor	7.6	Fair	117.60
Cedar Creek	13.3	Wilcox	05/03/00	12	Very Poor	-0.6	Very Poor	62.83
Crooked Creek	41.3	Dodge	07/12/00	16	Very Poor	3.7	Very Poor	105.70
Deep Creek	15.6	Crawford	05/10/00	16	Very Poor	3.6	Very Poor	104.47
Flat Creek	27.5	Houston	05/09/00	26	Poor	5.6	Poor	109.73
Folsom Creek	20.3	Wilcox	05/03/00	18	Very Poor	1.7	Very Poor	67.50
Gum Swamp Creek	53.9	Bleckley	05/10/00	14	Very Poor	0.3	Very Poor	108.43
Hartley Branch	4.2	Crawford	05/12/99	26	Poor	5.1	Very Poor	86.67
Horse Creek	14.0	Telfair	05/04/00	12	Very Poor	3.3	Very Poor	108.93
Horse Creek	34.2	Telfair	05/04/00	16	Very Poor	3.5	Very Poor	99.13
House Creek	4.3	Wilcox	05/03/00	18	Very Poor	1.8	Very Poor	56.00
Limestone Creek	18.3	Houston	05/11/00	20	Very Poor	6.3	Fair	116.57
Mossy Creek	86.4	Peach	06/01/00	28	Poor	6.4	Poor	102.03
Otter Creek	32.2	Ben Hill	05/03/00	26	Poor	6.1	Poor	126.28
Sturgeon Creek	51.9	Ben Hill	05/03/00	30	Poor	6.2	Poor	122.07
Ten Mile Creek	40.7	Pulaski	08/09/00	14	Very Poor	5.7	Very Poor	131.50

Table 8a. 1998-2003 WRD's Habitat Assessment Scores (Unimpaired Piedmont)

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Alcovy River	09/10/99	1.03	16.70	2.63	0.00	5.50	5.81	6.13	5.25	6.43	7.16	7.83	10.90	2.70	78.03
Bear Creek	10/24/00	16.90	17.13	17.43	18.33	8.00	7.10	7.47	6.70	7.80	7.33	9.90	16.00		151.77
Beaverdam Creek	04/18/99	8.40	13.10	6.40	12.50	8.20	6.30	5.70	6.40	6.80	6.50	4.70	8.50	13.50	106.90
Big Sandy Creek	04/08/98	2.70	7.00	6.70	1.70	11.30	3.70	4.00	2.70	2.70	10.00	10.00	9.70	3.70	75.70
Buck Creek	04/20/99	2.30	16.70	4.40	0.00	10.30	6.70	6.30	5.30	5.10	6.20	8.80	7.70	2.50	82.00
Chambliss Creek	04/14/98	2.70	5.70	3.30	0.70	8.30	1.70	3.30	2.70	3.00	8.70	9.00	6.30	2.00	57.30
Deer Creek	04/14/98	2.70	4.30	2.30	2.00	8.30	5.30	3.70	6.00	5.00	9.30	6.00	6.30	5.00	66.30
Douglas Creek	04/05/98	5.30	11.30	10.00	6.00	12.70	5.30	4.70	5.30	4.30	8.30	1.00	8.70	8.70	91.70
Falling Creek	04/06/99	1.30	13.00	0.70	0.00	7.10	3.00	2.80	2.50	1.90	6.70	6.70	3.30	2.30	51.20
Freeman Creek	07/10/03	8.90	14.90	10.73	16.00	8.83	2.17	2.43	4.73	4.73	6.43	6.17	8.10		105.20
Herds	04/04/98	1.00	5.70	1.70	0.30	15.00	2.70	3.30	2.00	2.70	2.00	3.00	3.80	3.30	47.00
Herds Creek	06/05/03	1.83	17.33	5.33	0.00	13.50	2.75	3.83	2.83	4.50	1.50	6.33	7.00		81.08
Honey Creek	08/06/03	1.33	15.23	2.33	0.00	8.67	1.33	1.33	1.83	1.70	3.67	8.60	6.90		61.93
Kinnard Creek	04/05/98	3.00	6.70	3.30	0.70	15.30	5.30	6.00	3.30	3.30	8.00	5.30	5.30	4.30	70.00
Lee Creek	04/02/98	4.30	7.00	2.00	1.30	15.00	6.00	6.00	3.30	3.30	8.70	9.00	5.30	3.30	74.70
Little Buck Creek	04/01/99	1.70	11.00	2.00	16.00	9.10	4.80	5.00	2.80	3.60	3.00	3.00	4.40	7.60	74.00
Little Deer Creek D/S DOT	05/16/98	4.00	4.70	2.30	9.30	12.70	7.70	7.00	4.70	4.00	9.70	6.70	8.00	7.33	88.00
Little Falling Creek	04/09/98	2.30	5.30	3.00	0.00	9.70	3.00	3.30	2.70	2.70	7.00	7.00	8.00	2.30	56.30
Long Branch	04/06/98	6.00	9.70	4.00	4.70	17.00	4.00	3.70	3.70	3.70	6.00	6.30	7.70	10.00	86.30
No Business Creek	07/31/03	11.00	14.83	10.17	15.00	10.33	3.67	3.83	4.17	4.50	2.67	5.00	12.33		109.17
Panther Creek	04/05/98	7.00	10.00	9.30	12.30	13.30	6.30	5.70	4.30	4.30	9.00	9.00	10.30	10.30	111.30
Peeksville Creek	04/05/99	2.10	17.10	0.80	0.00	8.20	3.70	2.30	3.90	2.40	1.70	9.10	3.10	2.10	57.50
Peeksville Creek	09/21/01	3.77	17.67	3.83	0.00	6.67	2.36	2.13	2.00	1.43	4.37	6.63	6.67		67.36
Praire Creek	04/10/98	3.00	4.30	5.00	0.00	9.30	4.00	4.00	5.00	5.00	3.70	3.70	11.00	1.70	59.70

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Rock Creek	04/30/99	3.30	5.00	2.30	12.30	11.30	1.70	1.70	1.70	1.70	0.00	0.00	6.30	9.30	56.70
Rocky Creek Bibb Co	04/12/98	3.20	14.67	4.90	16.00	9.33	3.57	4.67	3.27	4.43	4.33	9.10	10.00	7.73	95.33
Rocky Creek Monroe Co	04/05/99	3.20	14.80	2.70	0.00	5.80	5.20	4.50	3.80	3.50	5.60	8.90	5.50	7.80	71.30
Sabbath Creek	04/01/99	8.10	16.00	7.50	15.50	13.40	3.50	4.00	4.00	3.50	9.20	9.30	13.60	11.10	118.80
Swan Creek D/S	04/11/98	2.43	17.33	3.33	0.00	7.33	4.00	3.23	3.43	2.77	9.00	9.00	8.00		72.10
Swan Creek D/S	04/08/99	3.17	18.33	5.83	0.00	7.00	1.97	1.85	1.23	1.27	9.50	99.00	10.73		80.55
Swan Creek D/S	09/21/00	3.70	11.70	6.00	11.30	9.30	2.70	2.70	2.30	2.30	9.70	9.70	11.30	9.30	92.00
Swan Creek D/S	09/21/01	3.70	19.30	3.70	0.00	4.70	2.60	2.30	2.40	1.90	9.30	9.30	7.80	3.30	70.20
Swan Creek U/S	04/11/98	13.00	14.30	13.00	15.00	12.00	8.70	8.70	8.70	8.30	9.30	9.30	14.30	17.30	152.00
Swan Creek U/S	04/08/99	7.20	16.30	6.10	14.50	10.20	4.90	3.50	5.30	4.60	9.00	8.00	5.70	7.80	103.20
Tobesofkee Creek	09/18/03	5.23	12.67	6.57	17.00	11.67	3.77	3.47	4.47	3.60	7.00	6.50	15.93		112.60
Tobesofkee Creek lower	04/05/99	3.50	16.10	2.80	0.00	7.10	5.80	5.70	5.10	4.50	9.00	8.60	5.80	3.00	76.90
Towaliga River	04/06/99	8.83	12.90	7.57	13.00	9.20	4.33	3.80	3.93	3.52	8.33	2.18	10.25		100.08
Towaliga River		1.10	16.20	2.50	0.00	6.70	5.70	4.30	5.20	4.50	7.40	7.10	6.40	1.40	68.50
Town Branch U/S Jackson WPCP	04/08/98	6.00	7.30	5.00	11.30	9.00	5.30	5.30	4.00	4.30	9.00	9.00	9.00	9.30	94.00
Troublesome Creek	04/06/99	3.00	13.40	2.30	0.00	7.00	4.30	2.00	3.60	2.20	7.30	0.70	4.90	2.50	53.20
Tussahaw Creek lower	09/21/01	3.15	16.83	5.25	0.00	6.85	4.10	3.20	2.57	2.23	6.40	8.33	11.27		80.28
Tussahaw Creek lower	04/06/99	1.20	16.00	2.90	0.00	8.00	4.20	3.50	3.90	3.40	5.60	8.90	6.90	2.40	66.90
Tussahaw Creek tributary	09/21/01	5.75	16.33	5.75	7.50	7.33	3.87	2.87	2.87	2.87	6.87	7.77	9.17		88.50
Tussahaw Creek tributary	04/04/99	5.30	16.70	4.40	0.70	11.00	4.30	3.80	4.20	3.60	3.80	8.80	7.25	9.40	81.10
Tussahaw Creek tributary	06/05/03	5.47	19.57	7.67	14.00	10.67	3.87	4.00	4.03	3.43	8.10	9.67	7.57		109.93
Tussahaw Creek upper	04/06/99	4.80	12.70	5.70	15.50	10.40	1.50	2.90	0.80	1.60	0.70	5.70	8.40	7.50	78.20
Yellow Creek	04/14/98	4.30	6.70	6.00	3.30	7.00	2.70	3.30	2.30	3.00	1.30	3.00	9.70	6.30	59.00
Yellow Water Creek D/S	04/07/99	1.00	17.40	2.60	0.00	7.30	3.20	3.40	2.60	2.80	0.90	1.20	6.80	1.90	51.10
Yellow Water Creek lower	04/10/98	3.30	10.00	5.00	6.70	9.00	5.00	5.00	3.30	3.30	9.30	9.30	10.70	5.30	85.30
Yellow Water Creek Trib D/S	04/09/98	3.30	5.00	4.30	8.00	9.00	4.00	4.30	2.30	2.70	6.00	3.00	5.30	7.30	64.70

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Yellow Water Creek U/S	04/06/99	1.30	16.00	5.20	0.00	10.30	4.00	3.20	4.20	2.00	2.30	1.50	5.20	2.00	57.20

Table 8b. 1998-2003 WRD's Habitat Assessment Scores (Unimpaired Southeastern Plain)

Name	Date	Bottom Substrate	Pool Substrate	Pool Variability	Channel Alteration	Sediment Deposition	Channel Sinuosity	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Habitat Total
Alligator Creek	08/23/00	11.67	10.20	9.33	16.00	10.50	12.00	7.17	6.00	5.17	5.33	5.50	7.17	5.33	111.87
Big Creek	05/09/00	7.50	6.20	3.42	16.67	10.67	18.00	7.08	6.77	7.00	5.83	5.98	9.33	9.00	112.95
Big Creek	05/09/00	12.48	11.83	11.75	16.87	12.38	16.00	10.67	4.70	4.65	4.30	4.27	9.00	8.73	127.13
Big Indian Creek lower	08/22/00	11.73	11.67	10.33	17.73	8.50	16.00	8.83	5.27	4.63	4.83	4.83	6.93	5.93	117.23
Big Indian Creek lower	10/15/01	10.87	8.40	13.33	17.17	9.67	13.00	14.67	2.68	3.18	5.70	5.83	7.70	7.07	119.27
Big Indian Creek upper	05/11/00	14.17	8.63	11.00	17.17	7.33	19.00	8.33	4.25	4.30	4.27	4.13	9.27	9.27	121.12
Little Ocmulgee River	08/23/00	3.67	8.00	1.33	12.33	10.00	0.00	4.00	4.33	4.33	2.67	2.67	8.33	8.00	69.67
Little Shellstone Creek	06/10/99	5.47	12.10	10.63	16.23	11.53	17.00	8.00	3.40	3.33	4.50	4.67	9.00	5.77	111.63
Little Sturgeon Creek	05/03/00	15.43	13.23	10.00	19.33	12.00	17.00	16.33	7.10	7.53	7.33	7.57	9.87	8.23	150.97
Mossy Creek	06/01/00	12.20	9.17	9.00	11.93	9.57	14.00	13.20	7.40	7.77	6.97	7.20	8.40	8.53	125.83
Richland Creek	08/22/00	7.00	9.17	6.00	16.67	6.00	14.00	6.00	3.33	3.67	3.33	3.00	7.33	5.33	91.33
Savage Creek	05/10/00	6.60	8.08	10.58	16.83	8.17	17.00	9.83	2.42	2.33	3.08	3.17	8.92	8.92	105.93
Shellstone Creek	06/10/99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
South Prong Creek	08/20/02	13.53	13.33	10.17	18.67	10.33	18.00	8.67	2.17	2.17	4.50	4.75	9.33	9.50	125.12
South Prong Creek	08/22/00	13.83	18.00	7.33	16.67	15.00	16.00	8.00	4.00	4.00	5.33	5.33	8.67	8.67	130.33
South Prong Creek	10/15/01	13.10	16.57	10.67	18.23	15.17	16.00	7.00	5.10	5.00	5.33	5.43	9.00	9.10	136.20
Sugar Creek	07/12/00	13.67	10.67	10.00	16.67	8.33	14.00	6.67	1.33	2.00	3.77	4.77	2.10	3.10	97.07
Whitewater Creek	05/10/00	18.00	17.40	13.33	15.50	17.17	12.00	18.33	7.67	7.67	9.00	9.00	9.83	10.00	165.40

Table 8c. 1998-2003 WRD's Habitat Assessment Scores (Impaired Piedmont)

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Barbershela Creek	07/14/03	1.27	13.00	3.87	0.00	7.50	1.40	1.10	1.33	1.10	3.83	6.50	9.43		59.87
Big Sandy Creek	04/06/98	1.00	5.70	2.30	0.00	9.30	4.30	4.30	1.70	1.70	8.30	6.70	5.00	2.00	52.30
Brown Branch	04/04/99	8.40	14.30	8.10	17.00	9.20	3.60	3.70	4.00	4.20	7.60	3.10	6.40	12.10	101.60
Butlers Creek	04/09/98	1.70	5.70	2.30	7.00	7.00	2.00	2.30	2.00	2.00	8.70	8.70	6.00	9.30	64.70
Cabin Creek lower	04/12/99	0.20	14.30	3.90	0.00	8.60	3.70	3.60	2.20	2.60	7.60	7.20	7.30	1.20	62.40
Cabin Creek mid	04/12/99	1.30	12.30	1.20	0.00	6.90	1.10	1.20	0.63	0.76	9.00	9.00	4.10	2.23	49.80
Cabin Creek upper	04/12/99	2.30	15.00	1.70	0.00	7.10	1.50	1.30	0.80	0.70	6.30	5.20	3.50	2.00	47.40
Calaparchee Creek	04/08/98	1.30	6.30	3.30	0.00	7.00	2.70	2.70	1.30	1.30	2.00	5.00	3.00	2.30	38.30
Carr Branch	05/30/03	0.33	11.67	1.33	0.00	9.33	1.17	0.92	1.17	0.83	8.50	2.50	4.67		50.75
Cobbs Creek	06/20/03	6.63	14.00	5.83	6.00	10.00	1.07	0.90	1.33	1.57	2.00	6.00	8.27		75.03
Cole Creek	04/10/98	4.30	5.30	3.70	2.00	7.70	4.00	4.00	4.00	3.70	9.00	6.30	5.70	4.70	64.30
Doolittle Creek	07/14/03	1.33	8.00	2.67	11.50	9.17	1.00	0.92	0.83	1.00	1.00	0.75	7.57		58.40
Dried Indian Creek	07/10/03	2.00	12.33	3.33	13.00	12.67	1.93	1.43	1.60	1.50	0.43	0.77	8.90		71.40
Eightmile Creek	04/03/98	7.30	6.00	6.30	11.30	10.00	5.00	4.30	4.00	4.00	8.70	8.70	6.70	10.30	92.70
Garner Creek	07/15/03	2.23	16.33	2.67	0.00	8.43	2.53	2.10	1.97	1.60	9.23	7.30	8.17		74.57
Gladesville Creek	04/05/98	0.70	4.00	2.00	0.30	9.70	2.30	3.30	1.30	2.00	7.70	7.70	3.00	1.30	45.30
Hansford Branch	04/02/98	6.70	10.70	6.00	4.70	13.00	4.70	4.70	5.70	5.30	9.30	9.30	8.30	10.00	98.30
Harmon Pye Branch	04/05/98	1.30	4.70	4.00	0.00	14.30	3.00	2.70	2.30	2.00	7.00	7.00	7.00	2.30	57.70
Herds Creek	04/05/98	5.00	6.30	5.30	5.70	16.30	4.30	4.00	2.70	2.70	9.00	9.00	8.30	7.70	86.30
Intrenchment Creek	08/13/03	0.40	10.17	0.17	0.00	5.50	3.17	2.33	3.33	2.67	9.50	8.17	2.83		55.57
Island Shoal Creek	07/10/03	1.50	11.67	2.50	0.00	8.83	0.82	1.52	0.77	1.43	8.57	10.00	6.57		65.10
Little Chehaw	04/04/99	2.00	16.00	1.30	0.00	7.50	3.80	3.50	3.20	3.20	4.00	2.00	3.30	3.00	52.80

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Little Deer Creek U/S DOT	04/01/98	1.70	5.00	1.00	0.70	10.30	5.70	6.30	4.30	4.00	8.30	7.70	5.00	2.70	62.70
Little Deer Creek	04/05/99	2.50	12.30	1.30	0.00	5.50	4.30	3.50	3.70	2.20	9.00	5.00	1.80	2.30	53.50
Little Deer Creek Tributary	04/01/98	6.00	5.00	6.00	14.30	9.70	5.70	5.30	4.00	3.00	9.70	9.70	5.00	13.00	96.30
Little Suwanee Creek	08/07/03	3.17	13.33	5.67	0.00	12.33	1.40	1.27	1.60	1.43	6.30	1.73	11.27		71.60
Long Branch	04/05/98	9.70	7.70	6.70	9.00	11.30	5.00	4.70	3.30	4.00	8.70	8.30	6.30	8.00	92.70
Malholms Creek	04/06/99	4.70	14.70	4.70	0.00	7.70	3.70	4.60	4.20	4.70	3.80	9.00	4.70	6.10	72.50
Mill Dam Creek	04/02/98	8.70	8.70	9.00	9.00	16.30	7.00	7.30	4.70	4.70	9.70	9.70	5.70	8.30	108.70
Mountain Creek	05/29/03	3.23	10.00	4.40	15.00	9.00	1.43	1.33	1.53	1.33	7.10	5.27	7.10		77.63
Phinazee Creek	04/03/98	7.30	13.00	6.70	13.70	11.70	5.70	5.00	3.70	3.70	9.30	9.30	8.70	9.70	107.30
Red Creek	04/02/98	1.30	4.30	1.30	0.00	6.70	3.70	4.30	3.00	2.70	6.00	8.30	2.30	1.00	45.00
Rock Creek	04/13/98	6.60	6.00	6.00	0.00	9.33	3.70	3.30	3.00	3.00	3.00	9.00	4.33	11.30	79.70
Rocky Creek - Butts	04/06/98	4.00	5.30	2.70	9.70	15.30	3.70	3.70	2.70	2.30	0.00	0.00	4.70	10.30	64.30
Rocky Creek - Jasper	04/05/98	4.30	11.30	2.30	0.00	13.00	5.00	5.00	3.70	4.30	4.00	5.00	5.70	4.00	67.70
Rocky Creek - Monroe	04/02/98	2.30	7.30	3.30	0.00	8.30	5.70	5.70	4.00	4.00	6.30	8.70	5.30	2.70	63.70
Rocky Creek - Bibb	04/01/99	5.00	13.60	5.70	3.00	9.40	3.00	3.50	3.20	4.40	4.30	7.70	5.10	4.00	72.00
Rum Creek	04/14/98	2.30	7.00	4.30	7.00	6.30	2.00	2.00	1.70	1.70	8.00	7.70	6.30	9.30	65.70
Sand Branch	04/01/98	10.00	6.70	11.70	14.30	15.30	7.30	7.30	7.00	7.00	7.30	8.30	12.70	13.70	128.70
Sand Branch	04/01/98	12.00	6.70	11.30	15.70	16.00	5.00	5.30	4.70	4.70	4.30	4.70	10.70	15.30	116.30
Scoggins Creek	04/09/98	3.30	5.00	0.30	0.00	7.00	1.30	2.00	0.70	1.30	8.70	8.70	1.00	2.30	41.70
Shoal Creek	06/20/03	7.40	14.57	6.50	9.50	9.33	1.50	1.47	1.40	1.63	1.73	2.17	9.23		78.00
Snapping Shoals Creek	08/06/03	2.83	16.77	5.67	15.00	9.50	1.33	1.33	1.50	1.77	7.42	5.57	7.53		88.45
South River	10/14/03	0.33	12.83	1.00	0.00	7.33	2.57	2.57	2.23	2.23	4.67	7.67	5.67		57.10
Third Branch	04/09/98	1.30	4.30	2.00	0.00	6.00	1.30	1.30	0.70	0.70	8.70	8.70	2.30	2.00	39.30
Tobesofkee Creek lower	04/05/99	1.90	15.70	2.20	0.00	7.50	4.40	3.50	2.80	2.70	0.80	4.70	4.00	3.30	53.20

Name	Date	Embeddedness	Channel Alteration	Sediment Deposition	Riffle Frequency	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Instream Cover/Epifaunal	Epifaunal	Habitat Total
Tobesofkee River middle	04/08/98	3.70	3.70	5.00	13.00	12.70	3.00	3.00	0.70	1.30	8.30	9.00	7.70	9.00	80.00
Tobesofkee Creek upper	04/08/98	8.00	4.30	7.30	1.30	8.00	1.70	1.70	2.00	1.70	5.30	8.30	6.30	5.30	61.30
Tobler Creek	04/07/98	1.00	7.30	0.30	0.00	4.30	2.70	3.00	1.30	1.30	8.30	8.30	1.30	0.70	40.00
Town Branch U/S Forsyth WTP	04/01/98	2.00	6.70	6.00	0.70	8.70	4.70	4.70	3.70	3.70	3.00	7.00	5.00	4.30	60.00
Town Branch D/S Forsyth WTP	04/01/98	8.70	5.30	9.00	16.00	9.00	5.30	5.30	5.30	5.30	4.70	8.70	8.00	17.70	108.30
Town Branch	04/08/98	2.70	3.70	1.70	0.00	8.00	6.00	5.70	6.00	5.70	6.00	9.00	3.70	2.30	60.30
Tributary to Little Haynes Creek	05/30/03	0.33	13.00	1.00	0.00	9.83	1.50	0.83	0.70	0.53	4.83	2.17	4.00		48.07
Tributary to Tobesofkee Creek	04/08/98	5.70	4.30	3.30	13.70	9.70	5.00	4.00	4.00	3.70	7.70	1.30	5.30	8.00	75.70
Walnut Creek upper - Jones Co	04/12/98	1.00	4.70	0.70	0.00	7.30	3.30	3.30	2.70	2.70	9.30	9.30	3.00	1.00	48.30
Walnut Creek lower - Jones Co	04/04/99	1.30	6.70	2.00	0.00	7.70	5.60	4.70	5.30	4.60	7.80	2.30	4.70	2.70	55.20
Walnut Creek - Crawford Co	04/02/99	2.00	16.00	1.70	0.00	7.30	3.10	2.70	3.30	2.30	9.00	9.00	2.30	2.30	61.00
White Creek	04/03/98	1.00	6.70	1.70	2.00	9.30	6.00	6.00	3.30	4.00	9.00	8.70	4.70	3.00	65.30
Wise Creek	04/05/98	1.30	5.70	1.00	0.70	9.70	6.00	6.00	3.00	4.00	4.00	9.00	6.30	1.30	58.00
Wood Creek	04/11/98	9.00	5.00	10.30	11.00	15.00	7.70	7.70	8.30	8.30	9.30	9.30	10.00	11.00	122.00

Table 8d. 1998-2003 WRD's Habitat Assessment Scores (Impaired Southeastern Plains)

Name	Date	Bottom Substrate	Pool Substrate	Pool Variability	Channel Alteration	Sediment Deposition	Channel Sinuosity	Channel Flow Status	Bank Vegetation (Left)	Bank Vegetation (Right)	Bank Stability (Left)	Bank Stability (Right)	Riparian Zone (Left)	Riparian Zone (Right)	Habitat Total
Bay Creek	05/29/98	3.00	0.67	1.33	5.00	1.00	0.00	6.33	4.67	5.00	4.00	4.33	8.33	8.33	52.00
Big Grocery Creek	06/01/00	6.23	7.33	7.33	15.43	8.57	17.00	7.67	2.33	2.10	3.33	3.10	8.57	8.90	97.90
Big Horse Creek	07/12/00	8.43	10.00	14.00	16.43	8.00	14.00	4.83	1.65	2.40	3.33	4.18	5.42	7.67	100.85
Big Indian Creek	08/20/02	16.77	11.83	13.17	17.67	10.67	12.00	9.67	1.50	1.50	3.67	3.67	8.50	7.67	118.77
Bluff Creek	06/02/00	12.08	11.60	10.67	16.00	10.17	14.00	10.42	3.08	4.40	4.02	4.57	8.33	7.77	117.60
Cedar Creek	05/03/00	2.33	0.00	0.00	16.00	1.00	16.00	3.00	1.33	1.33	1.00	1.00	9.67	9.67	62.83
Crooked Creek	07/12/00	11.93	12.00	11.90	16.67	10.00	7.00	8.17	2.83	2.77	3.50	4.10	7.50	7.33	105.70
Deep Creek	05/10/00	6.67	5.10	11.07	16.43	12.67	17.00	10.50	3.77	3.60	3.17	3.17	5.33	6.00	104.47
Flat Creek	05/09/00	7.40	7.00	8.60	16.23	7.17	15.00	10.23	5.63	5.23	5.00	4.50	9.07	9.00	109.73
Folsom Creek	05/03/00	3.00	7.00	6.00	15.67	2.33	17.00	2.33	1.67	1.67	1.67	1.67	3.83	3.67	67.50
Gum Swamp Creek	05/10/00	4.00	9.77	8.83	19.33	12.17	16.00	4.17	2.17	1.83	5.83	5.67	9.33	9.33	108.43
Hartley Branch	05/12/99	3.67	5.67	2.33	2.00	1.00	9.00	17.33	7.33	7.33	6.33	6.33	9.33	9.33	86.67
Horse Creek	05/04/00	7.17	9.10	3.17	15.93	11.27	15.00	12.33	3.87	3.60	4.57	4.00	9.67	9.27	108.93
Horse Creek	05/04/00	6.93	9.00	3.23	15.27	7.00	17.00	11.33	5.90	6.17	5.83	5.43	3.10	2.93	99.13
House Creek	05/03/00	1.67	0.00	0.00	11.00	0.33	16.00	3.00	1.33	1.33	0.67	1.33	9.67	9.67	56.00
Limestone Creek	05/11/00	8.57	8.67	9.33	15.73	4.43	19.00	8.93	5.57	6.10	6.67	6.67	7.90	9.00	116.57
Mossy Creek	06/01/00	8.40	9.33	10.43	13.68	10.32	14.00	9.73	2.35	3.67	3.60	4.83	3.27	7.92	102.03
Otter Creek	05/03/00	11.33	10.93	10.25	17.57	15.00	18.00	12.83	4.83	4.40	5.33	4.27	9.20	2.33	126.28
Sturgeon Creek	05/03/00	11.00	9.32	11.00	17.27	11.33	19.00	11.33	2.42	2.75	3.92	3.63	9.43	9.67	122.07
Ten Mile Creek	08/09/00	13.43	10.27	10.33	15.77	11.60	17.00	11.23	8.17	8.27	6.67	6.67	6.10	6.00	131.50

Table 9a. 1998-2003 WRD's Field Measurements (Unimpaired Piedmont)

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Riffles	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Alcovy River	09/10/99	15.0	0.10	525	0.0	16	1.15	22.40	7.67	68.9	7.3	12.8	22	35
Bear Creek	10/24/00	7.0	0.16	245		5	0.73	16.70	9.00					
Beaverdam Creek	04/18/99	4.7	0.10	164.5	3	1	0.53	12.7	9.16	86.3	N/A	6.11	39.0	45
Big Sandy Creek	04/08/98	8.7	0.20	304.5	0	9	0.95	25.4	7.13	70.3	7.46	11.30	N/A	N/A
Buck Creek	04/20/99	10.2	0.27	357	1	13	1.40	21.6	7.05	52.5	7.01	14.10	15.0	20
Chambliss Creek	04/14/98	5.0	0.70	175	0	6	0.68	19.8	8.12	71.9	7.35	16.40	N/A	N/A
Deer Creek	04/14/98	4.3	0.10	150.5	3	4	0.64	19.0	9.05	67.6	6.68	5.48	N/A	N/A
Douglas Creek	04/05/98	2.5	0.10	87.5	1	5	0.70	18.3	9.66	53.8	7.03	N/A	N/A	N/A
Falling Creek	04/06/99	8.4	0.13	294	0	1	0.55	24.8	7.35	136.2	7.76	9.62	55.0	65
Freeman Creek	07/10/03	4.9	0.19	172	5	1	0.60	22.5	9.03	45.8	7	8.6	14	20
Herds	04/04/98	4.3	0.10	150.5	1	3	0.58	23.7	7.39	-	7.03	5.59	N/A	N/A
Herds Creek	06/05/03	4.9	0.23	175	0	5	0.88	20.5	7.61	58	7	8.3	20	25
Honey Creek	08/06/03	8.4	0.22	292	0	7	0.85	24	8.93	56.5	7	6.93	15	25
Kinnard Creek	04/05/98	3.8	0.10	133	0	0	0.00	21.7	8.25	64.7	7.09	15.50	N/A	N/A
Lee Creek	04/02/98	3.4	0.10	119	0	0	0.50	16.8	10.20	43.5	7.22	16.90	N/A	N/A
Little Buck Creek	04/01/99	2.9	0.09	101.5	2	2	0.70	14.0	8.04	37.6	N/A	28.70	16.0	20
Little Deer Creek D/S DOT	05/16/98	4.0	0.15	140	0	1	0.95	15.2	9.30	N/A	N/A	N/A	N/A	N/A
Little Falling Creek	04/09/98	4.3	0.10	150.5	0	7	0.65	24.6	6.64	123.8	7.18	10.80	N/A	N/A
Long Branch	04/06/98	2.5	0.20	87.5	0	6	0.70	20.2	10.64	38.2	6.65	6.94	N/A	N/A
No Business Creek	07/31/03	4.8	0.32	168	4	3	0.80	27	7.15	98.5	7	2.88	31	30
Panther Creek	04/05/98	3.1	0.10	108.5	3	3	0.60	19.4	9.04	36.7	-	-	N/A	N/A
Peeksville Creek	04/05/99	2.7	0.08	94.5	0	0	0.00	17.6	8.21	40.3	6.88	10.70	15.0	20
Peeksville Creek	09/21/01	2.8	0.07	98	0	0	0.00	18.00	7.35	42.9	7.0	8.5	17	25
Praire Creek	04/10/98	5.2	0.30	182	0	14	0.99	22.8	6.93	47.0	6.80	12.80	-	-
Rock Creek	04/30/99	3.2	0.00	112	2	3	0.46	20.6	7.87	311.4	5.90	7.76	N/A	N/A

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Riffles	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Rocky Creek - Bibb	04/12/98	5.8	0.31	203	3	7	1.00	13.9	7.29	89.6	N/A	5.83	37.0	50
Rocky Creek Monroe	04/05/99	8.0	0.10	280	2	1	0.50	25.4	8.15	50.7	7.52	6.50	14.0	25
Sabbath Creek	04/01/99	4.8	0.22	168	4	8	1.30	13.7	6.80	186.1	N/A	3.65	83.0	70
Swan Creek D/S	04/11/98	6.3	0.37	221	0	11	1.22	20.80	6.37	56.7	6.5	5.8	34	40
Swan Creek D/S	04/08/99	4.7	0.27	165	0	7	0.89	20.50	8.89	53.4	6.5	10.0	19	30
Swan Creek D/S	09/21/00	7.3	0.26	255.5	1	17	1.20	23.1	6.59	54.7	7.21	11.30	N/A	N/A
Swan Creek D/S	09/21/01	5.8	0.29	203	1	13	0.95	20.0	6.74	42.7	6.90	8.70	12.0	25
Swan Creek U/S	04/11/98	3.5	0.12	122.5	3	5	0.46	22.9	7.93	38.3	N/A	6.14	N/A	N/A
Swan Creek U/S	04/08/99	2.8	0.17	98	5	0	0.00	21.9	8.55	46.8	6.87	8.53	13.0	20
Tobesofkee Creek upper	09/18/03	9.0	0.62	314	3	7	99.00	23.5	7.27	56.6	7.25	8.94	15	20
Tobesofkee Creek lower	04/05/99	9.8	0.17	343	0	4	0.75	23.0	6.92	188.1	7.49	13.10	20.0	45
Towaliga River upper	04/06/99	10.0	0.47	350	3	4	1.50	22.6	5.92	63.9	7.5	7.14	23	30
Towaliga River lower		12.5	0.25	437.5	0	15	1.05	21.4	6.70	57.8	6.28	13.80	22.0	35
Town Branch U/S Jackson WPCP	04/08/98	2.9	0.80	101.5	3	4	0.68	22.1	7.74	56.0	7.31	7.14	N/A	N/A
Troublesome Creek	04/06/99	6.3	0.09	220.5	0	1	0.70	22.5	8.52	67.3	7.11	16.30	28.0	40
Tussahaw Creek lower	09/21/01	8.5	0.27	298	0	11	1.65	19.00	7.04	44.5	6.5	17.9	13	25
Tussahaw Creek lower	04/06/99	9.2	0.34	322	0	13	1.50	20.6	7.17	49.8	N/A	15.80	13.0	20
Tussahaw Creek tributary	09/21/01	3.9	0.23	137	2	3	0.93	18.9	7.86	34.1	--	10.6	10	15
Tussahaw Creek tributary	04/04/99	4.0	0.22	140	3	3	1.20	22.8	7.01	35.7	6.86	16.00	8.0	5
Tussahaw Creek tributary	06/05/03	5.2	0.16	181	4	2	0.92	17.4	11.12	33.3	6.5	16.8	11	15
Tussahaw Creek upper	04/06/99	4.8	0.43	168	5	8	1.40	23.9	6.66	46.3	6.84	31.40	13.0	20
Yellow Creek	04/14/98	5.2	0.10	182	1	10	0.59	24.3	6.29	51.5	7.11	10.70	N/A	N/A
Yellow Water Creek Trib D/S	04/09/98	2.0	0.07	70	1	0.79	3	22.90	7.3	197.9	7.0	40	N/A	N/A
Yellow Water Creek U/S	04/06/99	4.6	0.23	161	0	3	1.50	25.4	7.60	74.3	7.02	17.60	21.0	45
Yellow Water Creek D/S	04/07/99	4.6	0.25	161	0	3	1.30	24.5	7.08	130.1	6.71	20.20	27.0	45
Yellow Water Creek lower	04/10/98	7.0	0.20	245	1	11	1.00	23.8	7.48	75.2	7.15	16.40	N/A	N/A

Table 9b. 1998-2003 WRD's Field Measurements (Unimpaired Southeastern Plains)

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Bends	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Alligator Creek	08/23/00	8.2	0.27	287	3	8	0.85	25.10	7.33	21.8	6.0	4.5	5	15
Big Creek	05/09/00	4.9	0.20	172	4	1.0	0.68	19.90	6.49	85.7	7.0	12.7	49	49
Big Creek	05/09/00	8.6	0.37	301	5	8	1.40	18.10	6.91	99.4	7.0	24.3	68	80
Big Indian Creek lower	08/22/00	8.5	0.50	298	4	13	1.80	22.20	7.22	70.7	6.5	7.3	21	40
Big Indian Creek lower	10/15/01	8.3	0.78	291	3	7	1.45	18.50	7.98	64.2	6.5	6.1	19	15
Big Indian Creek upper	05/11/00	7.7	0.47	270	11	10	1.80	19.70	5.57	34.7	6.0	10.9	10	10
Little Ocmulgee River	08/23/00	4.0	0.15	140	1	2	0.70	23.9	6.65	160.6	7.0	2.1	68	80
Little Shellstone Creek	06/10/99	2.6	0.19	91		2	0.55	21.40	7.54	78.7	7.4	5.8	40	45
Little Sturgeon Creek	05/03/00	3.3	0.37	116	6	6	0.97	12.70	5.23	36.6	6.0	4.9	13	10
Mossy Creek	06/01/00	8.3	0.46	291	2	8	1.40	20.90	7.22	18.3	6.0	6.7	6	5
Richland Creek	08/22/00	3.9	0.30	137	4	5	1.32	23.30	2.74	112.9	7.0	27.9	68	65
Savage Creek	05/10/00	6.2	0.37	217	5	6	1.60	19.00	4.58	112.2	18.6	7.3	67	68
Shellstone Creek	06/10/99	4.7	0.40	165		7	1.40	21.90	5.56	125.1	7.1	31.9	62	65
South Prong Creek	08/20/02	6.0	0.35	210				20	7.57	173.3	7.5	1	102.6	100
South Prong Creek	08/22/00	4.3	0.27	151	6	7	0.95	19.8	8.73	159.1	7	2.64	100	100
South Prong Creek	10/15/01	5.6	0.29	196	6	9	0.95	18.5	8.52	157.9	7	1.2	119.7	120
Sugar Creek	07/12/00	5.4	0.37	189	2	9	2.00	24.40	3.38	96.5	6.5	8.9	30	30
Whitewater Creek	05/10/00	4.2	0.41	147	4	7	1.40	23.30	6.85	15.5	6.0	3.5	3	10

Table 9c. 1998-2003 WRD's Field Measurements (Impaired Piedmont)

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Riffles	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Barbershela Creek	07/14/03	5.3	0.51	187	0	13	1.22	22.20	7.38	77.9	7.0	11.3	26	30
Big Sandy Creek	07/01/98	5.3	0.10	186	0	1	0.50	22.70	7.43	50.4	6.6	17.3	N/A	N/A
Brown Branch	06/01/99	3.8	0.10	133	6	0	0.00	18.30	7.90	34.3	6.8	18.9	11	15
Butlers Creek	07/17/98	4.1	3.90	144	2	2	0.30	26.10	6.94	79.1	7.3	5.8	N/A	N/A
Cabin Creek lower	09/16/99	6.8	0.30	238	0	7	1.30	19.70	5.91	1325.0	7.9	4.2	51	350
Cabin Creek mid	09/16/99	6.2	9.80	217	0	6	0.74	21.20	4.70	1909.0	8.1	3.1	68	560
Cabin Creek upper	09/16/99	2.4	0.10	84	0	2	0.78	24.30	5.36	3061.0	8.3	2.7	68	900
Calaparchee Creek	07/06/98	1.8	7.10	63	0	0	0.00	26.30	5.99	97.8	7.3	20.1	N/A	N/A
Carr Branch	05/30/03	3.0	0.18	105	1	0	0.00	17.40	10.78	39.9	7.0	5.7	14	15
Cobbs Creek	06/20/03	4.5	0.27	158	1	4	1.25	22.20	7.75	81.4	7.0	7.5	51	40
Cole Creek	07/24/98	2.2	7.50	77	3	2	0.43	18.40	7.80	33.9	7.0	15.8	N/A	N/A
Doolittle Creek	07/14/03	5.7	0.19	199	3	8	0.00	22.30	8.18	89.2	7.0	11.0	28	25
Dried Indian Creek	07/10/03	5.4	0.30	189	2	8	0.90	24.80	7.25	64.5	7.0	10.5	18	25
Eightmile Creek	05/18/98	2.6	0.10	91	2	5	0.95	18.70	9.18	41.7	6.9	8.1	N/A	N/A
Garner Creek	07/15/03	5.8	0.21	203	0	10	0.91	21.10	7.84	85.5	7.0	8.9	34	30
Gladesville Creek	06/28/98	3.5	0.20	123	1	5	0.70	24.60	N/A	132.8	7.7	16.0	N/A	N/A
Hansford Branch	05/14/98	1.4	0.10	49	2	3	0.40	16.50	8.64	44.3	7.2	27.9	N/A	N/A
Harmon Pye Branch	06/18/98	3.2	0.10	112	0	8	0.55	22.70	10.51	130.9	7.7	5.6	N/A	N/A
Herds Creek	06/22/98	6.2	0.20	217	2	9	0.97	23.00	6.98	66.5	6.8	16.4	N/A	N/A
Intrenchment Creek	08/13/03	7.9	0.28	277	0	1	0.60	24.20	5.76	159.1	7.0	8.5	55	50
Island Shoal Creek	07/10/03	5.5	0.38	193	0	5	1.20	23.00	8.12	48.2	6.5	13.7	13	20
Little Chehaw Creek	05/14/99	2.6	7.10	91	0	0	0.00	16.60	4.09	77.8	7.3	19.1	27	40

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Riffles	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Little Deer Creek U/S DOT	05/06/98	5.5	0.10	193	0	3	0.70	17.30	9.04	94.2	7.4	19.4	N/A	N/A
Little Deer Creek	06/10/99	2.8	6.10	98	1	1	1.00	23.00	7.70	124.4	7.4	8.3	50	65
Little Deer Creek Tributary	05/06/98	2.4	0.20	84	2	3	0.55	18.00	8.50	185.1	N/A	N/A	N/A	N/A
Little Suwanee Creek	08/07/03	6.1	0.56	226	0	6	--	25.1	5.60	70.1	7.0	10.2	22	25
Long Branch	06/03/98	3.3	0.00	116	3	5	0.45	21.10	8.14	127.9	7.5	5.4	N/A	N/A
Malholms Creek	07/21/99	2.4	0.20	84	0	2	0.72	24.90	6.97	44.7	6.9	35.9	26.0	60.0
Mill Dam Creek	05/12/98	3.1	0.10	109	2	5	0.80	18.60	8.30	45.9	N/A	11.7	N/A	N/A
Mountain Creek	05/29/03	4.6	0.18	162	2	2	0.89	15.90	8.25	68.0	7.0	14.9	22	25
Phinazee Creek	05/18/98	4.0	0.10	140	7	13	0.75	20.20	9.09	25.9	6.7	9.0	N/A	N/A
Red Creek	07/01/98	6.3	0.30	221	0	0	0.00	23.60	7.95	44.1	6.8	14.0	N/A	N/A
Rock Creek	09/09/98	2.0	0.00	70	3	1	0.28	21.80	7.91	382.8	7.8	20.3	N/A	N/A
Rocky Creek - Butts	06/18/98	3.0	0.10	105	1	1	0.30	21.30	10.48	48.3	6.7	4.1	N/A	N/A
Rocky Creek - Jasper	06/10/98	2.1	8.50	74	0	7	0.30	18.50	9.15	38.7	6.6	7.1	N/A	N/A
Rocky Creek - Monroe	07/01/98	4.6	0.10	161	1	8	6.50	24.00	7.76	38.2	6.8	6.5	N/A	N/A
Rocky Creek - Bibb	04/30/99	4.3	0.10	151	1	4	1.15	12.70	8.13	61.2	N/A	11.6	23	35
Rum Creek	09/17/98	3.8	0.10	133	2	5	0.42	20.60	7.36	129.8	7.4	7.9	N/A	N/A
Sand Branch	05/07/98	2.7	0.10	95	5	5	0.00	16.80	9.76	35.8	7.1	19.7	N/A	N/A
Sand Branch	05/07/98	2.7	0.10	95	3	4	0.00	16.80	9.72	34.1	7.1	12.7	N/A	N/A
Scoggins Creek	07/17/98	2.4	0.00	84	0	0	0.00	24.40	7.24	142.1	7.4	16.8	N/A	N/A
Shoal Creek	06/20/03	5.4	0.22	200	3	7	0.67	21.80	7.80	81.1	7.0	5.9	51	40
Snapping Shoals Creek	08/06/03	7.5	0.29	262	4	10	1.05	23.40	8.98	106.9	6.8	14.3	28	25
South River	10/14/03	13.3	0.20	466	0	4	0.98	19.00	7.36	135.9	7.5	4.2	56	50
Third Branch	07/17/98	2.2	0.10	77	0	2	0.66	23.50	4.67	129.1	7.0	21.4	N/A	N/A
Tobesofkee Creek lower	06/08/99	5.2	0.10	182	0	1	0.65	20.60	6.76	262.4	7.5	14.6	16	65

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Riffles	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Tobesofkee River middle	07/13/98	3.6	0.10	126	1	4	0.75	24.30	6.61	282.4	7.6	17.8	N/A	N/A
Tobesofkee Creek upper	09/14/98	4.2	0.30	147	1	10	0.50	18.70	7.22	53.3	6.9	14.9	N/A	N/A
Tobler Creek	07/06/98	5.3	3.20	186	0	0	0.00	27.40	6.15	82.0	7.5	2.7	N/A	N/A
Town Branch U/S Forsyth WTP	07/06/98	2.9	0.20	102	1	12	1.00	23.00	6.35	114.5	7.0	7.6	N/A	N/A
Town Branch D/S Forsyth WTP	07/06/98	3.8	0.10	133	6	4	0.53	24.90	6.51	208.3	6.8	27.5	N/A	N/A
Town Branch	07/15/98	2.9	8.30	102	0	1	0.70	24.10	7.44	437.7	7.3	5.7	N/A	N/A
Tributary to Little Haynes Creek	05/30/03	4.2	0.11	133	0	0	0.00	17.00	8.20	51.3	6.5	8.5	17	20
Tributary to Tobesofkee Creek	07/13/98	1.5	0.14	53	2	2	0.40	25.10	6.15	555.0	7.2	33.8	N/A	N/A
Walnut Creek upper - Jones	09/09/98	2.8	4.50	98	0	0	0.00	19.90	7.96	68.1	N/A	9.8	N/A	N/A
Walnut Creek lower - Jones	05/14/99	8.5	7.80	298	0	0	0.00	16.90	4.79	82.2	7.7	8.8	31	50
Walnut Creek - Crawford	05/12/99	4.2	9.50	147	0	0	0.00	16.50	8.39	64.2	7.4	8.6	24	40
White Creek	05/18/98	4.3	0.10	151	3	6	0.50	21.30	7.90	42.9	6.7	21.0	N/A	N/A
Wise Creek	06/02/98	7.7	9.30	270	0	1	0.43	26.10	7.92	110.6	7.5	N/A	N/A	N/A
Wood Creek	08/20/98	3.1	0.10	109	4	2	0.35	22.40	7.99	41.8	7.2	8.7	N/A	N/A

Table 9d. 1998-2003 WRD's Field Measurements (Impaired Southeastern Plains)

Name	Date	Average Stream Width (m)	Average Stream Depth (m)	Reach Length (m)	Number of Bends	Number of Pools	Deep Pool (m)	Water Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (uS)	pH (SU)	Turbidity (NTU)	Total Hardness (mg/L)	Alkalinity (mg/L)
Bay Creek	05/29/98	3.9	0.14	137	--	5	0.75	23.30	6.32	260.8	7.5	4.6	--	--
Big Grocery Creek	06/01/00	2.9	0.33	102	7	5	1.30	21.70	5.44	526.0	8.0	13.1	291	65
Big Horse Creek	07/12/00	4.3	0.40	151	5	7	1.56	24.20	2.04	44.4	6.0	3.3	11	15
Big Indian Creek	08/20/02	8.1	0.53	284	2	10	1.45	24.30	7.04	78.6	7.0	5.6	19	20
Bluff Creek	06/02/00	6.3	0.49	221	7	6	1.35	20.00	6.63	211.1	7.5	3.0	154	115
Cedar Creek	05/03/00	2.7	0.11	95	5	0	0.00	22.80	4.64	130.3	6.5	8.9	68	60
Crooked Creek	07/12/00	4.7	0.54	165	3	7	1.55	25.60	4.25	52.5	6.0	13.9	20	10
Deep Creek	05/10/00	2.0	0.27	70	7	1	1.50	22.60	7.12	14.0	6.0	7.0	4	5
Flat Creek	05/09/00	4.5	0.55	158	5	8	0.98	19.70	7.31	62.4	7.0	18.6	25	25
Folsom Creek	05/03/00	4.3	0.20	151	6	4	0.83	20.40	2.59	57.6	6.0	37.5	20	20
Gum Swamp Creek	05/10/00	3.1	0.28	109	10	4	1.04	19.20	3.37	89.1	6.5	4.2	43	35
Hartley Branch	05/12/99	2.5	0.22	88	--	1	0.58	22.40	7.74	13.5	6.3	11.3	3	10
Horse Creek	05/04/00	3.0	0.32	105	4	4	0.07	17.60	5.35	63.3	6.3	8.6	20	20
Horse Creek	05/04/00	3.5	0.31	123	5	1	0.63	18.60	5.80	48.2	6.3	11.6	16	10
House Creek	05/03/00	2.2	0.07	77	6	0	0.00	21.90	6.14	60.1	6.5	19.7	21	20
Limestone Creek	05/11/00	4.1	0.36	144	11	5	1.32	19.80	2.43	312.5	7.0	16.1	188	200
Mossy Creek	06/01/00	8.4	0.58	294	4	7	1.50	19.90	7.41	19.2	6.5	11.9	5	5
Otter Creek	05/03/00	5.1	0.71	179	6	4	1.50	17.40	3.92	78.1	6.5	8.7	28	25
Sturgeon Creek	05/03/00	4.4	0.54	154	7	5	1.60	16.90	4.56	54.8	6.0	7.9	19	15
Ten Mile Creek	08/09/00	3.8	0.26	133	7	7	1.05	28.40	2.42	146.0	6.5	6.5	54	60

3.0 SOURCE ASSESSMENT

A healthy aquatic ecosystem requires a healthy habitat. The major disturbance to stream habitats is erosion and sedimentation. As sediment is carried into the stream, it changes the stream bottom and smothers sensitive organisms. Turbidity associated with sediment loads may also impair recreational and drinking water uses (GA EPD, 1998).

A source assessment characterizes the known and suspected sources of sediment in the watershed for use in a water quality model and the development of the TMDL. The general sources of sediment are point and nonpoint sources. National Pollutant Discharge Elimination System (NPDES) permittees discharging treated wastewater are the primary point sources of sediment as total suspended solids (TSS) and/or turbidity.

Nonpoint sources of sediment are diffuse sources that cannot be identified as entering the water body at a single location. These sources generally involve land use activities that contribute sediment to streams during a rainfall runoff event. Nonpoint sources of sediment included in the source assessment analysis are:

- Silviculture,
- Agriculture,
- Grazing areas,
- Mining sites,
- Roads, and
- Urban Development.

For nonpoint sources involving silviculture, the Georgia Forestry Commission (GFC) was consulted for information and parameters regarding silviculture activities. The Natural Resources Conservation Service (NRCS) was consulted for information and parameters regarding agricultural activities.

3.1 Point Source Assessment

For purposes of this TMDL, NPDES permitted facilities will be considered point sources. Discharges from municipal and industrial NPDES permitted facilities may contribute sediment to receiving waters as TSS and/or turbidity. There are twelve permitted NPDES discharges identified in the impaired Ocmulgee River Basin watersheds. Table 10 provides the permitted flow and TSS concentrations for the NPDES permitees located in the impaired Ocmulgee River Basin watersheds. These include municipal facilities and mining sites where material is processed and that discharge process wastewater. The average levels (whether daily, weekly, or monthly) and the highest daily maximum levels discharged over the last three years (2003-2005) are also given. These data were determined from analysis of the available Discharge Monitoring Reports (DMR).

There are no permitted discharges from surface mines which do not process material in the impaired Ocmulgee River Basin watersheds. Surface mine locations are constantly changing. These discharges consist of accumulated surface water, pit-pumpout water, groundwater, and stormwater runoff associated with mining activities authorized under approved Mined Land Use Plans. These discharges have no numeric limits but shall not violate the Water Quality Standards in the receiving streams and shall not discharge floating solids or visible foam in other than trace amounts.

Table 10. NPDES Permit Limits for Facilities in the Impaired Watersheds of the Ocmulgee River Basin

FACILITY	NPDES PERMIT NO	FACILITY TYPE	RECEIVING WATER	FLOW (MGD)		TSS (mg/L)	
				Monthly Average	Weekly Average	Monthly Average	Weekly Average
Barnesville – Gordon Road WPCP	GA0021041	Municipal	Tobesofkee Creek	1.20	1.50	30.0	45.0
				0.95	1.96	18.6	41.5
Forsyth – Northeast WPCP	GA0031801	Municipal	Town Creek	1.40	1.80	30.0	45.0
				0.49	1.26	4.8	34.3
Fort Valley WPCP	GA0031046	Municipal	Bay Creek	2.20	2.75	30.0	45.0
				1.18	2.63	4.6	21.0
Griffin – Cabin Creek WPCP	GA0020214	Municipal	Cabin Creek	1.50	1.88	30.0	45.0
				0.98	1.99	10.8	28.0
Jackson – Southside WPCP	GA0023931	Municipal	Town Branch	0.70	0.875	20.0	30.0
				0.14	0.32	2.2	11.0
Perry WPCP	GA0021334	Municipal	Big Indian Creek	3.00	3.75	30.0	45.0
				2.65	6.72	16.7	44.9
Rockdale Co. – Almand Branch WPCP	GA0021610	Municipal	Almand Branch	1.25	1.56	20.0	30.0
				0.74	0.87	4.0	16.0
				FLOW (MGD)		TSS (mg/L)	
				Daily Average	Daily Max	Daily Average	Daily Max
Hanson Aggregates Southeast - Monroe Quarry – outfall 001	GA0046558	Industrial	Little Deer Creek	NA	NA	55	110
				0.15	0.40	5.9	15.0

FACILITY	NPDES PERMIT NO	FACILITY TYPE	RECEIVING WATER	FLOW (MGD)		TSS (mg/L)	
				Daily Average	Daily Max	Daily Average	Daily Max
Hanson Aggregates Southeast - Monroe Quarry – outfall 002	GA0046558	Industrial	Little Deer Creek	NA	NA	55	110
				0.30	1.50	9.6	68.0
Rinker Materials	GA0036781	Industrial	Rock Creek	NA	NA	55	110
				0.15	NA	32.8	134.0
Spring Industries, Inc.	GA0003409	Industrial	Cabin Creek	NA	NA	470 kg/day	941 kg/day
				1.02	1.68	31.2	181.0
Vulcan Construction Materials	GA0023736	Industrial	Unnamed tributary to Yellow River	NA	NA	55.0	110.0
				0.27	1.26	13.7	58.0

Permit Limits
Actual data from monthly DMR

Some storm water runoff is covered under the NPDES Permit Program. It is considered a diffuse source of pollution. Unlike other NPDES permits that establish end-of-pipe limits, storm water NPDES permits establish controls. Currently, regulated storm water discharges include those associated with industrial activities, including construction sites one acre or greater, and large and medium municipal separate storm sewer systems (MS4s).

Storm water discharges associated with industrial activities are currently covered under Georgia's General Storm Water NPDES Permit (GAR000000). This permit requires visual monitoring of storm water discharges, site inspections, implementation of Best Management Practices (BMPs), and record keeping. Table 11 provides a list of those facilities in the Ocmulgee River Basin that have submitted a Notice of Intent to be covered under Georgia's General Storm Water NPDES Permit Associated with Industrial Activities (820 in total). It is unknown at this time whether these facilities are contributing sediment to the watershed.

Table 11. Industrial Facilities with a General Storm Water NPDES Permit in the Ocmulgee River Basin

Facility Name	NOI No.	County
ABF Freight System, Inc.	00160	Clayton
Abrams Fixture Corporation	01011	Fulton
Advanced Design & Packaging	03627	Fulton
Aeon Box Company, Inc.	00772	Gwinnett
Air Garwin / Heliserv	04140	Dekalb
Air Jamaica	04054	Fulton
Air Products & Chemicals, Inc.	00403	Rockdale
Airborne Express	04096	Clayton
Aircraft Service Int'l Group	04051	Fulton
Airport Group International	03839	Fulton
Airtran Airlines	02972	Fulton
Alchem Plastics	04057	Fulton
Alcoa Cladding Systems	01883	Dodge
Alcoa Recycling Company	01302	Fulton
Alcott Chromatography, Inc.	03673	Gwinnett
All American Gourmet Company	00076	Fulton
Allhegany Rubber, Inc	03439	Bibb
Alliant Food Service	01199	Gwinnett
Allied Diagnostics Imaging Resources, Inc.	00557	Gwinnett
Allied Readymix, Inc. - Lawrenceville	01481	Gwinnett
Allied Systems, Ltd.	01950	Clayton
Allwaste Recovery Systems	02148	Fulton
Alpharetta Ready Mix	00316	Fulton
Alterman Transport Lines, Inc.	02367	Dekalb
Alterman Transport Lines, Incorporated	03806	Dekalb
Amerada Hess Corporation	02427	Dekalb
Ameraparts International, L.L.C.	03602	Fulton
America West Airlines	04053	Fulton
American Airlines	04099	Clayton
American Classic Enterprises, Inc.	01454	Dekalb
American Coach Lines, Inc.	02455	Gwinnett
American Freightways, Inc.	02646	Clayton

Facility Name	NOI No.	County
American Freightways-MCN	03749	Bibb
Amtico International, Inc.	03714	Dekalb
Anitox Corp.	03661	Gwinnett
Anitox Corporation	03620	Gwinnett
Apac Georgia, Inc. - Lithonia Ii Asphalt Plant	02546	Dekalb
Apac Srb - Macon Facility	02837	Jones
Armour Drive Ready Mix	00272	Fulton
Ashland Chemical Company	02432	Dekalb
Atlanta Concrete Block	00295	Fulton
Atlanta Film Converting Company, Inc.	01771	Fulton
Atlanta Fuel Company	03928	Fulton
Atlanta North	04056	Fulton
Atlanta Offset	04041	Fulton
Atlanta Oil Services	02730	Dekalb
Atlanta Oil Services	02755	Dekalb
Atlanta Pressure Treated Lumber	02179	Fulton
Atlanta Sand & Supply Company	03712	Crawford
Atlanta Web Printers, Inc.	01746	Dekalb
Atlanta Wire Works, Inc.	01418	Clayton
Atlantic Cotton Mills	00768	Bibb
Atlantic Precast Concrete, Inc.	01611	Fulton
Atlantic Steel Industries, Inc.	01400	Fulton
Auto Chlor Systems	02028	Fulton
Auto Ventshade	03964	Gwinnett
Averitt Express, Inc.	01033	Fulton
Avgroup Airport Services, Inc.	01507	Dekalb
B. H. Hall Ready Mixed Concrete	00045	Laurens
Bagcraft Corporation Of America	02324	Clayton
Ballenger Plant Site	01439	Bibb
Bank Of America Aviation	01459	Dekalb
Bankhead Contracting, Inc.	03924	Fulton
Bankhead Manufacturing Group, Inc.	03765	Fulton
Bankhead Manufacturing Group, Inc.	03766	Fulton
Bassett Furniture Ind. Of N.C.	00138	Laurens
Batton Jackson Oil Company	01795	Spalding
Bennett Graphics	03609	Gwinnett
Berry Hill Airport	01831	Henry
BFI Waste Systems Of North America, Inc.	02256	Gwinnett
BGS Of Georgia, Inc.	01032	Fulton
Bibb Auto Parts Salvage, Incorporated	03781	Bibb
Bibb Yarns, Inc.	00669	Bibb
Big Haynes Creek Water Reclamation Facility	04009	Gwinnett
Biolab, Inc.	00933	Rockdale
Bio-Tek Industries, Inc.	03989	Fulton
Blaze Recycling And Metals, Inc.	03919	Gwinnett
Blount Construction Asphalt Plant	02157	Fulton
Blue Bird Body Company	00947	Peach
Blue Bird Wanderlodge	00962	Peach

Facility Name	NOI No.	County
Blue Circle Aggregates - Camp Creek Sand Plant	00058	Fulton
Blue Circle Materials - Airport Plant	03415	Fulton
Blue Circle Williams Bros. - Commerce Dr Concrete	00277	Bibb
Blue Circle Williams Bros. - Forsyth Concrete Plt	00274	Monroe
Blue Circle Williams Bros. - Franklinton Sand Pit	00288	Bibb
Blue Circle Williams Bros. - Glenwood Paving Plant	00287	Fulton
Blue Circle Williams Bros. - Macon Sand Pit	00290	Bibb
Blue Circle Williams Bros. - Warner Robins Sand Pi	00289	Bibb
Bob's Auto Salvage	01731	Peach
Bolton Road Landfill	01308	Fulton
Bombardier Transportation	04098	Clayton
Bonsal American Incorporated	00623	Dekalb
Boral Bricks - Altizer Mine	03423	Fulton
Borden Inc.	01256	Bibb
Bosse Concrete Products	03997	Clayton
Boulevard Avenue Regulator	03606	Fulton
Boulevard Avenue Regulator	03833	Fulton
Bowater, Inc. - Duluth Woodyard	01376	Gwinnett
Box USA Group, Inc.	02166	Fulton
Brenntag(Y) Mid-South Inc	04039	Fulton
British Airways	03013	Clayton
Broadview Vehicle Maintenance Facility	02405	Dekalb
Buford Readymix	03682	Gwinnett
Bulk Mail Center Vehicle Maintenance Facility	01223	Fulton
C & D Technologies , Inc.	00572	Rockdale
C. R. Bard, Inc. Medical Division	01878	Newton
C. W. Matthews - Plant #11	01131	Clayton
Cabana Foods	02482	Dekalb
Cadillac Products, Inc.	00896	Fulton
Cagle's, Inc.	03561	Houston
Canterbury Engineering Company	01636	Dekalb
Capital Color Printing, Inc.	02418	Clayton
Carbonic Industries Corporation	02353	Henry
Cardia Systems, Inc.	01457	Dekalb
Cargill, Inc.	01367	Fulton
Cargill, Inc.	00241	Telfair
Carolina Commercial Heat Treating	01553	Rockdale
Carolina Freight Carriers Corporation	01540	Gwinnett
Carolina Freight Carriers Corporation	02227	Henry
Carolina Freight Carriers Corporation – ATW	00495	Fulton
Carpenter Company	02202	Rockdale
Castrol Heavy Duty Lubricants	04037	Fulton
Caterpillar Griffin Power Systems	03514	Spalding
Cedar Farm, Inc.	02045	Lamar
Centennial Farms Dairy	04034	Fulton
Central Metals Company	01052	Fulton
Central Of Georgia Railroad Company	00800	Fulton
Central Recycling Of Norcross	01054	Gwinnett

Facility Name	NOI No.	County
Charles M. Thompson	02987	Houston
Cheatham Chemical Company	03807	Dekalb
Cherokee Metals Company	03557	Gwinnett
Citgo Petroleum Corporation	01558	Dekalb
Citgo Petroleum Corporation	02471	Fulton
City Of Atlanta - Custer Avenue CSO Facility	02956	Fulton
City Of Atlanta - Hill Street (Street Operations)	02961	Fulton
City Of Atlanta - Intrenchment Creek WRC	02834	Fulton
City Of Atlanta - McDaniel Street CSO Facility	02955	Fulton
City Of Atlanta - South River WRC	02831	Fulton
City Of Atlanta - Utoy Creek WRC	02833	Fulton
City Of Barnesville - Goggins Road Mswlf	03202	Lamar
City Of Griffin - Spalding County Airport	00142	Spalding
City Of Perry - Chapel Road/Ford Creek Mswlf	01394	Houston
City Of Perry Mswlf	01118	Houston
Clairon Metals Corporation	03630	Newton
Clayton County - R. L. Jackson WPCP	01503	Clayton
Clear Creek CSO Facility	03834	Fulton
Coastal Transport, Inc.	02349	Fulton
Coats & Clark	01648	Coffee
Coca Cola Co.	04055	Fulton
Cochran Solid Waste Landfill	01012	Bleckley
Coffee County Area 3 Cr 129/17 Mi. C&D Landfill	03573	Coffee
College Park Readymix	01477	Fulton
Colonial Baking Company	01357	Bibb
Colonial Pipeway Co	04139	Dekalb
Color Graphics	04038	Fulton
Color Image, Inc.	03527	Gwinnett
Comet Express, Inc.	03588	Gwinnett
Commercial Cold Storage, Inc.	00082	Dekalb
Commercial Cold Storage, Inc.	01897	Fulton
ConAgra Flour Milling Company	02231	Bibb
Confederate Avenue Regulator	03607	Fulton
Consolidated Resource Recovery	01569	Fulton
Consolidated Resource Recovery, Inc.	04004	Fulton
Constar International, Inc.	02047	Fulton
Contech Construction Products, Inc.	02657	Gwinnett
Contech Construction Products, Inc.	01198	Rockdale
Continental Airlines	04052	Fulton
Continental Plastic Containers #430	03899	Fulton
Con-Way Southern Express	03614	Gwinnett
Con-Way Southern Express - Nat	00985	Fulton
Conyers/Rockdale County - Miller Bottom Road Mswlf	01888	Rockdale
Cooper Standard Automotive	03918	Spalding
Coreslab Structures (Atlanta) Inc.	01713	Clayton
Couch Construction Company, Inc.	01235	Gwinnett
Couch Ready Mix USA-Byron	04011	Peach
Covington Municipal Airport	01452	Newton

Facility Name	NOI No.	County
Crawford County Mine #1	03760	Crawford
Crescent Airways, Inc. - Dekalb Peachtree Airport	01303	Dekalb
Crown Central - Doraville Terminal	01027	Dekalb
Crown Cork & Seal Company, Inc.	00606	Fulton
Crown Cork & Seal Company, Inc.	03160	Fulton
CSR Hydro Conduit Corporation	02734	Dekalb
CSR Hydro Conduit Corporation	00531	Henry
Curtice Burns Foods	00089	Macon
Curtis 1000, Inc.	01546	Fulton
Custom Silicas Corporation	02791	Gwinnett
Dan River, Inc. - Fort Valley Plant	01802	Peach
Danfoss Maneurop S.A.	03531	Gwinnett
Dap, Inc.	00044	Rockdale
Dave Transportation Services, Inc.	00900	Fulton
Davidson Mineral Properties, Inc.	03069	Dekalb
Davis Mfg. & Pkg, Inc.	02245	Dekalb
Davis Road Landfill	01597	Bibb
Decatur Vehicle Maintenance Facility	02410	Dekalb
Delphi Energy & Engine Management Systems	00220	Ben Hill
Delta Air Lines	04058	Fulton
Delta Technical Ops Center	04059	Fulton
Dender Dist. Company, Inc.	01564	Spalding
Dexter Axle Company	03568	Jasper
Dhl Express USA	04004	Fulton
Diverseylever	03717	Fulton
Dixie Truck & Parts Company	02215	Bibb
Dodge County Mswlf	01689	Dodge
Donzi Lane Landfill	00935	Dekalb
Doraville Ready Mix	00303	Gwinnett
Dot - Office Of Air	04066	Fulton
Downtown Readymix	03180	Fulton
Dr. C. P. Savage Airport	01447	Macon
Dryden Oil Company, Inc.	02475	Fulton
DSC Logistics	02370	Clayton
DSC Logistics	02371	Clayton
DSI Transports, Inc.	01337	Fulton
Duluth Ready Mix	00312	Gwinnett
Durango Paper Company	03869	Ben Hill
Duron, Inc.	00548	Dekalb
Dutton's Machine Shop	03564	Gwinnett
Dykes Paving & Construction Company, Inc.	03575	Gwinnett
E. R. Snell - Norcross Asphalt Plant	01409	Gwinnett
E. R. Snell - Asphalt Terminal	01410	Dekalb
E. R. Snell - Lithonia Asphalt Plant	01411	Dekalb
E. R. Snell - Lithonia Shop	01415	Dekalb
E. R. Snell - Snellville Shop	01413	Gwinnett
Eagle Transport	02254	Dekalb
Earthgrains	04095	Clayton

Facility Name	NOI No.	County
Earthgrains Baking Companies, Inc.	01356	Dekalb
Eastman Ready Mix	00273	Dodge
Ema, Inc.	01433	Fulton
Emery Worldwide - Atg	03549	Clayton
Emery Worldwide - Atl	03544	Clayton
EMS Technologies, Inc.	00608	Gwinnett
Englewood (Sewer Operations)	02962	Fulton
Ennis Paint	03718	Fulton
Entenmann's	01423	Dekalb
Enterprise Transportation Company	03615	Clayton
Enterprise Transportation Company	03628	Dekalb
Ernst Jefferson Plant	03705	Gwinnett
Ervac, Inc.	01301	Newton
Eton Aeroquip, Inc.	03617	Ben Hill
Eurochem Intl Corp	04060	Fulton
Evans Cabinet Corporation	03331	Laurens
Excel - SCJ Warehouse Operation	04046	Fulton
Exopack, Llc	00201	Spalding
Exxon Company - Doraville Terminal	00819	Dekalb
F. Wayne Hill Water Resources Center	04010	Gwinnett
Fabral	03592	Butts
Fairburn Concrete Block	00293	Fulton
Fairburn Public Works	04062	Fulton
Farmer Oil, Inc.	02681	Newton
Federal Express Ftya	02927	Fulton
Federal Express Qfea	02925	Fulton
Fedex	02969	Fulton
Fedex Express Gvla	04061	Fulton
Fedex Foprt	04097	Clayton
Fedex Ground	04028	Gwinnett
Feldspar Shady Dale Mine	03394	Jasper
Fibervisions Incorporated	00183	Newton
Fitzgerald Mswl	04114	Ben Hill
Fitzgerald Pole Company, Inc.	00079	Ben Hill
Fitzgerald Timber & Leasing Company	01991	Ben Hill
Fleetwood Homes Of Georgia, Inc. #39	03103	Ben Hill
Flexsteel Industries, Inc.	00349	Laurens
Florida Rock Industries, Inc.	00528	Wilcox
Flowers Bakery	04138	Dekalb
Foamex, Lp	02934	Fulton
Foamex, Lp	01107	Rockdale
Forest Park Asphalt Plant	03852	Clayton
Forest Park Asphalt Plant #78431	03757	Clayton
Forest Park Transfer Station	03638	Clayton
Forsyth - Diamond Waste Mswlf	01810	Monroe
Forsyth Hadwoods, Inc.	01554	Monroe
Fowler's Auto Parts	03576	Gwinnett
French's Ice Cream	01448	Fulton

Facility Name	NOI No.	County
Freudenberg Texbond Lp	03965	Bibb
Frigidaire Home Products	03349	Telfair
Fruit Growers Express	02261	Fulton
Fulton County - Morgan Falls Mswlf	01570	Fulton
G & K Services	04029	Gwinnett
Gaang Organizational Mtn Shop #14	02708	Laurens
Gaddis Trucking, Inc.	03586	Gwinnett
Gary Concrete Products, Inc.	00072	Fulton
GC Quality Lubricants, Inc.	02664	Bibb
Geiger International, Inc.	03503	Fulton
General Cable Company	00380	Dekalb
General Chemical Corporation	01673	Fulton
Genzyme Surgical Products	03537	Dekalb
Georgia - Pacific Corp. - Monticello Studmill	00943	Jasper
Georgia - Pacific Corporation	02397	Gwinnett
Georgia - Pacific Corporation	00378	Henry
Georgia Army National Guard Hq Starc	02696	Fulton
Georgia Chips/ Rayonier	03866	Dodge
Georgia Chips/Rayonier	02812	Dodge
Georgia Chips/Rayonier	02810	Lamar
Georgia Oxide Corporation	00591	Newton
Georgia Steel	04050	Fulton
Gibson - Homans Company	01468	Rockdale
Gilman Building Products Company	01758	Laurens
Gilman Converted Products	01993	Dodge
Glenn Mcclendon Trucking Company	01808	Dekalb
Glenwood Ready Mix	00271	Fulton
Global Stone Georgia Hydrate	03713	Bibb
GM Service Parts Operations	01573	Dekalb
GMS Block	04027	Gwinnett
Gold Kist Feed Mill	01644	Coffee
Golden State Foods	00130	Rockdale
Goodwin Company	01677	Gwinnett
Grace Construction Products	00482	Gwinnett
Graham Packaging Company	02625	Fulton
Grayson Ready Mix	00311	Gwinnett
Grayson Readymix	01482	Gwinnett
Great Southern Wood Preserving	00431	Rockdale
Green's Ferry CSO Facility	03835	Fulton
Greyhound Lines, Inc.	01498	Fulton
Griffin - Porter Lumber Company	00198	Bleckley
Griffin Industries, Inc.	01995	Laurens
Griffin Power Systems	03387	Spalding
Griffin Quarry	03155	Spalding
Griffin Quarry	04018	Spalding
Griffin Ready Mix	03841	Spalding
Griffith Rubber	02607	Peach
Guardian Automotive Covington Plant	03604	Newton

Facility Name	NOI No.	County
Gun Club Landfill	02958	Fulton
Guthrie Machine Works	03675	Gwinnett
Gutter World	03656	Dekalb
Gwinnett Water Treatment Plant	03414	Gwinnett
H & L Electronics, Inc.	01696	Dekalb
H. B. Fuller Company	01140	Clayton
H. B. Fuller Company	01142	Newton
H. B. Fuller Company	02877	Newton
H.J. Heniz , L.P.	03764	Dekalb
Hanson - Big Ledge	04134	Dekalb
Hanson - Monroe County Quarry	03994	Monroe
Hanson - Pine Mountain	04135	Dekalb
Hartsfield - Fire Maintenance	04094	Clayton
Hartsfield Atlanta International Airport	00206	Clayton
Hartsfield Atlanta International Airport/Awa	03880	Fulton
Hartson-Kennedy Cabinet Top Co.	03475	Bibb
Hawkinsville Ready Mix	00280	Pulaski
Henkel Adhesives	03886	Dekalb
Henry County Mswlf	00137	Henry
Heraeus Amersil, Inc.	00579	Gwinnett
Heraeus Quartztech Incorporated	03722	Gwinnett
Herbert Smart Airport	01088	Bibb
Hercules Incorporated	03931	Bibb
Herman Miller - Georgia Operations	01136	Dekalb
Hess Polyurethanes, Incorporated	03818	Fulton
Hickory Ridge Sanitary Landfill	00129	Dekalb
Hill Manufacturing Company, Inc.	01127	Fulton
Hitachi Telecom (USA), Inc.	03720	Gwinnett
Holan Manufacturing, Inc.	00207	Spalding
Hood Packaging Corporation	01772	Dekalb
Hormel Foods Corp.	04133	Dekalb
Hoshizaki America, Inc.	03979	Spalding
House Of Cheatham	04130	Dekalb
Howard Sheppard, Inc.	02415	Dekalb
Hussmann Corporation	03953	Gwinnett
Hy Tec Manufacturing, Inc.	01248	Fulton
Hydro Conduit Corporation	00195	Dekalb
I. Schneid, Inc.	00266	Fulton
Industrial Chemicals Incorporated	03966	Clayton
Industrial Chemicals, Inc.	00672	Fulton
Inland Container Corporation	01020	Bibb
International Dairy Queen, Inc.	01979	Dekalb
International Paper - Liquid Packaging Division	01427	Fulton
International Processing Corporation	02185	Clayton
International Storage Systems, Inc.	03386	Newton
Intrenchment Creek Water Reclamation Center	03831	Dekalb
Introsul, Inc.	03729	Houston
ITT Rayonier - Eastman Log Sorting Yard	02383	Dodge

Facility Name	NOI No.	County
Jackson Readymix	03624	Butts
Japan Airlines	03400	Fulton
Jeff Hardy, Inc.	03910	Gwinnett
Jet Corr Ii	03277	Rockdale
Jetserv Pdk Inc.	04132	Dekalb
John Astleford Company	03567	Gwinnett
John Divensey Inc	04049	Fulton
Johns-Manville, Inc.	03334	Bibb
Johnson Controls	04070	Gwinnett
Keebler Company	01585	Fulton
Kellett Investment Corp	04131	Dekalb
Kellogg USA Inc.	03977	Fulton
Key Road Landfill	02960	Fulton
Kik Georgia, Inc.	03728	Henry
King David Kosher, Incorporated	01930	Bibb
Knox - Rivers Construction - Ruby Asphalt Plant	00773	Jones
Koch Materials Company	01161	Dekalb
Kohl & Madden	00678	Fulton
Kor-Chem Incorporated	03817	Fulton
Kraft General Foods	02643	Fulton
Kysor Warren	00004	Rockdale
L & L Wood Products, Inc.	01698	Pulaski
Lafarge Aggregates Se- Clayton Quarry	04091	Clayton
Lafarge Road Marking	03456	Fulton
Lamar County Regional Solid Waste Authority	03318	Lamar
Lambent Technologies, Inc.	03580	Gwinnett
Lane Limited	03927	Dekalb
Langdale Forest Products Company	00262	Dodge
Lawrenceville Ready Mix	00297	Gwinnett
Lawrenceville Transfer Station	03636	Gwinnett
Lawrenceville Transfer Station	04067	Gwinnett
Lb Recycling	03737	Newton
Lee Machining, Inc.	03671	Gwinnett
Leeman Architectural	03897	Fulton
Leeman Architectural Woodwork	03816	Fulton
Leggett & Platt Inc.	04044	Fulton
Lester Laboratories, Inc.	00162	Fulton
Lewis B. Wilson Solid Waste Disposal Site	01169	Bibb
Lifetime Cabinet, Incorporated	03332	Laurens
Lilburn Readymix	01471	Gwinnett
Liochem, Inc.	00119	Rockdale
Lithonia Concrete Block	00294	Dekalb
Lithonia Lighting	03147	Rockdale
Lithonia Lighting	03329	Rockdale
Lithonia Lighting, Inc.	00649	Dekalb
Lithonia Ready Mix	00320	Dekalb
Little Bear Creek WPCP	00563	Fulton
Live Oak Landfill & Recycling Center	00346	Dekalb

Facility Name	NOI No.	County
Lockheed Air Terminal, Inc.	02174	Fulton
Locust Grove Ready Mix	03409	Henry
Louis Dreyfus Energy Corporation	01316	Bibb
Louis Dreyfus Energy Corporation	01321	Fulton
Louis Dreyfus Energy Corporation	01318	Spalding
Lxe, Inc.	00583	Gwinnett
M & W Distribution Service, Inc.	00815	Fulton
M. Goldstein & Sons, Inc.	01322	Spalding
M. S. Carriers, Inc.	03026	Dekalb
Macon (Brosnan Yard)	03980	Bibb
Macon Air	00217	Bibb
Macon Chips, Inc.	02596	Bibb
Macon Concrete Block	00286	Bibb
Macon Iron & Paperstock, Inc.	03858	Bibb
Macon Municipal Landfill	01090	Bibb
Macon Quarry	03154	Monroe
Macon Ready Mix	00275	Bibb
Macon Wire Company	03624	Jones
Macs Customized Distribution Service, Inc.	01945	Gwinnett
Makita Corporation Of America	02999	Gwinnett
Manders Premier, Inc.	02246	Fulton
Mapei East Corporation	00469	Fulton
Marathon Ashland Petroleum Llc	00356	Bibb
Marathon Ashland Petroleum Llc	00355	Dekalb
Marble Masters Of Middle Georgia	03937	Houston
Marcraft, Inc.	03709	Coffee
Marine Manufacturing	03471	Coffee
Marine Manufacturing, Building #2	03711	Coffee
Marta - Browns Mill Heavy Maintenance	01264	Fulton
Martin Marietta Aggregates - Ruby Quarry	01907	Jones
Martin Transport, Incorporated	03824	Wilcox
Master Concrete	01852	Gwinnett
Matlack, Inc.	01700	Clayton
McClure Brothers, Inc.	01596	Fulton
McDaniel Street Cost Facility	03836	Fulton
McKenzie Tank Lines Incorporated	03844	Lamar
McKenzie Tank Lines, Inc.	01592	Lamar
Mead Road Borrow Pit	02986	Bibb
Mead Westvaco Corp	04136	Dekalb
Menlo Worldwide Forwarding	04092	Clayton
Menlo Worldwide Forwarding	04093	Clayton
Metal Assets Acquisition, Llc	03985	Fulton
Metro Alloys, Inc.	03048	Fulton
Metro Alloys, Inc.	03855	Fulton
Metro Material, Inc. Plant Iv	03874	Dekalb
Metro Materials, Inc. - Plant #1	00344	Dekalb
Metro Materials, Inc. - Plant #2	00343	Gwinnett
Micromeritics Instrument Corp.	03672	Gwinnett

Facility Name	NOI No.	County
Middle Georgia Regional Airport	01089	Bibb
Midwest Airlines	04064	Fulton
Mindis Recycle World	01957	Fulton
Mindis Recycling	01958	Dekalb
Mindis Recycling	01941	Fulton
Mindis Recycling	01955	Fulton
Mindis Recycling	01956	Fulton
Mindis Recycling	01959	Fulton
Mitchell's Used Auto Parts, Inc.	01601	Rockdale
Mizuno USA	03521	Gwinnett
Mm Systems Corporation	00109	Dekalb
Mohawk Industries	00519	Laurens
Momar, Inc	04110	Fulton
Monarch Wine Company Of Georgia	02113	Fulton
Montrose Timber And Leasing Company	01757	Laurens
Morgan Falls Landfill	03815	Fulton
Mrs. Smith's Bakery Of Suwanee, Inc.	03723	Gwinnett
Mullins Brothers Paving	04063	Fulton
Mullite Co. Of America - English Mining Area	00662	Macon
Nabisco Biscuit Company	02508	Fulton
Nacom Corporation	02992	Spalding
National Cement Company	02286	Gwinnett
Nationsway Transport Service, Inc.	01520	Clayton
Naylor, Inc.	00244	Fulton
Network Communications, Inc.	03473	Gwinnett
New Holland North America, Inc.	02806	Laurens
Newco Tract 1 & 2 Surface Mine	03941	Gwinnett
Newco Tract 3 Surface Mine	03900	Gwinnett
Newell Recycling Of Atlanta, Inc.	02198	Fulton
Newell Recycling Of Atlanta, Inc.	03536	Gwinnett
Nisshinbo Automotive Manufacturing, Inc.	03327	Newton
No Business Creek WRF	00630	Gwinnett
Noell, Inc.	02555	Fulton
Norcross Asphalt Plant	04069	Gwinnett
Norcross Vehicle Maintenance Facility	02404	Gwinnett
Norfolk Southern - Atlanta (Pegram) Motor Shop	00795	Fulton
Norfolk Southern - East Point Yard	00793	Fulton
Norfolk Southern Railway Company	00796	Dekalb
Norfolk Southern Railway Company	00794	Fulton
Norfolk Southern Railway Company	00804	Fulton
Norfolk Southern-Hapeville Auto Ramp	04048	Fulton
North America Packaging Corporation	03939	Dekalb
North American Van Lines Fleet Services	01166	Clayton
North Avenue CSO Facility	03832	Fulton
North Metro Vehicle Maintenance Facility	01224	Gwinnett
Northwest Airlines	04075	Clayton
Northwest Airlines, Inc.	01340	Clayton
Nutra-Tech Of Georgia	02183	Coffee

Facility Name	NOI No.	County
Onyx Environmental Services	04084	Clayton
Osan/Atlantic Oil Company, Inc.	03865	Bibb
Our-Way, Inc.	03573	Dekalb
Overnite Transportation Co	04068	Gwinnett
Overnite Transportation Company	01823	Fulton
Owens - Brockway Glass Container, Inc.	00597	Fulton
Owens Brockway Plastics Products, Inc.	02299	Fulton
Owens Corning - Eastman Plant	02897	Dodge
Oxford Ready Mix	00309	Newton
Oxford Transportation	03469	Gwinnett
Packaging Corporation Of America	02724	Fulton
Pactive Corporation	00218	Newton
Paper Stock Dealers, Inc.	01787	Fulton
Paragon Trade Brands	03854	Bibb
Parex, Inc.	02007	Dekalb
Pavtiv Corporation	01604	Bibb
Payne Bros. Inc.	03587	Gwinnett
Pdk, Llc	04129	Dekalb
PDQ Manufacturing, Inc.	01244	Fulton
Peachtree Aviation	04128	Dekalb
Peacock's Auto Salvage	03770	Jones
Pella Of Georgia	01305	Gwinnett
Pepsi Bottling Group, Llc	03763	Fulton
Perkins Brothers Auto Wrecking & Salvage	02595	Jones
Perry Ready Mix	00285	Houston
Pet Incorporated	00023	Fulton
Pet Incorporated	01921	Fulton
Phillips Services/Atlanta, Inc.	00192	Clayton
Philpot Contracting Company, Inc.	02095	Fulton
Phoenix Refrigeration Systems, Inc.	01111	Rockdale
Piedmont Hardwood Flooring, Llc	03948	Bibb
Piedmont Moulding Company, Inc.	01435	Rockdale
Pine Ridge Recycling	03583	Butts
Pittman Construction Company	02070	Dekalb
Pitts Pulpwood Company	02360	Wilcox
Plant 45 Lawrenceville	03596	Gwinnett
Politex U. S., Inc.	03034	Bibb
PPG Architectural Finishes, Inc.	00700	Fulton
PPG Industries, Inc. - Works 18	00191	Houston
Pratt & Whitney Engine Services	04035	Fulton
Prestige Parking	04003	Fulton
Printpack, Inc.	02103	Fulton
Printpack, Inc.	02104	Fulton
Pull-A-Part	03516	Dekalb
Purina Mills, Inc.	00568	Telfair
Puritan/Churchill Chemical Company	02173	Fulton
Quality Powder Coatings	03585	Gwinnett
Qubecor World Direct- Doraville	03917	Dekalb

Facility Name	NOI No.	County
R & R Auto Parts	00438	Gwinnett
Rayloc Division Of Geniune Parts Company	00084	Fulton
Rayonier - Lumber City Lumber Operations	01097	Telfair
Raytheon Aircraft	04065	Fulton
Reckitt & Colman, Inc.	01348	Dekalb
Recycle America Of Atlanta	00833	Fulton
Recycling Depot	01187	Gwinnett
Red Oak Ready Mix	00319	Fulton
Reeves Construction Company	01975	Houston
Reeves Construction Company	01969	Jones
Reeves Construction Company	01966	Laurens
Reeves Construction Company	01968	Monroe
Reeves Construction Company	02995	Wheeler
Regional Recycling, Llc	01940	Fulton
Regional Recycling, Llc	03703	Fulton
Regional Recycling, Llc	01188	Laurens
Rentz Cabinet Corporation	03340	Laurens
Rexam Beverage Can Company	00255	Clayton
Richmond Screw Anchor	02726	Fulton
Ricoh Electronics, Inc.	03039	Gwinnett
RM Clayton Water Reclamation Center	03830	Fulton
Roadway Express, Inc.	01289	Dekalb
Roadway Express, Inc.	01283	Gwinnett
Roadway Express, Inc.	02733	Gwinnett
Robarb, Inc.	00087	Dekalb
Robins Air Force Base	01138	Houston
Rock - Tenn Company	00455	Bibb
Rock - Tenn Company	00884	Dekalb
Rock - Tenn Company	00886	Dekalb
Rock - Tenn Company	02658	Dekalb
Rockdale Auto Salvage	01832	Rockdale
Rock-Tenn Company	00885	Gwinnett
Rockwell Automation Allen - Bradley	02794	Laurens
Rogers Lake Road Landfill	03547	Dekalb
Rose Acre Farms, Inc.	01806	Newton
Ross Of Georgia, Inc.	03710	Dodge
Ross Of Georgia, Inc. (Coleman Pit)	03905	Telfair
Ross Of Georgia, Inc. (Hester Pit)	03907	Telfair
Ross Of Georgia, Inc. (Jackson Pit)	03906	Telfair
Ross Of Georgia, Inc. (Shepherd Pit)	03904	Telfair
RPS, Inc - Atlanta	03485	Clayton
RPS, Inc.	02818	Clayton
RPS, Inc. - Macon	03489	Bibb
RPS, Inc. - Marietta	03492	Fulton
RTC Transportation	03004	Clayton
Ruan Leasing Company	02881	Clayton
Ruan Leasing Company	00386	Dekalb
Ruan Leasing Company	00383	Gwinnett

Facility Name	NOI No.	County
Rudolph Foods	03635	Gwinnett
Russell Athletic, Inc.	00775	Gwinnett
Safeguard Landfill	03599	Fulton
Safety Carrier, Inc.	01610	Clayton
Saia Motor Freight Line, Inc.	03149	Fulton
Saia Motor Freight Lines	04090	Clayton
Saint-Gobain Desjonqueres Manufacturing, Inc.	03424	Newton
Sara Lee Bakery Group	01373	Clayton
Schering-Plough Animal Health	40040	Fulton
Schnee - Morehead, Inc.	00003	Gwinnett
Schwerman Trucking Company	00697	Gwinnett
Scientific - Atlanta, Inc.	01117	Dekalb
Scientific - Atlanta, Inc.	02229	Gwinnett
Scientific - Atlanta, Inc.	02362	Gwinnett
Scientific - Atlanta, Inc.	03985	Gwinnett
Scientific Atlanta	03982	Gwinnett
Sealy Mattress Company	01880	Rockdale
Service Lines, Inc.	01420	Fulton
Shaw Industries, Inc. Plant 8	03449	Ben Hill
Shepard Construction Co., Inc. - Houston Co. Plant	03470	Houston
Shepherd Construction - Plant 620	02892	Dekalb
Shepherd Construction - Plant 627	02891	Newton
Shepherd Construction - Plant 630	02878	Monroe
Shoal Creek Landfill C/D	00143	Spalding
Sidel Mold	04073	Gwinnett
Siemens Energy & Automation - Atl Service Center	01855	Dekalb
Signature Flight Support	04127	Dekalb
Sika Corporation	02062	Dekalb
Silvan Hardwoods, Llc	01040	Dodge
Simplicity Manufacturing, Inc.	00012	Henry
Skc, Inc.	03419	Newton
Sky Clean	04087	Clayton
SMI Georgia Rebar	02033	Gwinnett
Solvay Advanced Polymer	04033	Fulton
Sonoco - Forest Park Plant	01149	Clayton
South Fulton Airport	01388	Fulton
South River Water Reclamation Center	03829	Fulton
Southeast Culvert, Inc.	03632	Gwinnett
Southeast Paper Recycling Co.	03430	Fulton
Southeast Paper Recycling Co.	00814	Gwinnett
Southeast Precast	00134	Dekalb
Southeastern Stages, Inc.	02072	Fulton
Southern Aluminum Finishing Company	03518	Fulton
Southern Aluminum Finishing Company	03519	Fulton
Southern Brass & Aluminum	02776	Dekalb
Southern Company Services, Inc.	01807	Dekalb
Southern Graphic Systems, Incorporated	03796	Fulton
Southern Mills - Atlanta Plant	02035	Fulton

Facility Name	NOI No.	County
Southern Rails Terminal Company	00799	Bibb
Southern Saw Service, Inc.	01616	Fulton
Southern Wall Products, Incorporated	03786	Dekalb
Southern Wood Piedmont Company	00269	Fulton
Southern Zinc Company	01380	Fulton
Southside Wastewater Treatment Plant	03559	Gwinnett
Sp Newsprint Company	02994	Laurens
Spectra Metal Sales, Inc.	03667	Fulton
Spectrum Atlanta, Llc	03947	Fulton
Spectrum Paints, Incorporated	03804	Dekalb
Spring Wheat Bakers	03461	Henry
Springs Industries - Carver Road Plant	02540	Spalding
Springs Industries - Griffin Finishing Plant	02534	Spalding
Springs Industries - Plant No. 1	02529	Spalding
Springs Industries - Plant No. 2	02530	Spalding
Springs Industries - Plant No. 5	02531	Spalding
Spruill Products, Inc.	02721	Gwinnett
SSES-East Point Transfer Station	02780	Fulton
SSES-Ford/Hapeville Transfer Station	02781	Fulton
Standard Transfer Company, Inc.	02528	Fulton
Stanley Bostitch	00158	Fulton
Star Packaging Corporation	03600	Clayton
Stein Printing Company	01871	Fulton
Stimsonite Corporation	02680	Fulton
Stockbridge Ready Mix	00315	Henry
Stockbridge Transfer Station	03982	Lamar
Stone Container Corporation	01618	Dekalb
Stone Container Corporation	03708	Dodge
Stone Mountain - Britt Memorial Airport	02318	Dekalb
Stroud's Southern Printing	02242	Fulton
Sugar Hill Mswlf	01102	Gwinnett
Sugar Hill Water Reclamation Facility	04008	Gwinnett
Sun Chemical Corporation	02678	Fulton
Sun Chemical-GPI Division	03926	Fulton
Sundor Brands, Inc.	00854	Fulton
Support Terminal Services,Inc. - Macon Terminal	01329	Bibb
Sureco, Inc.	01985	Peach
Suttles Truck Leasing	00174	Dooly
Suzanna's Kitchen, Inc.	03593	Gwinnett
Sweetheart Cup Company, Inc.	02127	Rockdale
Swift Adhesives	00604	Dekalb
Swift Atlanta	04074	Gwinnett
Swift Atlanta, Inc.	03505	Gwinnett
Swissport Cargo Services	04088	Clayton
T. Marzetti Company	02203	Fulton
Table Pride, Inc.	00260	Dekalb
Tanyard Creek CSO Facility	03837	Fulton
Tara Plastics	04085	Clayton

Facility Name	NOI No.	County
Tecumseh Products Company - Douglas Operations	02624	Coffee
Telfair County - S2316 Mswlf	00238	Telfair
Tharpe Mine	02603	Twiggs
The Bibb Company - Plant Camellia	01381	Monroe
The Clorox Company	00405	Clayton
The Clowhite Company	00622	Henry
The Concrete Company	03535	Henry
The Concrete Company	02459	Wilcox
The Concrete Company - Bolingbroke	03353	Monroe
The Concrete Company - Fitzgerald	02458	Ben Hill
The Concrete Company - Fort Valley	02466	Peach
The Concrete Company - Griffin	01121	Spalding
The Concrete Company - Hitchcock	03351	Jones
The Concrete Company - Perry	01120	Houston
The Concrete Company - Warner Robins	01123	Houston
The Concrete Company, Perry Plant	03972	Houston
The Glidden Company	01043	Fulton
The Permite Corporation	02672	Dekalb
The Pillsbury Company	03659	Fulton
The Quaker Oats Company	03432	Fulton
The Sherwin-Williams Company	03498	Clayton
The Telechem Corporation	00165	Dekalb
The Torrington Company	01362	Gwinnett
The Valspar Corporation	00197	Newton
The William Carter Company	01450	Lamar
The William Carter Company	01451	Lamar
Theremodynamics	04116	Bibb
Thomas Concrete	04137	Dekalb
Thomas Concrete Of Georgia, Inc. (Atlanta Plant)	00783	Fulton
Thomaston Mills, Inc. - Griffin Divison	02247	Spalding
Tin Inc	04036	Fulton
Tindall Concrete Georgia, Inc.	01372	Clayton
Tindall Corporation - Conley	03484	Clayton
Toga Mfg Inc.	01621	Butts
Tolleson Lumber Company	00468	Houston
Tolleson Lumber Company, Inc.	00465	Houston
Total Distribution Services, Inc.	02262	Gwinnett
Toto Industries (Atlanta), Inc.	02428	Fulton
TPC	02098	Clayton
Trane Company	03988	Bibb
Transamerica Printing	03674	Gwinnett
Transport Corporation Of America, Inc.	03570	Dekalb
Transus Intermodal - Atlanta Terminal	00545	Fulton
Treutlen - Wheeler County Mswlf	02469	Wheeler
Tri Chem Company	02032	Fulton
Triangle Pacific Corporation	00620	Fulton
Trojan Battery Company	00688	Dekalb
Tucker Concrete Company, Inc.	01325	Gwinnett

Facility Name	NOI No.	County
Tuscarora, Inc.	02419	Rockdale
Tyco Plastics Lp	02628	Newton
U.S. Army - Amsa #46(G)	00875	Bibb
U.S.P.S. Vehicle Maintenance Facility	02406	Fulton
U.S.P.S. Vehicle Maintenance Facility	02409	Fulton
Umco Steel, Inc.	03556	Gwinnett
Unilever Bestfoods Na	04047	Fulton
Unimast Incorporated	03571	Henry
United Airlines	03009	Clayton
United Airlines	04032	Fulton
United Beechcraft, Inc.	01462	Dekalb
United Oil Brokers, Inc.	00173	Fulton
United Parcel Service, Inc.	00753	Spalding
United States Can Company	03182	Clayton
Universal Forest Products, Inc.	02119	Fulton
Universal Refining, Llc	02117	Fulton
Unocal Corporation	02190	Dekalb
US Airways	04086	Clayton
US Penetentiary	04042	Fulton
USCO Distribution Services, Inc.	02328	Clayton
USF Holland Inc.	02819	Dekalb
Utoy Creek Water Reclamation Center	03828	Fulton
Vantage Products Corporation	00016	Rockdale
Vaughn Lumber Company	01119	Monroe
Viasat	04071	Gwinnett
Victor Forstmann, Inc.	02889	Laurens
Visy Protective Packaging	03188	Fulton
Vought Aircraft Industries	01207	Houston
Vulcan Materials	04030	Fulton
W. H. "Bud" Barron Airport	03504	Laurens
W. R. Grace	00878	Fulton
W. R. Grace & Co. - Conn.	00136	Fulton
Wacter Metals & Recycling	03462	Bibb
Walker Concrete	04031	Fulton
Walker Concrete - Jonesboro	04089	Clayton
Warehouse Distribution Service	00807	Fulton
Warner Robins Ready Mix	00276	Houston
Washington Specialty Metals	03669	Gwinnett
Waste Management Of Atlanta - South	00831	Clayton
Waste Management Of Macon	00829	Bibb
Waste Recovery, Inc.	03494	Fulton
Watkins Motor Lines, Inc.	00616	Bibb
Wayne Farms, Llc - College Park	01505	Fulton
Weaver Automotive, Inc.	03555	Fulton
Wellington Leisure Products, Inc.	01724	Monroe
Westside Wastewater Treatment Plant	03558	Gwinnett
Weyerhaeuser	02692	Fulton
Weyerhaeuser Company	00533	Spalding

Facility Name	NOI No.	County
Weyerhaeuser Impak Center	00919	Dekalb
Wheelers Manufacturing Company, Inc.	00456	Bibb
Whirlpool Quality Express	03727	Clayton
White Lightning Products	01108	Gwinnett
White Lightning Products Corporation	00863	Fulton
Willamette Valley Company	03056	Rockdale
Williams Bros. Lumber Company	03640	Gwinnet
Williams Brothers Trucking, Inc.	00434	Monroe
Williams Printing Co	04043	Fulton
Williamson Oil Company	04126	Dekalb
Wilson Trucking Corp	04072	Gwinnett
Wincup	02567	Dekalb
Winn-Dixie Atlanta Dc	04045	Fulton
Wise Recycling, Llc	03654	Fulton
Xtronix Corporation	00570	Gwinnett
Yellow Freight System, Inc.	01764	Bibb
Ykk Ap America, Inc.	01157	Laurens
Zarn, Inc.	00439	Fulton
Z-Car Atlanta	03563	Gwinnett

The MS4 permits have been issued under two phases. Phase I MS4 permits require the prohibition of non-storm water discharges (i.e., illicit discharges) into the storm sewer systems and controls to reduce the discharge of pollutants to the maximum extent practicable, including the use of management practices, control techniques and systems, as well as design and engineering methods (Federal Register, 1990). A site-specific Storm Water Management Plan (SWMP) outlining appropriate controls is required by and referenced in the permit. There are twenty-eight Phase I MS4s in the Ocmulgee River Basin (Table 12).

As of March 10, 2003, small MS4s serving urbanized areas are required to obtain a storm water permit under the Phase II storm water regulations. An urbanized area is defined as 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. Thirty counties and 56 communities are permitted under the Phase II regulations in Georgia. There are seventeen counties or communities located in the Ocmulgee River Basin that are covered by the Phase II General Storm Water Permit (Table 13). Those watersheds that occur within Phase I or Phase II MS4 areas as are listed in Table 14. The table provides the total area of each of these watersheds, and the percentage of the watershed that is an MS4 area.

Table 12. Phase I Permitted MS4s in the Ocmulgee River Basin

Name	Permit No.	Watershed
Atlanta	GAS000100	Ocmulgee, Flint, Chattahoochee
Avondale Estates	GAS000137	Ocmulgee, Chattahoochee
Bibb County	GAS000204	Ocmulgee
Clarkston	GAS000106	Ocmulgee, Chattahoochee
Clayton County	GAS000107	Ocmulgee, Flint
Dacula	GAS000139	Ocmulgee, Oconee
Decatur	GAS000110	Ocmulgee, Chattahoochee
DeKalb County	GAS000111	Ocmulgee, Chattahoochee
Duluth	GAS000112	Ocmulgee, Chattahoochee
East Point	GAS000114	Ocmulgee, Flint, Chattahoochee
Forest Park	GAS000116	Ocmulgee, Flint, Chattahoochee
Fulton County	GAS000117	Ocmulgee, Flint, Chattahoochee, Coosa
Grayson	GAS000140	Ocmulgee
Gwinnett County	GAS000118	Ocmulgee, Oconee, Chattahoochee
Hapeville	GAS000119	Ocmulgee, Flint
Jonesboro	GAS000120	Ocmulgee, Flint
Lake City	GAS000141	Ocmulgee, Flint
Lawrenceville	GAS000122	Ocmulgee
Lilburn	GAS000123	Ocmulgee
Lithonia	GAS000124	Ocmulgee
Lovejoy	GAS000142	Ocmulgee, Flint
Macon	GAS000203	Ocmulgee
Morrow	GAS000126	Ocmulgee, Flint
Norcross	GAS000127	Ocmulgee, Chattahoochee
Pine Lake	GAS000143	Ocmulgee
Snellville	GAS000133	Ocmulgee
Stone Mountain	GAS000134	Ocmulgee
Suwanee	GAS000144	Ocmulgee, Chattahoochee

Source: Nonpoint Source Permitting Program, GA DNR, 2006

Table 13. Phase II Permitted MS4s in the Ocmulgee River Basin

Name	Watershed
Centerville	Ocmulgee
Conyers	Ocmulgee
Griffin	Ocmulgee, Flint
Hampton	Ocmulgee, Flint
Henry County	Ocmulgee, Flint
Houston County	Ocmulgee
Jones County	Ocmulgee
Lilburn	Ocmulgee
Loganville	Ocmulgee
McDonough	Ocmulgee
Newton County	Ocmulgee
Peach County	Ocmulgee
Rockdale County	Ocmulgee
Spalding County	Ocmulgee, Flint
Stockbridge	Ocmulgee
Walton County	Ocmulgee
Warner Robins	Ocmulgee

Source: Nonpoint Source Permitting Program, GA DNR, 2006

Table 14. Percentage of Watersheds Occurring in MS4 Areas

Name	Total Area (acres)	% in MS4 area
Barbershela Creek	4,105.7	100.0
Carr Branch	1,637.9	24.6
Cobbs Creek	1,888.7	100.0
Doolittle Creek	4,365.2	100.0
Dried Indian Creek	3,952.7	73.2
Garner Creek	3,250.4	100.0
Intrenchment Creek	6,341.1	100.0
Little Suwanee Creek	5,877.0	100.0
Rocky Creek - Bibb	3,739.9	46.7
Shoal Creek	2,619.7	100.0
Snapping Shoals Creek	10,731.1	97.0
South River	35,842.3	100.0
Mossy Creek	52,817.3	0.9

Soil erosion from construction sites is also a major source of sediment in Georgia's streams. Georgia requires construction sites over one acre to have a General Storm Water NPDES permit. Since construction sites are regulated by NPDES permits, they will be considered as point sources. It is unknown if there are any construction sites in impaired watersheds of the Ocmulgee River Basin.

3.2 Nonpoint Source Assessment

Eroded soils from forests, cropland, mining sites, and other land can be transported to Georgia streams through runoff. Excessive sediment that reaches the water bodies can cause several changes to the stream. It can make the streams shallower and wider, affecting the stream's temperature, dissolved oxygen, flow rate and velocity. It can affect the ability of the stream to assimilate pollutants. It can change the diversity of fish populations and other biological communities. It can also cause increased flooding. In addition, harmful pollutants attached to the sediment can be transported to rivers and streams.

3.2.1 Silviculture

Georgia has 23.6 million acres of commercial forests. This represents approximately 64 percent of all of Georgia's land use. Approximately 68 percent of the commercial forests are privately owned, 25 percent are owned by industry, and 7 percent are publicly held (GA EPD, 1999).

The majority of soil erosion from forested land occurs during timber harvesting and the period immediately following, and during reforestation. Once the forest is re-established, very little soil erosion occurs. Timber harvesting includes the layout of access roads, log decks, and skid trails; the construction and stabilization of these areas; and the cutting of trees. Both hardwoods and pines are harvested throughout Georgia. A minimum harvest is usually ten acres and the percent of forest that is harvested each year varies from county to county. Table 15 lists the percent timberland and percent harvested per year by county.

3.2.2 Agriculture

Agriculture can be a significant contributor of nonpoint pollutants to rivers and streams. Sediment and nutrients are the major pollutants of concern and cropland is one of the major sources of soil loss due to sheet and rill erosion. Over the last century there has been a dramatic decrease in the amount of land farmed in Georgia. In 1950, there were 208,000 farms encompassing 26 million acres in Georgia (U.S. Department of Agriculture, National Agricultural Statistics Service website). In 2000, there were approximately 11.1 million acres of farmland in Georgia, with the number of farms estimated to be 50,000 and the average farm size being approximately 222 acres. This represents a 57 percent reduction in farmland.

With the reduction in farmland, there has also been a decrease in the amount of soil erosion. The National Resources Inventory found the total wind and water erosion on cropland and Conservation Reserve Program land in Georgia declined 38 percent, from 3.1 billion tons per year in 1982 to 1.9 billion tons per year in 1997 (USDA-NRCS, 1997). This suggests that the source of sediment in many of the impaired streams in the Ocmulgee River Basin may be the result of past land use practices. Thus, it is believed that if sediment loads are maintained at acceptable levels, streams will repair themselves over time.

Table 15. Percent Timberland and Percent Harvested per Year by County

County	Total Area (1000 acres)	Timberland (1000 acres)	Percent Timberland	Growing Stock Volume (million ft^3) [a]	Annual Volume Removal (million ft^3)	Annual percent Removal
Ben Hill	161.2	109.5	67.93%	62.3	11.7	18.78%
Bibb	160.0	88.0	55.00%	97.2	8.2	8.44%
Bleckley	139.1	78.6	56.51%	139.3	2.4	1.72%
Butts	119.4	83.9	70.27%	110.8	6.1	5.51%
Clayton	91.3	28.1	30.78%	36.9	3.6	9.76%
Coffee	383.4	242.4	63.22%	200.5	14.9	7.43%
Crawford	208.1	163.2	78.42%	119.3	9.5	7.96%
De Kalb	382.0	201.1	52.64%	117.8	1.2	1.02%
Dodge	320.4	204.7	63.89%	205.2	16.8	8.19%
Dooly	251.5	110.5	43.94%	151.8	5.2	3.43%
Fulton	338.4	125.7	37.15%	372.3	14.9	4.00%
Gwinnett	277.0	104.4	37.69%	227.6	13.3	5.84%
Henry	206.5	109.8	53.17%	198.8	8.0	4.02%
Houston	241.1	122.9	50.97%	167.0	2.6	1.56%
Jasper	237.1	190.7	80.43%	304.3	9.4	3.09%
Jeff Davis	213.4	151.6	71.04%	106.2	7.2	6.78%
Jones	252.0	210.7	83.61%	309.8	17.0	5.49%
Lamar	118.3	72.1	60.95%	81.2	3.3	4.06%
Laurens	520.1	312.2	60.03%	332.0	18.0	5.42%
Macon	258.1	156.2	60.52%	200.5	5.7	2.84%
Monroe	253.2	194.9	76.97%	261.8	9.0	3.44%
Newton	176.9	98.7	55.79%	240.5	7.7	3.20%
Peach	96.7	40.9	42.30%	28.2	-	-
Pulaski	158.3	79.8	50.41%	111.6	5.4	4.84%
Rockdale	83.6	39.9	47.73%	69.3	4.2	6.06%
Spaulding	126.7	66.9	52.80%	95.9	11.4	11.89%
Telfair	282.3	210.7	74.64%	190.9	14.8	7.75%
Twiggs	230.6	188.5	81.74%	214.8	20.3	9.45%
Upson	208.3	15.4	7.38%	227.3	6.7	2.95%
Walton	210.7	114.7	54.44%	250.4	2.7	1.08%
Wheeler	190.5	15.4	8.08%	159.2	7.1	4.46%
Wilcox	243.4	151.7	62.33%	167.7	6.5	3.88%

[a] Estimate - does not include trees less than 5" DBH.
Source: Thomas, Michael T., 1997. Forest Statistics for Georgia

3.2.3 Grazing Areas

Farm animals grazing on pastureland can leave areas of ground with little or no vegetative cover. During a rainfall runoff event, soil in the pastures is eroded and transported to nearby streams, typically by gully erosion. The amount of soil loss from gully erosion is generally less than that caused by sheet and rill erosion. Work in small grazed catchments in New Mexico found that gully erosion contributed only 1.4 percent of the total sediment load as compared to sheet and rill erosion. Other research found that gully erosion typically contributes less than 30 percent of the total sediment load; however, contributions have ranged from 0 to 89 percent (USEPA, 2001b).

Beef cattle spend all their time grazing in pastures, while dairy cattle and hogs are confined periodically. Hog farms confine the animals or allow them to graze in small pastures or pens. On dairy farms, the cows are confined for a limited period each day, during which time they are fed and milked.

In addition, cattle and other unconfined animals often have direct access to streams that pass through pastures. As these animals walk down to the stream, they often damage stream banks. Stream bank vegetation is destroyed and the banks often collapse, resulting in increased sedimentation to the waterway.

3.2.4 Mining Sites

Minerals, rocks, and ores are found in natural deposits on or in the earth. Kaolin, clays, granite, marble, sand, gravel, and other mineral products are the materials primarily mined in Georgia. Surface mining involves the activities and processes used to remove minerals, ores, or other solid material. Tunnels, shafts and dimension stone quarries are not considered to be surface mines. Surface mining encompasses a variety of activities from sand dredging to open pit clay mining to hard rock aggregate quarrying.

Removal of vegetation, displacement of soils and other significant land disturbing activities are typically associated with surface mining. These operations can result in accelerated erosion and sedimentation of surface waters.

3.2.5 Roads

Erosion from unpaved roadways can be a significant source of sediment to rivers and streams. Road erosion occurs when soil particles are loosened and carried away from the roadway, ditch or road bank by water, wind or traffic. The actual road construction (including erosive road-fill soil types, shape and size of coarse surface aggregate, poor subsurface and/or surface drainage, poor road bed construction, roadway shape, and inadequate runoff discharge outlets or “turn-outs” from the roadway) may aggravate roadway erosion. In addition, external factors such as roadway shading and light exposure, traffic patterns, and road maintenance may also affect roadway erosion.

Exposed soils, high runoff velocities and volumes, and poor road compaction all increase the potential for erosion. Loose soil particles are often carried from the roadbed into roadway drainage ditches. Some of these particles settle out satisfactorily, but usually they settle out poorly, causing diminished ditch carrying capacity that results in roadway flooding and, subsequently, more roadway erosion (Choctawhatchee, et. al, 2000).

3.2.6 Urban Development

Soil erosion from land disturbing activities is a major source of sediment in Georgia's streams. Land-disturbing activities are defined as any activity that may result in soil erosion and the movement of sediments into state waters or on lands of the state. Examples of land disturbing activities include clearing, grading, excavating, or filling of land. The following activities are unconditionally exempt from the provisions of the Erosion and Sedimentation Act: surface mining, granite quarrying, minor land-disturbing activities such as home gardens and landscaping, agricultural and silvicultural operations, and any project carried out under the technical supervision of the NRCS.

Conversion of forest to urban land use is often associated with water quality degradation. It should be noted that forest undergoing conversion to another land use is not considered silviculture, but rather a land disturbing activity.

Storm water runoff from developed urban areas can also have an impact on the transport of sediment to and within streams. Urbanization increases imperviousness, resulting in an increase in the volume of runoff entering the streams. In addition, the stream flow rates may increase significantly from pre-construction rates causing stream bank erosion and stream bottom down cutting.

4.0 MODELING APPROACH

Establishing the relationship between the in-stream water quality and the source loadings is an important component of TMDL development. It provides for both the identification of sources, and their relative contribution, as well as the examination of potential water quality changes resulting from varying management options to meet the water quality standard. This relationship can be developed using a variety of techniques ranging from simple methods based on scientific principles to more complex numerical computer modeling techniques.

In this section, the numerical modeling techniques developed to simulate sediment fate and transport in the watershed are discussed. The limited amount of sediment loading data and in-stream sediment information prevents GA EPD from using a dynamic watershed runoff model, which requires a great deal of data for model development and calibration. Instead, GA EPD determined the annual sediment loads delivered to the stream from the surrounding watershed. This TMDL does not address in-stream sedimentation processes, such as bank erosion and stream bottom down cutting, since computer models that simulate these processes are not available at this time.

4.1 Model Selection

The Agricultural Research Station (ARS) developed the Universal Soil Loss Equation (USLE) over 30 years ago. It is the most widely accepted and most used soil loss equation. It was designed as a method to predict average annual soil loss caused by sheet and rill erosion. The USLE can estimate long-term soil loss, and can assist in choosing proper cropping, management and conservation practices. However, it cannot be used to determine erosion for a specific year or specific storm. Because of the wide acceptance by the forestry, agricultural, and academic communities, the USLE was selected as the tool for estimating long-term annual soil erosion, assessing the impacts of various land uses, and evaluating the benefits of various Best Management Practices (BMPs).

4.2 Universal Soil Loss Equation

For each of the watersheds monitored in the Ocmulgee River Basin, the existing annual sediment load was estimated using the USLE. The USLE predicts the average annual soil loss caused by sheet and rill erosion. Soil loss from sheet and rill erosion is mainly due to detachment of soil particles during rainfall events. It is the major source of soil loss from crop production and animal grazing areas, logging areas, mine sites, unpaved roads, and construction sites. The equation used for estimating average annual soil erosion is:

$$A = RKLSCP$$

Where:

A = average annual soil loss, in tons/acre
R = rainfall erosivity index
K = soil erodibility factor
LS = topographic factor
    L = slope length
    S = slope
C = cropping factor
P = conservation practice factor

4.2.1 Rainfall Erosivity Index

The R factor, or rainfall erosivity index, describes the kinetic energy generated by the frequency and intensity of the rainfall. It is statistically calculated from the annual summation of rainfall energy in every storm, which correlates to the raindrop size, times its maximum 30-minute intensity. It varies geographically and ranges from 275 to 337.5 within the Ocmulgee River Basin. The R Factors by county are provided in Table 16.

Table 16. R Factors by County

County	R Factor
Ben Hill	337.5
Bibb	300
Bleckley	300
Butts	300
Clayton	300
Coffee	325
Crawford	300
De Kalb	300
Dodge	300
Dooly	325
Fulton	300
Gwinnett	300
Henry	300
Houston	300
Jasper	275
Jeff Davis	325
Jones	275
Lamar	300
Laurens	300
Macon	325
Monroe	300
Newton	300
Peach	300
Pulaski	300
Rockdale	300
Spaulding	300
Telfair	325
Twiggs	300
Upson	325
Walton	275
Wheeler	300
Wilcox	325

4.2.2 Soil Erodibility Factor

The K factor, or soil erodibility factor, represents the susceptibility of soil to be eroded. This factor quantifies the cohesive or bonding character of the soil and ability of the soil to resist detachment and transport during a rainfall event. It is a function of the soil type, which is provided by the STATSGO data. Table 6 provides a breakdown of the soil type within each modeled watershed and the corresponding K factor. STATSGO soil data has a resolution of 1:250,000 and is available for all of Georgia. A higher-resolution (1:25,000) soil data, SSURGO, is available for fourteen Georgia counties. For consistency, it was decided that STATSGO data would be used for the first round or phase of sediment TMDLs because of its availability for all of Georgia. During the second phase of sediment TMDLS, if SSURGO data is available for all of Georgia, it may be used.

4.2.3 Topographic Factor

The LS factor, or topographic factor, represents the effect of slope length and slope steepness on erosion. Steeper slopes produce higher overland flow velocities. Longer slopes accumulate more runoff from larger areas and also result in higher overflow velocities. The slope length and slope is based on the grid size and ground slope provided by the USGS 30 by 30 meter Digital Elevation Model (DEM) grids downloaded from the State GIS clearinghouse.

4.2.4 Cropping factor

The C factor, or cropping factor, represents the effect plants, soil cover, soil biomass, and soil disturbing activities have on erosion. It is the most complicated of the USLE factors. It incorporates effects of tillage, crop type, cropping history, and crop yield. Cropping factors for forested, agricultural, and urban lands were provided by the Georgia Forestry Commission (GFC), Natural Resources Conservation Service (NRCS), and U.S. Environmental Protection Agency (EPA), respectively.

The cropland and pastureland C factors for each county were developed by NRCS under the National Resource Inventory Program and are listed in Table 17. These values were developed based on the 2001 NLCD data. Low-level aerial photography was performed and the photographs are interpreted to identify land features. If data were not available for a given county, the C factor was calculated by averaging the C factors from all the surrounding counties. The cropland and pastureland C factors for watersheds in multiple counties were determined by area-weighting the agricultural land use within each county.

C factors for the road networks were determined based on the road surface and are given in Table 18. Road information, including road surface, was provided by the Georgia Department of Transportation (DOT). Data gaps were filled based on adjacent road surfaces and road types (i.e., state, county, private).

C factors for other land uses, including urban, mining, transitional, grass and wetlands, are listed in Table 19. These values were provided by the U.S. Environmental Protection Agency (EPA) and are used in all watersheds.

Table 17. Cropland and Pastureland C Factors by County

County	C factor	
	Cropland	Pastureland
Ben Hill	0.441	0.003
Bibb	0.221	0.003
Bleckley	0.416	0.005
Butts	0.289	0.003
Clayton	0.346	0.003
Coffee	0.402	0.003
Crawford	0.479	0.011
De Kalb	0.295	0.006
Dodge	0.399	0.004
Dooly	0.496	0.003
Fulton	0.476	0.007
Gwinnett	0.283	0.018
Henry	0.305	0.004
Houston	0.436	0.028
Jasper	0.143	0.003
Jeff Davis	0.450	0.003
Jones	0.349	0.012
Lamar	0.306	0.026
Laurens	0.370	0.004
Macon	0.090	0.018
Monroe	0.298	0.003
Newton	0.286	0.005
Peach	0.324	0.028
Pulaski	0.484	0.003
Rockdale	0.267	0.004
Spaulding	0.410	0.005
Telfair	0.459	0.003
Twiggs	0.421	0.003
Upson	0.364	0.016
Walton	0.192	0.003
Wheeler	0.504	0.003
Wilcox	0.442	0.005

Source: USDA-NRCS, 1997. National Resources Inventory; USDA-NCRS Athens, Georgia

Table 18. Road C Factors

Road Surface	Type	C factor
Rigid and High Flexible Road	1	0.13
Bituminous Surfaced Road	2	0.25
Gravel or Stone Road	3	0.65
Soil-Surfaced Road	4	0.75
Primitive or Unimproved Road	5	0.75

Table 19. Various Land Use C Factors

Land Use	C factor
Water	0
Low Intensity Residential	0.02
High Intensity Residential	0.005
High Intensity Commercial, Industrial, Transportation	0.003
Bare rock, sand, clay	0
Quarries, strip mines, gravel pits	0.75
Deciduous Forest	0.00019
Evergreen Forest	0.00019
Mixed Forest	0.00019
Deciduous Shrubland	0.005
Pasture/Hay	0.003
Row Crops	0.343
Other Grasses	0.003
Woody Wetlands	0.011
Emergent Herbaceous Wetlands	0.003

4.2.5 Conservation Practice Factor

The P factor, or conservation practice factor, represents the effects of conservation practices on erosion. The conservation practices include BMPs such as contour farming, strip cropping and terraces. In all cases, it was assumed that no BMPs were used and the P factor for all land uses was 1.0.

4.3 WCS Sediment Tool

EPA and Tetra Tech developed the Arcview-based Watershed Characterization System (WCS) to provide tools for characterizing various watersheds. WCS was used to display and analyze geographic information system (GIS) data, including land use, soil type, ground slope, road networks, point source discharges, and watershed characteristics.

An extension of WCS is the Sediment Tool, which incorporates the USLE. The Sediment Tool can be used to perform the following tasks:

- Estimate the extent and distribution of potential soil erosion within a watershed;
- Estimate the potential sediment delivery to the receiving water body; and
- Evaluate the effects of land use, BMPs, and road networks on erosion and sediment delivery.

The watersheds of interest were delineated based on the RF3 stream coverage and elevation data. A stream grid for each delineated watershed was created based on elevation data. The stream grid corresponded to a stream network with twenty-five 30 by 30 meter headwater cells (5.5 acres). The stream grid network has flow and can accumulate flow.

For each 30 by 30 meter grid cell within the watershed, the WCS Sediment Tool calculates the potential erosion using the USLE based on the specific cell characteristics. The model then calculates the potential sediment delivery to the stream grid network. Sediment delivery can be calculated using one of the four available sediment delivery equations:

- Distance-based equation

  $Md = M * (1-0.97 * D/L)$

  Where: Md = mass moved (tons/acre/yr)
  M = sediment mass eroded (ton)
  D = least cost distance from a cell to the nearest stream grid (ft)
  L = maximum distance the sediment may travel (ft)

- Distance slope-based equation

  $DR = \exp(-0.4233 * L * Sf)$

  Where: $Sf = \exp(-16.1 * r/L + 0.057) - 0.6$
  DR = sediment delivery ratio
  L = distance to the stream (m)
  r = relief to the stream (m)

- Area-based equation

  $DR = 0.417762 * A^{(-0.134958)} - 1.27097$, $DR <= 1.0$

  Where: DR = sediment delivery ratio
  A = area (sq miles)

- WEPP-based regression equation

  $Z = 0.9004 - 0.1341 * X^2 + X^3 - 0.0399 * Y + 0.0144 * Y^2 + 0.00308 * Y^3$

  Where: Z = percent of source sediment passing to the next grid cell
  X = cumulative distance downslope
  Y = percent slope in the grid cell

Based on work previously performed by EPA on the Chattooga River Watershed, it was determined that the distance slope-based equation provided the best prediction of the sediment delivery (USEPA, 2001b).

The WCS Sediment Tool estimates the total soil erosion and sediment delivered to the stream from each grid cell due to land use cover and from the grids representing roads.

5.0 TOTAL MAXIMUM DAILY LOAD

A Total Maximum Daily Load (TMDL) is the amount of a pollutant that can be assimilated by the receiving waterbody without exceeding the applicable water quality standard; in this case, the narrative water quality standard for aquatic life. TMDLs establish allowable pollutant loadings that are less than or equal to the TMDL, and thereby provide the basis to establish water quality based controls. For some pollutants, TMDLs are expressed on a mass loading basis.

This TMDL determines the range of sediment load that can enter the impaired Ocmulgee River Basin watersheds without causing additional impairment to the stream. This is based on the hypothesis that if an impaired watershed has an annual average sediment loading rate similar to a biologically unimpaired watershed, then the receiving stream will remain stable and not be biologically impaired due to sediment. The average sediment load in the watersheds not on the 303(d) list is 0.16 tons/acre/yr, ranging from 0.02 to 1.22 tons/acre/yr.

A TMDL is the sum of the individual waste load allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background (40 CFR 130.2). The sum of these components may not result in an exceedance of water quality standards for a water body. To protect against exceedances, the TMDL must also include a margin of safety (MOS), either implicitly or explicitly, that accounts for the uncertainty in the relationship between pollutant loads and the water quality response of the receiving water body. Conceptually, a TMDL can be expressed as follows:

$$TMDL = \Sigma WLAs + \Sigma LAs + MOS$$

The following sections describe the various TMDL components.

5.1 Waste Load Allocations

The waste load allocation is the portion of the receiving water's loading capacity that is allocated to existing or future point sources. There are twelve permitted facilities in the Ocmulgee River Basin watersheds. These include facilities with industrial process waters, municipal treatment plants, and surface mines. WLAs are provided to the point sources from municipal and industrial wastewater treatment systems with NPDES effluent limits.

There are twelve active NPDES permitted facilities with TSS permit limits in the Ocmulgee River Basin watershed that discharge into listed segments or upstream of a listed segment. These facilities include process water from hard rock mines and municipal treatment plants. The maximum allocated sediment load for these municipal and industrial wastewater treatment facilities is dependent on the discharge flow. Table 20 provides the WLAs for these facilities. The WLA loads are given as concentrations or as a range of daily average and daily maximum TSS limits for these facilities; however, a load can be calculated based on the permitted (where available) or design flows, and the permitted TSS as follows.

$$WLA = Cpermitted * Q$$

Where: WLA = Wasteload Allocation sediment load
Cpermitted = permitted concentration, in TSS (mg/L)
Q = permitted (where available) or design discharge flow

If there is available assimilative capacity, a new facility may be allowed, or it may be acceptable for an existing facility to expand. Any discharge increases will be allowed dependent on engineering and biological integrity study results.

Table 20. Waste Load Allocations for Permits with TSS Limits

FACILITY	NPDES PERMIT NO.	RECEIVING WATER	TSS	
			Monthly Avg (mg/L)	Weekly Avg (mg/L)
Barnesville – Gordon Road WPCP	GA0021041	Tobesofkee Creek	30	45
Forsyth – Northeast WPCP	GA0031801	Town Creek to Rum Creek	30	45
Fort Valley WPCP	GA0031046	Bay Creek	30	45
Griffin – Cabin Creek WPCP	GA0020214	Cabin Creek	30	45
Hanson Aggregates SE – outfall 001	GA0046558	Little Deer Creek	25-55	50-110
Hanson Aggregates SE – outfall 002	GA0046558	Little Deer Creek	25-55	50-110
Jackson – Southside WPCP	GA0023931	Town Branch	20	30
Perry WPCP	GA0021334	Big Indian Creek	30	45
Rinker Materials	GA0036781	Rock Creek	25-40	50-80
Rockdale Co. – Almand Branch WPCP	GA0021610	Almand Branch to Snapping Shoals Creek	20	30
Spring Industries, Inc.	GA0003409	Cabin Creek	470 (kg/day)	941 (kg/day)
Vulcan Construction Materials	GA0023736	Yellow River tributary to Snapping Shoals Creek	25-55	50-110

Average annual load assumes discharge every day at average daily flow

State and Federal Rules define storm water discharges covered by NPDES permits as point sources. However, storm water discharges are from diffuse sources and there are multiple storm water outfalls. Storm water sources (point and nonpoint) are different than traditional NPDES permitted sources in four respects: 1) they do not produce a continuous (pollutant loading) discharge; 2) their pollutant loading depends on the intensity, duration, and frequency of rainfall events, over which the permittee has no control; 3) the activities contributing to the pollutant loading may include the various allowable activities of others, and control of these activities is not solely within the discretion of the permittee; and 4) they do not have wastewater treatment plants that control specific pollutants to meet numerical limits.

The intent of storm water NPDES permits is not to treat the water after collection, but to reduce the exposure of storm water to pollutants by implementing various controls. It would be infeasible and prohibitively expensive to control pollutant discharges from each storm water outfall. Therefore, storm water NPDES permits require the establishment of controls or BMPs to reduce the pollutants entering the environment.

The stormwater discharges associated with industrial and mining facilities that are not covered under individual NPDES permits are regulated by a Georgia General Storm Water NPDES Permit (GAR000000). Table 11 lists the industrial facilities that are covered under the Georgia General Stormwater NPDES Permit in the Ocmulgee River Basin. Facilities covered by this permit that discharge storm water associated with industrial activity or within one linear mile upstream and within the same watershed of an impaired stream segment are required to monitor for the pollutant of concern.

There are no permitted discharges from surface mines which do not process material located in the impaired Ocmulgee River Basin watersheds. Surface mine locations are constantly changing. Discharges from these sites consist of accumulated surface water, pit-pumpout water, groundwater, and stormwater runoff associated with mining activities authorized under approved Mined Land Use Plans. These discharges are covered under NPDES permits, but have no numeric limits. However, these discharges shall not violate the Water Quality Standards in the receiving streams and shall not discharge floating solids or visible foam in other than trace amounts. The WLA from these sites is included in the LA for the mining land use discussed in the following section.

The sediment load allocation from future construction sites within the watershed will have to meet the requirements outlined in the Georgia General Storm Water NPDES Permit for Construction Activities. This permit authorizes the discharge of storm water associated with construction activity to the waters of the State in accordance with the limitations, monitoring requirements, and other conditions set forth in Parts I through VII of the Georgia Storm Water Permit. The conditions of the permit were established to assure that the storm water runoff from these sites does not cause or contribute sediment to the stream. Georgia's General Storm Water Permit can be considered a water quality-based permit in that the numeric limits in the permit, if met, will not cause a water quality problem.

5.2 Load Allocations

The USLE was used to determine the relative sediment contributions from each significant land use. The USLE was applied to those watersheds that are biologically impaired and those that are not, to determine the current sediment loading rates to the streams. The sediment load allocation for each stream by land use, including roads, is reported in Table 21. The watersheds are grouped by: those that are not on the 303(d) list and those that are on the 303(d) list. For comparison purposes, the total sediment load in tons per acre per year is also given. The average sediment load in the watersheds that are biota impacted is 0.19 tons/acre/yr, ranging from 0.01 to 1.91 tons/acre/yr. The average sediment load in the watersheds not on the 303(d) list is 0.16 tons/acre/yr, ranging from 0.02 to 1.22 tons/acre/yr. Table 22 gives each source's percent contribution to the total sediment load.

The Total Allowable Load for each impaired segment is calculated by multiplying the watershed area in acres by an annual load per acre. This annual load is based on the average annual load per acre from all the unimpaired streams within a given ecoregion (Piedmont, 0.06 ton/acre/yr; Southeastern Plains, 0.15 ton/acre/yr). The unimpaired streams are those with an IBI score greater than 45. The LA is then calculated by subtracting the WLA from the Total Allowable Load.

Understanding the potential sediment sources and the changes in land use that have occurred over the last century provides insight into the streams' current water quality issues. The average annual sediment load per unit area for the unimpaired and impaired watersheds are generally within the same range. Over the last century there has been a dramatic decrease in the amount of land farmed in Georgia. Since 1950, there has been a 57 percent reduction in farmland. With the reduction in farmland, there has also been a decrease in the amount of soil erosion. This suggests that the sedimentation observed in the impaired stream segments may be legacy sediment resulting from past land use practices. It is believed that if sediment loads are maintained at acceptable levels, streams will repair themselves over time.

Table 21a. Sediment Load Allocations (Unimpaired Piedmont)

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Alcovy River	0.00	3943.91	524.64	71.91	0.00	7459.91	84.70	44.75	5.16	170.78	2171.46	109.24	693.31	1431.22	0.26	4727.09	21438.36	0.19
Bear Creek	0.00	112.98	1.98	0.09	0.00		19.06	6.50	1.65	5.55	256.15	68.90	84.74	204.09		390.57	1152.27	0.05
Beaverdam Creek	0.00	193.80	3.72	0.52	0.00		12.78	1.76	1.04	0.14	14.91		18.03	23.08		177.13	446.90	0.08
Big Sandy Creek	0.00	309.44	4.75	1.02	0.00	2540.70	82.16	49.53	9.94	71.90	178.12	3.27	283.41	330.64	0.23	2191.24	6056.34	0.17
Buck Creek	0.00	244.12	14.34	4.30	0.00	0.00	42.62	18.89	3.30	26.75	756.89	34.38	60.70	290.90	0.00	701.55	2198.74	0.11
Chambliss Creek	0.00	56.83	2.76	0.80	0.00		6.38	5.17	0.88	4.35	30.34	0.67	6.74	1.50		72.27	188.70	0.05
Deer Creek	0.00	45.28	3.42	0.70	0.00	0.00	9.93	4.35	0.86	4.42	75.31	0.00	22.33	1.17	0.00	67.46	235.23	0.05
Douglas Creek	0.00	7.82	0.32		0.00		2.72	1.89	0.30	1.04	4.63		10.35	1.78		37.58	68.43	0.05
Falling Creek	0.00	249.93	0.22	0.00	0.00	117.23	99.64	65.36	27.06	12.94	23.92	0.00	129.08	518.15	0.44	1696.13	2940.10	0.06
Freeman Creek	0.00	52.23	6.68	0.08	0.00		3.03	1.41	0.05	4.88	34.61		11.08	17.65		95.49	227.21	0.11
Herds Creek	0.00	20.28	0.00	0.00	0.00	0.00	5.48	2.45	0.40	0.45	15.70	0.00	32.38	18.44	0.05	106.33	201.97	0.07
Honey Creek	0.00	265.85	45.85	2.99	0.00	4921.13	12.18	8.92	0.27	12.62	173.95	6.85	19.94	38.42		266.65	5775.63	0.54
Kinnard Creek	0.00	29.64	0.01	0.00	0.00		11.70	5.42	1.30	0.54	17.20		19.40	33.52		107.36	226.09	0.05
Lee Creek		3.32			0.00		4.34	2.70	0.69	3.24	10.66		12.74	6.63		333.72	378.05	0.19
Little Buck Creek	0.00	18.28	0.82	0.05	0.00		3.36	1.91	0.14	2.37	150.17		3.14	71.48		61.14	312.85	0.11
Little Deer Creek D/S DOT	0.00	21.77	1.96	2.15		1301.80	6.44	3.09	0.70	0.18	8.01	0.00	9.30	22.97		117.15	1495.52	0.53
Little Falling Creek	0.00	50.33	0.17	0.00	0.00	0.00	20.09	12.53	5.18	7.53	7.00	0.00	42.87	147.35	0.44	291.88	585.36	0.05
Long Branch	0.00	4.16			0.00		1.08	1.25	0.10	1.07	7.04		6.28	7.59		7.90	36.48	0.04
No Business Creek	0.00	318.73	54.82	5.96	0.00		2.89	2.04	0.03	0.27	40.50		2.15	1.69		191.02	620.10	0.17
Panther Creek	0.00	8.10	0.27	0.23	0.00		1.14	0.64	0.11	1.02	4.69	2.63	4.47	4.29		20.57	48.16	0.05
Peeksville Creek	0.00	4.28	0.55	0.00	0.00		2.98	1.59	0.23	4.17	28.21	0.94	16.91	3.38		32.47	95.71	0.05
Prairie Creek	0.00	11.62	0.45	0.02	0.00	166.51	0.97	0.88	0.18	1.20	89.52	91.63	4.67	10.77		36.64	415.06	0.24
Rock Creek	0.00	3.58	0.07	0.04		94.75	2.57	1.40	1.22	0.02	28.46	0.00	8.42	9.56	0.04	5.62	155.75	0.05
Rocky Creek - Bibb	0.00	400.42	34.03	3.10	0.00	103.16	12.67	4.54	1.82	2.16	36.83	0.00	27.59	80.12	0.00	633.73	1340.17	0.10

Sediment Load (tons/yr)																		
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road	Total	Load (tons/acre/yr)
Rocky Creek Monroe	0.00	216.06	3.80	0.16	0.00	0.76	42.77	20.87	3.44	27.40	287.42	1.65	103.00	144.84	0.00	435.96	1288.13	0.08
Sabbath Creek	0.00	251.66	19.47	0.66	0.00		1.77	0.53	0.19		1.35		1.07	4.97		137.44	419.11	0.16
Swan Creek U/S	0.00	7.48	0.24	0.00	0.00		1.40	0.42	0.06	1.14	94.95		1.72	4.33		32.61	144.35	0.13
Swan Creek D/S	0.00	14.85	0.38	0.00	0.00	0.00	6.20	2.97	0.54	17.92	118.81	0.00	49.13	33.35	0.00	90.60	334.75	0.11
Tobesofkee Creek upper	0.00	76.84	13.20	3.34	0.00	5514.22	22.32	13.94	2.67	28.46	337.69	10.14	55.06	63.32	0.00	315.60	6456.80	0.25
Tobesofkee Creek lower	0.00	220.53	4.05	0.70	0.00	5858.19	30.70	23.94	4.39	34.26	220.81	10.97	75.03	58.46	0.00	277.70	6819.74	0.40
Towaliga River upper	0.00	269.78	17.45	0.51	0.00	1.34	65.71	38.69	2.37	50.28	400.09	72.34	111.19	208.84	0.00	774.33	2012.91	0.06
Towaliga River lower	0.00	769.52	84.19	15.60	0.00	1376.23	105.45	58.21	4.48	81.98	664.77	104.67	243.80	451.89	0.25	2073.48	6034.52	0.09
Town Branch U/S Jackson WPCP	0.00	32.23	2.22	0.69	0.00		0.50	1.11	0.16	0.74	1.42		1.05	5.08		37.43	82.63	0.06
Troublesome Creek	0.00	55.72	5.00	0.09	0.00	0.00	27.60	15.73	0.73	11.05	61.75	9.63	26.65	48.68	0.00	125.03	387.64	0.04
Tussahaw Creek tributary	0.00	15.47	0.86	0.02	0.00		1.48	0.75	0.12	0.82	27.12	2.35	2.50	23.63		35.43	110.57	0.07
Tussahaw Creek upper	0.00	138.76	10.55	1.32	0.00	92.65	12.38	6.54	0.68	12.33	148.52	38.22	36.88	134.53	0.00	392.04	1025.40	0.09
Tussahaw Creek lower	0.00	352.90	16.24	2.09	0.00	436.63	30.07	21.02	3.28	24.28	299.84	60.21	90.99	181.32	0.00	1481.96	3000.83	0.12
Yellow Creek	0.00	22.98	0.05	0.00	0.00	0.00	9.61	5.98	0.94	18.91	53.28	0.00	15.18	62.11	0.00	261.21	450.24	0.09
Yellow Water Creek Trib D/S	0.00	0.00	0.31	0.26	0.00	0.00	0.06	0.07	0.03	0.05	0.53	0.61	0.16	1.15	0.00	23.06	26.29	0.07
Yellow Water Creek U/S	0.00	91.77	4.97	1.26	0.00		4.35	2.70	0.87	3.32	70.62	20.42	14.10	61.97		162.56	438.89	0.08
Yellow Water Creek D/S	0.00	94.64	5.23	1.26	0.00	0.00	4.37	2.70	0.87	3.32	72.37	20.42	14.28	61.97	0.00	165.19	446.61	0.08
Yellow Water Creek lower	0.00	93.58	6.83	2.57	0.00	0.00	6.27	2.88	0.83	9.07	90.69	3.89	21.05	54.23	0.00	153.08	444.95	0.06

Table 21b. Sediment Load Allocations (Unimpaired Southeastern Plain)

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Alligator Creek	0.00	341.22	6.06	0.57		212.39	13.39	51.67	13.84	17.01	132.79	19256.31	181.14	1125.19	15.49	1892.28	23259.34	0.17
Big Creek - Houston	0.00	11.14	0.04				1.00	0.46	0.12	0.06	40.07	2229.71	3.04	44.50	0.38	104.59	2435.13	0.64
Big Creek	0.00	86.43	4.03	1.83	0.00	10.43	6.28	2.82	0.83	1.56	378.36	9494.36	23.02	255.21	4.21	990.36	11259.73	0.43
Big Indian Creek	0.00	136.90	3.75	0.43			7.55	4.15	2.48	3.48	370.44	6696.50	62.21	268.33	7.20	420.33	7983.75	0.20
Little Shellstone Creek		1.00					0.39	0.06	0.04	0.03	0.34	7.29	3.17	0.06	0.07	5.72	18.16	0.02
Little Sturgeon Creek	0.00	17.94	0.15	0.00			0.82	9.02	1.10	7.19	4.67	914.82	25.97	35.43	0.38	264.09	1281.58	0.23
Mossy Creek	0.00	67.67	0.75	0.15	0.00		10.31	5.55	2.29	2.86	241.10	4000.06	33.59	62.20	2.21	245.30	4674.03	0.24
Richland Creek	0.00	17.80	1.82	0.02			23.57	13.32	3.07	3.92	6.99	419.95	11.65	51.84	0.68	182.88	737.49	0.06
Savage Creek	0.00	71.26	5.16	0.08	0.00	0.00	65.59	48.21	12.91	25.11	20.32	1069.06	69.70	291.38	2.29	457.65	2138.74	0.06
Shellstone Creek	0.00	50.46	1.56	0.00	0.00	3.22	15.47	11.56	3.85	0.17	8.30	2071.61	18.10	154.97	1.76	193.02	2534.06	0.09
South Prong Creek	0.00	33.00	2.26	1.19		1.76	0.54	0.17	0.12	1.03	7.62	9026.33	4.56	222.74	9.61	104.18	9415.10	0.75
Sugar Creek	0.00	360.36	18.25	3.43		125.10	10.39	41.28	8.35	11.74	95.90	14718.92	128.65	948.81	12.06	1459.84	17943.10	0.16
Whitewater Creek		3.50	0.09				2.44	0.32	0.42	0.94	16.12	141.60	6.13	20.25	0.27	16.06	208.15	0.08

Table 21c. Sediment Load Allocations (Impaired Piedmont)

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Barbershela Creek	0.00	358.25	52.28	3.93	0.00	10.33	0.87	0.94	0.04	0.24	5.63		0.07	8.89		240.22	681.70	0.17
Big Sandy Creek	0.00	17.82	0.01	0.01	0.00		4.18	3.78	0.69	4.51	35.53	1.29	7.15	4.33		76.14	155.44	0.05
Brown Branch	0.00	22.40	1.20	0.07	0.00		2.96	1.54	0.33	0.03	55.42	11.28	9.67	26.93		298.24	430.08	0.14
Butlers Creek	0.00	7.05	0.02		0.00		4.23	2.85	1.45	0.00	0.26		0.13	13.08		30.61	59.67	0.02
Cabin Creek	0.00	251.27	28.19	6.03	0.00		15.98	9.57	1.68	0.27	100.17	0.54	12.89	18.04		280.55	725.19	0.09
Calaparchee Creek	0.00	23.07	2.73	0.57	0.00		2.42	0.71	0.18	1.07	19.50		12.65	21.52		124.04	208.47	0.09
Carr Branch	0.00	18.95	1.02	0.00	0.00		4.28	2.13	0.22	1.15	3.92	0.58	6.34	3.99		15.49	58.06	0.04
Cobbs Creek	0.00	146.68	16.83	1.92			0.04	0.27	0.00	1.85		0.11	0.06			90.10	257.86	0.14
Cole Creek		2.29	0.11		0.00		1.79	0.31	0.06	0.78	90.62	2.08	2.57	12.93		8.93	122.47	0.14
Doolittle Creek	0.00	337.61	47.87	7.43	0.00		0.33	0.59	0.02	0.16	26.55		0.25	0.15		291.90	712.86	0.16
Dried Indian Creek	0.00	117.03	25.04	9.84	0.00		1.53	2.05	0.57	3.52	32.84	23.90	6.43	7.59		137.14	367.47	0.09
Eightmile Creek	0.00	8.60			0.00		0.68	0.59	0.07	0.07	1.40		1.39	0.43		72.73	85.95	0.15
Garner Creek	0.00	194.95	33.10	3.17	0.00		0.83	1.32	0.03	0.56	24.51	0.82	2.30			127.46	389.05	0.12
Gladesville Creek	0.00	16.14	0.09		0.00		8.32	3.85	2.03	7.44	4.76		25.84	30.73	0.39	82.15	181.74	0.06
Hansford Branch		0.62					1.79	0.95	0.41		0.21		0.40	2.22		19.49	26.09	0.05
Harmon Pye Branch		8.68	0.07				8.31	3.68	0.65		0.14		14.32	10.36		42.19	88.41	0.05
Herds Creek	0.00	47.58	0.01	0.00	0.00	0.00	19.62	7.47	2.03	0.52	28.48	0.00	85.69	64.70	0.05	231.68	487.81	0.06
Intrenchment Creek	0.00	201.11	22.00	5.15	0.00		0.77	0.60	0.14	0.13	50.44		3.56	0.22		46.68	330.81	0.05
Island Shoal Creek	0.00	20.27	0.58	0.11	0.00		3.69	1.86	0.19	2.45	33.25	10.22	8.21	26.24		137.67	244.74	0.10
Little Chehaw Creek	0.00		0.02	0.00	0.00		2.66	0.79	0.38	0.01	26.35	1.30	5.16	16.00		53.06	105.71	0.06
Little Deer Creek	0.00	37.44	3.18	2.38	0.00	1301.80	12.82	5.02	1.93	0.20	10.07	0.00	24.42	35.80	0.00	147.59	1582.66	0.33
Little Deer Creek trib	0.00	0.45	0.09	1.84	0.00	1301.80	1.27	0.96		0.17	1.32		3.40	1.73		20.36	1333.38	1.91
Little Suwanee Creek	0.00	382.11	129.93	18.33	0.00		4.92	2.11	0.02	0.69	31.82		7.95	24.18		341.51	943.58	0.16
Long Branch		11.84			0.00		7.37	1.84	0.77	0.01	2.09		32.23	0.95		61.05	118.15	0.07
Malholms Creek	0.00	2.45	0.00	0.00	0.00		0.26	0.11	0.02	0.01	1.72	0.00	0.80	0.85		10.23	16.45	0.01

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Mill Dam Creek		0.33			0.00		1.84	1.20	0.22	0.02	6.94		10.84	7.70		110.78	139.87	0.11
Mountain Creek	0.00	174.63	22.71	7.63	0.00		1.67	0.72	0.18	2.89	15.06		16.53	13.41		129.83	385.25	0.13
Phinazee Creek	0.00	6.06	0.04	0.07	0.00		2.49	0.42	0.05	7.68	65.86		26.68	9.59		4.61	123.55	0.07
Red Creek	0.00	148.87	2.33	0.15	0.00	0.76	19.64	13.05	1.63	18.10	105.41	0.03	48.55	61.05	0.00	187.31	606.85	0.08
Rock Creek	0.00	0.01	0.00	0.03		82.81	0.41	0.27	0.21	0.00	7.13		1.52	0.48	0.04	0.20	93.10	0.11
Rocky Creek - Butts	0.00	9.39	0.03		0.00		4.08	1.90	0.55	14.09	11.15		16.98	3.10		139.36	200.62	0.09
Rocky Creek - Monroe	0.00	31.67	1.26	0.01	0.00		5.42	3.34	0.49	3.81	159.37	1.62	12.73	45.05		131.99	396.76	0.10
Rocky Creek - Bibb	0.00	100.25	5.05	0.12	0.00		3.85	2.62	0.73	0.34	5.55		5.19	36.86		99.27	259.84	0.07
Rum Creek	0.00	117.74	8.55	3.89	0.00		11.94	7.10	1.71	0.54	41.06		28.68	28.10		187.98	437.28	0.06
Sand Branch		0.83			0.00		0.97	1.73	0.27	0.01	1.20		1.34	0.21		134.10	140.66	0.20
Scoggins Creek	0.00	30.74	0.02		0.00		4.34	2.85	1.10	0.02	17.85		28.21	1.32		166.40	252.83	0.12
Shoal Creek	0.00	168.65	13.93	2.37			0.18	0.28	0.03	0.08	0.47			0.20		83.72	269.91	0.10
Snapping Shoals Creek	0.00	433.09	121.65	37.37	0.00	2166.28	4.23	6.35	0.65	7.66	37.15	2.42	13.20	54.74		628.21	3512.99	0.33
South River	0.00	1281.79	205.14	62.24	0.00	0.00	8.66	6.27	1.03	2.55	137.41	0.00	22.36	61.50	0.00	832.05	2621.00	0.07
Third Branch		11.84			0.00		7.37	1.84	0.77	0.01	2.09		32.23	0.95		61.05	118.15	0.07
Tobesofkee Creek	0.00	41.33	13.09	3.34	0.00	0.00	3.12	1.24	0.30	1.94	182.84	8.93	6.76	20.49	0.00	64.31	347.69	0.02
Tributary to Little Haynes Creek	0.00	89.37	9.18	0.01	0.00	95.04	0.81	1.15	0.02	3.58	28.94		2.00	1.46		74.34	305.88	0.22
Tobler Creek	0.00	58.35	1.98	0.66	0.00	0.19	11.93	7.40	1.23	0.21	12.16	0.55	38.25	16.35		255.03	404.26	0.07
Town Branch	0.00	70.90	8.06	3.80	0.00		0.64	0.93	0.36	0.03	4.89		1.10	0.67		86.75	178.13	0.18
Tributary to Tobesofkee Creek	0.00	12.46	2.63	0.43	0.00		0.44	0.09	0.06	0.74	31.56	3.32	0.97			14.46	67.16	0.11
Walnut Creek - Jones	0.00	115.20	2.52	0.34	0.00	5145.25	24.88	14.48	4.15	0.52	318.66	3.80	123.10	193.63	0.00	545.06	6491.60	0.38
Walnut Creek - Crawford	0.00	28.49	0.19	0.08	0.00	5.60	10.18	10.26	1.46	0.96	87.93		39.98	27.19		157.10	369.41	0.05
White Creek	0.00	9.42	0.06		0.00		3.95	1.47	0.33	6.50	38.73	0.03	11.83	14.22		42.21	128.76	0.07
Wise Creek	0.00	36.79	0.37	0.13	0.00	0.00	21.85	12.24	2.57	0.07	22.37	0.00	65.10	44.00	0.00	134.12	339.61	0.05

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Wood Creek	0.00	11.92		0.20	0.00		1.25	0.79	0.14	0.03	108.95	2.06	1.01	8.58		11.28	146.22	0.15

Table 21d. Sediment Load Allocations (Impaired Southeastern Plain)

Sediment Load (tons/yr)																		
Name	**Open Water**	**Low Intensity Residential**	**High Intensity Residential**	**High Intensity Commercial/ Industrial Transportation**	**Bare Rock Sand and Clay**	**Quarries Strip Mines Gravel Pits**	**Transitional**	**Deciduous Forest**	**Evergreen Forest**	**Mixed Forest**	**Pasture/Hay**	**Row Crops**	**Other Grasses (Urban Recreational)**	**Woody Wetland**	**Emergent Herbaceous Wetlands**	**Road**	**Total**	**Load (tons/acre/yr)**
Bay Creek		5.25	1.17	0.93			0.12	0.10	0.06	0.14	8.78	171.55	0.55	0.29		13.25	202.19	0.15
Big Grocery Creek		0.22					1.50	1.39	0.86	0.13	0.03		0.38	49.49		101.20	155.19	0.04
Big Horse Creek	0.00	182.80	4.36	0.28	0.00	461.89	7.72	25.83	6.05	1.24	87.18	16382.61	129.98	487.68	10.31	844.57	18632.49	0.26
Big Indian Creek	0.00	403.39	21.29	8.02	0.00	69.40	16.60	10.33	5.35	14.19	1048.70	17682.13	131.16	921.87	14.55	1564.54	21911.53	0.24
Bluff Creek	0.00	87.16	2.52	0.09	0.00	175.94	4.10	11.80	2.18	3.92	31.29	17512.44	39.79	302.74	5.21	200.17	18379.34	0.45
Cedar Creek	0.00	21.25	0.79	0.01		90.95	0.85	1.90	0.37	0.66	17.40	3236.57	10.99	53.19	1.64	9.19	3445.76	0.46
Crooked Creek	0.00	59.17	0.74	0.08		22.46	2.14	7.28	1.77	2.03	24.12	4134.61	33.92	188.41	2.71	482.06	4961.51	0.20
Deep Creek	0.00	30.73	1.29	0.00	0.00	0.00	6.93	4.16	1.20	5.45	89.75	957.04	41.09	104.11	1.78	31.01	1274.53	0.13
Flat Creek	0.00	75.32	0.45	1.00		19.98	4.30	2.39	1.14	9.41	209.31	5643.83	33.93	249.93	3.68	1060.86	7315.52	0.46
Folsom Creek	0.00	35.18	0.94	0.11		83.57	1.03	7.37	0.93	1.43	22.72	3876.72	9.33	52.44	1.32	276.58	4369.65	0.36
Gum Swamp Creek	0.00	52.13	1.40	0.02		76.43	3.80	4.15	1.65	1.72	44.13	7663.09	24.28	208.56	3.95	275.11	8360.42	0.25
Hartley Branch	0.00	4.31	0.58		0.00		1.82	0.45	0.44	0.43	6.76	336.79	5.41	16.13	0.93	18.56	392.61	0.16
Horse Creek	0.00	64.94	1.83	0.24	0.00	0.06	2.16	5.54	1.49	0.98	32.09	5236.38	25.58	151.72	2.99	208.21	5734.20	0.28
House Creek	0.00	22.05	0.75			18.45	0.55	1.41	0.31	0.37	11.86	1437.19	4.82	6.84	0.65	60.15	1565.38	0.66
Limestone Creek	16.90	1500.37	54.26	11.79		118.53	3930.02	2579.47	1228.91	90.07	597.11	406.97	962.49	860.19	46.03	514.11	12917.22	1.16
Mossy Creek	0.00	170.55	11.21	1.06	0.00	0.00	18.09	8.59	3.87	5.14	987.28	10752.46	92.67	233.53	4.93	661.45	12950.84	0.25
Otter Creek	0.00	122.64	5.07	0.72		55.38	3.66	23.05	3.59	2.31	28.14	3527.52	39.59	178.77	6.41	535.79	4532.62	0.22
Rocky Creek - Jasper	0.00	0.08			0.00		0.56	0.32	0.05	0.01	1.63	0.00	4.22	5.17		0.06	12.10	0.01
Sturgeon Creek	0.00	105.85	0.93	0.03	0.00	45.34	6.76	50.42	6.90	21.73	26.00	3977.77	110.51	301.01	4.01	1175.16	5832.41	0.18
Ten Mile Creek	0.00	48.75	1.10	0.08		151.89	2.87	10.30	1.86	3.48	18.01	9807.14	31.96	194.88	3.48	49.47	10325.26	0.43

Table 22a. Sediment Load Percentages (Unimpaired Piedmont)

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Alcovy River	0.00%	18.40%	2.45%	0.34%	0.00%	34.80%	0.40%	0.21%	0.02%	0.80%	10.13%	0.51%	3.23%	6.68%	0.00%	22.05%
Bear Creek	0.00%	9.81%	0.17%	0.01%	0.00%	0.00%	1.65%	0.56%	0.14%	0.48%	22.23%	5.98%	7.35%	17.71%	0.00%	33.90%
Beaverdam Creek	0.00%	43.36%	0.83%	0.12%	0.00%	0.00%	2.86%	0.39%	0.23%	0.03%	3.34%	0.00%	4.03%	5.16%	0.00%	39.64%
Big Sandy Creek	0.00%	5.11%	0.08%	0.02%	0.00%	41.95%	1.36%	0.82%	0.16%	1.19%	2.94%	0.05%	4.68%	5.46%	0.00%	36.18%
Buck Creek	0.00%	11.10%	0.65%	0.20%	0.00%	0.00%	1.94%	0.86%	0.15%	1.22%	34.42%	1.56%	2.76%	13.23%	0.00%	31.91%
Chambliss Creek	0.00%	30.12%	1.46%	0.42%	0.00%	0.00%	3.38%	2.74%	0.47%	2.31%	16.08%	0.35%	3.57%	0.79%	0.00%	38.30%
Deer Creek	0.00%	19.25%	1.45%	0.30%	0.00%	0.00%	4.22%	1.85%	0.36%	1.88%	32.01%	0.00%	9.49%	0.50%	0.00%	28.68%
Douglas Creek	0.00%	11.43%	0.47%	0.00%	0.00%	0.00%	3.98%	2.76%	0.44%	1.51%	6.76%	0.00%	15.12%	2.61%	0.00%	54.92%
Falling Creek	0.00%	8.50%	0.01%	0.00%	0.00%	3.99%	3.39%	2.22%	0.92%	0.44%	0.81%	0.00%	4.39%	17.62%	0.01%	57.69%
Freeman Creek	0.00%	22.99%	2.94%	0.04%	0.00%	0.00%	1.34%	0.62%	0.02%	2.15%	15.23%	0.00%	4.88%	7.77%	0.00%	42.03%
Herds Creek	0.00%	10.04%	0.00%	0.00%	0.00%	0.00%	2.71%	1.21%	0.20%	0.22%	7.77%	0.00%	16.03%	9.13%	0.02%	52.65%
Honey Creek	0.00%	4.60%	0.79%	0.05%	0.00%	85.21%	0.21%	0.15%	0.00%	0.22%	3.01%	0.12%	0.35%	0.67%	0.00%	4.62%
Kinnard Creek	0.00%	13.11%	0.00%	0.00%	0.00%	0.00%	5.18%	2.40%	0.58%	0.24%	7.61%	0.00%	8.58%	14.83%	0.00%	47.49%
Lee Creek	0.00%	0.88%	0.00%	0.00%	0.00%	0.00%	1.15%	0.71%	0.18%	0.86%	2.82%	0.00%	3.37%	1.75%	0.00%	88.27%
Little Buck Creek	0.00%	5.84%	0.26%	0.02%	0.00%	0.00%	1.07%	0.61%	0.04%	0.76%	48.00%	0.00%	1.00%	22.85%	0.00%	19.54%
Little Deer Creek D/S DOT	0.00%	1.46%	0.13%	0.14%	0.00%	87.05%	0.43%	0.21%	0.05%	0.01%	0.54%	0.00%	0.62%	1.54%	0.00%	7.83%
Little Falling Creek	0.00%	8.60%	0.03%	0.00%	0.00%	0.00%	3.43%	2.14%	0.89%	1.29%	1.20%	0.00%	7.32%	25.17%	0.07%	49.86%
Long Branch	0.00%	11.41%	0.00%	0.00%	0.00%	0.00%	2.95%	3.43%	0.28%	2.93%	19.30%	0.00%	17.23%	20.82%	0.00%	21.65%
No Business Creek	0.00%	51.40%	8.84%	0.96%	0.00%	0.00%	0.47%	0.33%	0.01%	0.04%	6.53%	0.00%	0.35%	0.27%	0.00%	30.80%
Panther Creek	0.00%	16.81%	0.56%	0.49%	0.00%	0.00%	2.36%	1.32%	0.23%	2.13%	9.75%	5.46%	9.28%	8.90%	0.00%	42.71%
Peeksville Creek	0.00%	4.48%	0.57%	0.00%	0.00%	0.00%	3.11%	1.67%	0.24%	4.36%	29.47%	0.99%	17.67%	3.53%	0.00%	33.92%
Prairie Creek	0.00%	2.80%	0.11%	0.00%	0.00%	40.12%	0.23%	0.21%	0.04%	0.29%	21.57%	22.08%	1.12%	2.59%	0.00%	8.83%

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Rock Creek	0.00%	2.30%	0.04%	0.03%	0.00%	60.83%	1.65%	0.90%	0.78%	0.01%	18.27%	0.00%	5.41%	6.14%	0.03%	3.61%
Rocky Creek - Bibb	0.00%	29.88%	2.54%	0.23%	0.00%	7.70%	0.95%	0.34%	0.14%	0.16%	2.75%	0.00%	2.06%	5.98%	0.00%	47.29%
Rocky Creek Monroe	0.00%	16.77%	0.29%	0.01%	0.00%	0.06%	3.32%	1.62%	0.27%	2.13%	22.31%	0.13%	8.00%	11.24%	0.00%	33.84%
Sabbath Creek	0.00%	60.05%	4.65%	0.16%	0.00%	0.00%	0.42%	0.13%	0.05%	0.00%	0.32%	0.00%	0.26%	1.19%	0.00%	32.79%
Swan Creek U/S	0.00%	5.18%	0.16%	0.00%	0.00%	0.00%	0.97%	0.29%	0.04%	0.79%	65.78%	0.00%	1.19%	3.00%	0.00%	22.59%
Swan Creek D/S	0.00%	4.44%	0.11%	0.00%	0.00%	0.00%	1.85%	0.89%	0.16%	5.35%	35.49%	0.00%	14.68%	9.96%	0.00%	27.06%
Tobesofkee Creek upper	0.00%	1.19%	0.20%	0.05%	0.00%	85.40%	0.35%	0.22%	0.04%	0.44%	5.23%	0.16%	0.85%	0.98%	0.00%	4.89%
Tobesofkee Creek lower	0.00%	3.23%	0.06%	0.01%	0.00%	85.90%	0.45%	0.35%	0.06%	0.50%	3.24%	0.16%	1.10%	0.86%	0.00%	4.07%
Towaliga River upper	0.00%	13.40%	0.87%	0.03%	0.00%	0.07%	3.26%	1.92%	0.12%	2.50%	19.88%	3.59%	5.52%	10.37%	0.00%	38.47%
Towaliga River lower	0.00%	12.75%	1.40%	0.26%	0.00%	22.81%	1.75%	0.96%	0.07%	1.36%	11.02%	1.73%	4.04%	7.49%	0.00%	34.36%
Town Branch U/S Jackson WPCP	0.00%	39.01%	2.69%	0.83%	0.00%	0.00%	0.61%	1.34%	0.20%	0.90%	1.72%	0.00%	1.27%	6.15%	0.00%	45.30%
Troublesome Creek	0.00%	14.37%	1.29%	0.02%	0.00%	0.00%	7.12%	4.06%	0.19%	2.85%	15.93%	2.48%	6.87%	12.56%	0.00%	32.25%
Tussahaw Creek tributary	0.00%	14.00%	0.78%	0.02%	0.00%	0.00%	1.34%	0.68%	0.11%	0.74%	24.53%	2.13%	2.26%	21.37%	0.00%	32.04%
Tussahaw Creek upper	0.00%	13.53%	1.03%	0.13%	0.00%	9.04%	1.21%	0.64%	0.07%	1.20%	14.48%	3.73%	3.60%	13.12%	0.00%	38.23%
Tussahaw Creek lower	0.00%	11.76%	0.54%	0.07%	0.00%	14.55%	1.00%	0.70%	0.11%	0.81%	9.99%	2.01%	3.03%	6.04%	0.00%	49.38%
Yellow Creek	0.00%	5.10%	0.01%	0.00%	0.00%	0.00%	2.13%	1.33%	0.21%	4.20%	11.83%	0.00%	3.37%	13.79%	0.00%	58.02%
Yellow Water Creek Trib D/S	0.00%	0.00%	1.17%	0.98%	0.00%	0.00%	0.23%	0.28%	0.11%	0.19%	2.01%	2.32%	0.62%	4.36%	0.00%	87.71%
Yellow Water Creek U/S	0.00%	20.91%	1.13%	0.29%	0.00%	0.00%	0.99%	0.62%	0.20%	0.76%	16.09%	4.65%	3.21%	14.12%	0.00%	37.04%
Yellow Water Creek D/S	0.00%	21.19%	1.17%	0.28%	0.00%	0.00%	0.98%	0.61%	0.19%	0.74%	16.20%	4.57%	3.20%	13.88%	0.00%	36.99%
Yellow Water Creek lower	0.00%	21.03%	1.53%	0.58%	0.00%	0.00%	1.41%	0.65%	0.19%	2.04%	20.38%	0.87%	4.73%	12.19%	0.00%	34.40%

Table 22b. Sediment Load Percentages (Unimpaired Southeastern Plains)

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Alligator Creek	0.00%	1.47%	0.03%	0.00%	0.00%	0.91%	0.06%	0.22%	0.06%	0.07%	0.57%	82.79%	0.78%	4.84%	0.07%	8.14%
Big Creek - Houston	0.00%	0.46%	0.00%	0.00%	0.00%	0.00%	0.04%	0.02%	0.01%	0.00%	1.65%	91.56%	0.12%	1.83%	0.02%	4.30%
Big Creek	0.00%	0.77%	0.04%	0.02%	0.00%	0.09%	0.06%	0.03%	0.01%	0.01%	3.36%	84.32%	0.20%	2.27%	0.04%	8.80%
Big Indian Creek	0.00%	1.71%	0.05%	0.01%	0.00%	0.00%	0.09%	0.05%	0.03%	0.04%	4.64%	83.88%	0.78%	3.36%	0.09%	5.26%
Little Shellstone Creek	0.00%	5.50%	0.00%	0.00%	0.00%	0.00%	2.14%	0.33%	0.22%	0.19%	1.88%	40.11%	17.45%	0.32%	0.37%	31.49%
Little Sturgeon Creek	0.00%	1.40%	0.01%	0.00%	0.00%	0.00%	0.06%	0.70%	0.09%	0.56%	0.36%	71.38%	2.03%	2.76%	0.03%	20.61%
Mossy Creek	0.00%	1.45%	0.02%	0.00%	0.00%	0.00%	0.22%	0.12%	0.05%	0.06%	5.16%	85.58%	0.72%	1.33%	0.05%	5.25%
Richland Creek	0.00%	2.41%	0.25%	0.00%	0.00%	0.00%	3.20%	1.81%	0.42%	0.53%	0.95%	56.94%	1.58%	7.03%	0.09%	24.80%
Savage Creek	0.00%	3.33%	0.24%	0.00%	0.00%	0.00%	3.07%	2.25%	0.60%	1.17%	0.95%	49.99%	3.26%	13.62%	0.11%	21.40%
Shellstone Creek	0.00%	1.99%	0.06%	0.00%	0.00%	0.13%	0.61%	0.46%	0.15%	0.01%	0.33%	81.75%	0.71%	6.12%	0.07%	7.62%
South Prong Creek	0.00%	0.35%	0.02%	0.01%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	0.08%	95.87%	0.05%	2.37%	0.10%	1.11%
Sugar Creek	0.00%	2.01%	0.10%	0.02%	0.00%	0.70%	0.06%	0.23%	0.05%	0.07%	0.53%	82.03%	0.72%	5.29%	0.07%	8.14%
Whitewater Creek	0.00%	1.68%	0.04%	0.00%	0.00%	0.00%	1.17%	0.16%	0.20%	0.45%	7.75%	68.03%	2.95%	9.73%	0.13%	7.72%

Table 22c. Sediment Load Percentages (Impaired Piedmont)

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Barbershela Creek	0.00%	52.55%	7.67%	0.58%	0.00%	1.52%	0.13%	0.14%	0.01%	0.04%	0.83%	0.00%	0.01%	1.30%	0.00%	35.24%
Big Sandy Creek	0.00%	11.46%	0.00%	0.01%	0.00%	0.00%	2.69%	2.43%	0.44%	2.90%	22.86%	0.83%	4.60%	2.79%	0.00%	48.98%
Brown Branch	0.00%	5.21%	0.28%	0.02%	0.00%	0.00%	0.69%	0.36%	0.08%	0.01%	12.89%	2.62%	2.25%	6.26%	0.00%	69.35%
Butlers Creek	0.00%	11.81%	0.03%	0.00%	0.00%	0.00%	7.09%	4.77%	2.44%	0.00%	0.43%	0.00%	0.21%	21.93%	0.00%	51.30%
Cabin Creek	0.00%	34.65%	3.89%	0.83%	0.00%	0.00%	2.20%	1.32%	0.23%	0.04%	13.81%	0.07%	1.78%	2.49%	0.00%	38.69%
Calaparchee Creek	0.00%	11.07%	1.31%	0.28%	0.00%	0.00%	1.16%	0.34%	0.09%	0.51%	9.35%	0.00%	6.07%	10.32%	0.00%	59.50%
Carr Branch	0.00%	32.63%	1.75%	0.00%	0.00%	0.00%	7.37%	3.67%	0.37%	1.98%	6.75%	1.00%	10.93%	6.87%	0.00%	26.67%
Cobbs Creek	0.00%	56.88%	6.53%	0.74%	0.00%	0.00%	0.02%	0.11%	0.00%	0.72%	0.00%	0.04%	0.02%	0.00%	0.00%	34.94%
Cole Creek	0.00%	1.87%	0.09%	0.00%	0.00%	0.00%	1.46%	0.25%	0.05%	0.64%	73.99%	1.70%	2.10%	10.56%	0.00%	7.29%
Doolittle Creek	0.00%	47.36%	6.72%	1.04%	0.00%	0.00%	0.05%	0.08%	0.00%	0.02%	3.72%	0.00%	0.03%	0.02%	0.00%	40.95%
Dried Indian Creek	0.00%	31.85%	6.81%	2.68%	0.00%	0.00%	0.42%	0.56%	0.15%	0.96%	8.94%	6.50%	1.75%	2.07%	0.00%	37.32%
Eightmile Creek	0.00%	10.01%	0.00%	0.00%	0.00%	0.00%	0.80%	0.68%	0.08%	0.09%	1.62%	0.00%	1.61%	0.50%	0.00%	84.62%
Garner Creek	0.00%	50.11%	8.51%	0.81%	0.00%	0.00%	0.21%	0.34%	0.01%	0.14%	6.30%	0.21%	0.59%	0.00%	0.00%	32.76%
Gladesville Creek	0.00%	8.88%	0.05%	0.00%	0.00%	0.00%	4.58%	2.12%	1.12%	4.10%	2.62%	0.00%	14.22%	16.91%	0.21%	45.20%
Hansford Branch	0.00%	2.36%	0.00%	0.00%	0.00%	0.00%	6.87%	3.65%	1.56%	0.00%	0.80%	0.00%	1.53%	8.52%	0.00%	74.71%
Harmon Pye Branch	0.00%	9.81%	0.08%	0.00%	0.00%	0.00%	9.40%	4.16%	0.74%	0.00%	0.16%	0.00%	16.20%	11.72%	0.00%	47.72%
Herds Creek	0.00%	9.75%	0.00%	0.00%	0.00%	0.00%	4.02%	1.53%	0.42%	0.11%	5.84%	0.00%	17.57%	13.26%	0.01%	47.49%
Intrenchment Creek	0.00%	60.79%	6.65%	1.56%	0.00%	0.00%	0.23%	0.18%	0.04%	0.04%	15.25%	0.00%	1.08%	0.07%	0.00%	14.11%
Island Shoal Creek	0.00%	8.28%	0.24%	0.05%	0.00%	0.00%	1.51%	0.76%	0.08%	1.00%	13.59%	4.18%	3.35%	10.72%	0.00%	56.25%
Little Chehaw Creek	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	2.51%	0.74%	0.36%	0.01%	24.93%	1.23%	4.88%	15.14%	0.00%	50.19%
Little Deer Creek	0.00%	2.37%	0.20%	0.15%	0.00%	82.25%	0.81%	0.32%	0.12%	0.01%	0.64%	0.00%	1.54%	2.26%	0.00%	9.33%
Little Deer Creek Tributary	0.00%	0.03%	0.01%	0.14%	0.00%	97.63%	0.09%	0.07%	0.00%	0.01%	0.10%	0.00%	0.26%	0.13%	0.00%	1.53%
Little Suwanee Creek	0.00%	40.50%	13.77%	1.94%	0.00%	0.00%	0.52%	0.22%	0.00%	0.07%	3.37%	0.00%	0.84%	2.56%	0.00%	36.19%
Long Branch	0.00%	10.02%	0.00%	0.00%	0.00%	0.00%	6.24%	1.56%	0.65%	0.01%	1.77%	0.00%	27.28%	0.80%	0.00%	51.67%
Malholms Creek	0.00%	14.89%	0.00%	0.00%	0.00%	0.00%	1.55%	0.64%	0.12%	0.07%	10.46%	0.00%	4.89%	5.19%	0.00%	62.20%

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Mill Dam Creek	0.00%	0.24%	0.00%	0.00%	0.00%	0.00%	1.31%	0.86%	0.16%	0.02%	4.96%	0.00%	7.75%	5.50%	0.00%	79.20%
Mountain Creek	0.00%	45.33%	5.90%	1.98%	0.00%	0.00%	0.43%	0.19%	0.05%	0.75%	3.91%	0.00%	4.29%	3.48%	0.00%	33.70%
Phinazee Creek	0.00%	4.90%	0.03%	0.06%	0.00%	0.00%	2.02%	0.34%	0.04%	6.22%	53.31%	0.00%	21.60%	7.76%	0.00%	3.73%
Red Creek	0.00%	24.53%	0.38%	0.02%	0.00%	0.12%	3.24%	2.15%	0.27%	2.98%	17.37%	0.00%	8.00%	10.06%	0.00%	30.86%
Rock Creek	0.00%	0.01%	0.00%	0.03%	0.00%	88.95%	0.44%	0.29%	0.22%	0.00%	7.65%	0.00%	1.63%	0.52%	0.04%	0.21%
Rocky Creek - Butts	0.00%	4.68%	0.01%	0.00%	0.00%	0.00%	2.03%	0.95%	0.27%	7.02%	5.56%	0.00%	8.46%	1.55%	0.00%	69.47%
Rocky Creek - Monroe	0.00%	7.98%	0.32%	0.00%	0.00%	0.00%	1.37%	0.84%	0.12%	0.96%	40.17%	0.41%	3.21%	11.35%	0.00%	33.27%
Rocky Creek - Bibb	0.00%	38.58%	1.94%	0.05%	0.00%	0.00%	1.48%	1.01%	0.28%	0.13%	2.14%	0.00%	2.00%	14.18%	0.00%	38.20%
Rum Creek	0.00%	26.93%	1.95%	0.89%	0.00%	0.00%	2.73%	1.62%	0.39%	0.12%	9.39%	0.00%	6.56%	6.43%	0.00%	42.99%
Sand Branch	0.00%	0.59%	0.00%	0.00%	0.00%	0.00%	0.69%	1.23%	0.19%	0.01%	0.85%	0.00%	0.95%	0.15%	0.00%	95.34%
Scoggins Creek	0.00%	12.16%	0.01%	0.00%	0.00%	0.00%	1.72%	1.13%	0.43%	0.01%	7.06%	0.00%	11.16%	0.52%	0.00%	65.81%
Shoal Creek	0.00%	62.48%	5.16%	0.88%	0.00%	0.00%	0.07%	0.11%	0.01%	0.03%	0.17%	0.00%	0.00%	0.07%	0.00%	31.02%
Snapping Shoals Creek	0.00%	12.33%	3.46%	1.06%	0.00%	61.66%	0.12%	0.18%	0.02%	0.22%	1.06%	0.07%	0.38%	1.56%	0.00%	17.88%
South River	0.00%	48.90%	7.83%	2.37%	0.00%	0.00%	0.33%	0.24%	0.04%	0.10%	5.24%	0.00%	0.85%	2.35%	0.00%	31.75%
Third Branch	0.00%	10.02%	0.00%	0.00%	0.00%	0.00%	6.24%	1.56%	0.65%	0.01%	1.77%	0.00%	27.28%	0.80%	0.00%	51.67%
Tobesofkee Creek	0.00%	11.89%	3.76%	0.96%	0.00%	0.00%	0.90%	0.36%	0.09%	0.56%	52.59%	2.57%	1.95%	5.89%	0.00%	18.50%
Tributary to Little Haynes Creek	0.00%	29.22%	3.00%	0.00%	0.00%	31.07%	0.26%	0.38%	0.01%	1.17%	9.46%	0.00%	0.65%	0.48%	0.00%	24.30%
Tobler Creek	0.00%	14.43%	0.49%	0.16%	0.00%	0.05%	2.95%	1.83%	0.30%	0.05%	3.01%	0.14%	9.46%	4.04%	0.00%	63.09%
Town Branch	0.00%	39.80%	4.53%	2.13%	0.00%	0.00%	0.36%	0.52%	0.20%	0.02%	2.74%	0.00%	0.62%	0.38%	0.00%	48.70%
Tributary to Tobesofkee Creek	0.00%	18.55%	3.92%	0.64%	0.00%	0.00%	0.65%	0.13%	0.09%	1.10%	46.99%	4.94%	1.45%	0.00%	0.00%	21.53%
Walnut Creek - Jones	0.00%	1.77%	0.04%	0.01%	0.00%	79.26%	0.38%	0.22%	0.06%	0.01%	4.91%	0.06%	1.90%	2.98%	0.00%	8.40%
Walnut Creek - Crawford	0.00%	7.71%	0.05%	0.02%	0.00%	1.51%	2.76%	2.78%	0.39%	0.26%	23.80%	0.00%	10.82%	7.36%	0.00%	42.53%
White Creek	0.00%	7.32%	0.05%	0.00%	0.00%	0.00%	3.06%	1.14%	0.25%	5.05%	30.08%	0.02%	9.19%	11.05%	0.00%	32.78%
Wise Creek	0.00%	10.83%	0.11%	0.04%	0.00%	0.00%	6.43%	3.60%	0.76%	0.02%	6.59%	0.00%	19.17%	12.96%	0.00%	39.49%
Wood Creek	0.00%	8.15%	0.00%	0.14%	0.00%	0.00%	0.86%	0.54%	0.10%	0.02%	74.51%	1.41%	0.69%	5.87%	0.00%	7.71%

Table 22d. Sediment Load Percentages (Impaired Southeastern Plains)

Percent Total Sediment Load																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Transitional	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Emergent Herbaceous Wetlands	Road
Bay Creek	0.00%	2.60%	0.58%	0.46%	0.00%	0.00%	0.06%	0.05%	0.03%	0.07%	4.34%	84.85%	0.27%	0.14%	0.00%	6.55%
Big Grocery Creek	0.00%	0.14%	0.00%	0.00%	0.00%	0.00%	0.97%	0.89%	0.55%	0.08%	0.02%	0.00%	0.24%	31.89%	0.00%	65.21%
Big Horse Creek	0.00%	0.98%	0.02%	0.00%	0.00%	2.48%	0.04%	0.14%	0.03%	0.01%	0.47%	87.92%	0.70%	2.62%	0.06%	4.53%
Big Indian Creek	0.00%	1.84%	0.10%	0.04%	0.00%	0.32%	0.08%	0.05%	0.02%	0.06%	4.79%	80.70%	0.60%	4.21%	0.07%	7.14%
Bluff Creek	0.00%	0.47%	0.01%	0.00%	0.00%	0.96%	0.02%	0.06%	0.01%	0.02%	0.17%	95.28%	0.22%	1.65%	0.03%	1.09%
Cedar Creek	0.00%	0.62%	0.02%	0.00%	0.00%	2.64%	0.02%	0.06%	0.01%	0.02%	0.51%	93.93%	0.32%	1.54%	0.05%	0.27%
Crooked Creek	0.00%	1.19%	0.01%	0.00%	0.00%	0.45%	0.04%	0.15%	0.04%	0.04%	0.49%	83.33%	0.68%	3.80%	0.05%	9.72%
Deep Creek	0.00%	2.41%	0.10%	0.00%	0.00%	0.00%	0.54%	0.33%	0.09%	0.43%	7.04%	75.09%	3.22%	8.17%	0.14%	2.43%
Flat Creek	0.00%	1.03%	0.01%	0.01%	0.00%	0.27%	0.06%	0.03%	0.02%	0.13%	2.86%	77.15%	0.46%	3.42%	0.05%	14.50%
Folsom Creek	0.00%	0.81%	0.02%	0.00%	0.00%	1.91%	0.02%	0.17%	0.02%	0.03%	0.52%	88.72%	0.21%	1.20%	0.03%	6.33%
Gum Swamp Creek	0.00%	0.62%	0.02%	0.00%	0.00%	0.91%	0.05%	0.05%	0.02%	0.02%	0.53%	91.66%	0.29%	2.49%	0.05%	3.29%
Hartley Branch	0.00%	1.10%	0.15%	0.00%	0.00%	0.00%	0.46%	0.11%	0.11%	0.11%	1.72%	85.78%	1.38%	4.11%	0.24%	4.73%
Horse Creek	0.00%	1.13%	0.03%	0.00%	0.00%	0.00%	0.04%	0.10%	0.03%	0.02%	0.56%	91.32%	0.45%	2.65%	0.05%	3.63%
House Creek	0.00%	1.41%	0.05%	0.00%	0.00%	1.18%	0.04%	0.09%	0.02%	0.02%	0.76%	91.81%	0.31%	0.44%	0.04%	3.84%
Limestone Creek	0.13%	11.62%	0.42%	0.09%	0.00%	0.92%	30.42%	19.97%	9.51%	0.70%	4.62%	3.15%	7.45%	6.66%	0.36%	3.98%
Mossy Creek	0.00%	1.32%	0.09%	0.01%	0.00%	0.00%	0.14%	0.07%	0.03%	0.04%	7.62%	83.03%	0.72%	1.80%	0.04%	5.11%
Otter Creek	0.00%	2.71%	0.11%	0.02%	0.00%	1.22%	0.08%	0.51%	0.08%	0.05%	0.62%	77.83%	0.87%	3.94%	0.14%	11.82%
Rocky Creek - Jasper	0.00%	0.63%	0.00%	0.00%	0.00%	0.00%	4.65%	2.64%	0.42%	0.11%	13.44%	0.00%	34.85%	42.77%	0.00%	0.50%
Sturgeon Creek	0.00%	1.81%	0.02%	0.00%	0.00%	0.78%	0.12%	0.86%	0.12%	0.37%	0.45%	68.20%	1.89%	5.16%	0.07%	20.15%
Ten Mile Creek	0.00%	0.47%	0.01%	0.00%	0.00%	1.47%	0.03%	0.10%	0.02%	0.03%	0.17%	94.98%	0.31%	1.89%	0.03%	0.48%

5.3 Seasonal Variation

Sediment is expected to fluctuate according to the amount and distribution of rainfall. Since rainfall is greatest in the spring and winter seasons, it is expected that sediment loadings would be highest during these seasons. However, these seasonal fluctuations and other short-term variability in loadings due to episodic events is usually evened out by the response of the biological community to habitat alteration, which is a long-term process. Therefore, the average annual sediment load was determined.

5.4 Margin of Safety

The MOS is a required component of TMDL development. There are two basic methods for incorporating the MOS: 1) implicitly incorporate the MOS using conservative model assumptions to develop allocations; or 2) explicitly specify a portion of the TMDL as the MOS and use the remainder for allocations. For this TMDL, the MOS was implicitly incorporated in the use of conservative modeling assumptions, including the selection of average USLE factors, the use of the average sediment loading rates for the numeric targets, and the assumption that no BMPs were used.

5.5 Total Sediment Load

The total annual sediment load was determined by adding the WLA (WLA + WLAsw) and the LA. The MOS, as described above, was implicitly included in the TMDL analysis and does not factor directly into the TMDL equation as shown above.

The USLE method used calculates a total annual sediment load, as opposed to a daily load. The R factor from the USLE (the rainfall erosivity index) is statistically calculated from the annual summation of rainfall energy in every storm, which correlates to the raindrop size, times its maximum 30-minute intensity. It would be difficult to determine the maximum daily load of sediment to a stream, considering the episodic nature of rainfall events. Table 23 provides the rainfall statistics from six meteorological stations located throughout Georgia, and shows the variability of rainfall frequency and amount. This information may be used to calculate daily load. However, it is a course estimate and will be dependent on the antecedent conditions.

Table 23. Georgia Meteorological Rainfall Statistics

	Normal Monthly Precipitation (in.) / Avg. Days of Precipitation (0.1 in. or more)											
Station	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Athens, GA	4.6/11	4.4/9	5.5/11	4.0/8	4.4/9	3.9/9	4.9/11	3.7/9	3.4/8	3.3/7	3.7/8	4.1/10
Atlanta, GA	4.8/11	4.8/10	5.8/11	4.3/9	4.3/9	3.6/10	5.0/12	3.7/10	3.4/8	3.1/6	3.9/8	4.3/10
Augusta,GA	4.1/10	4.3/9	4.7/10	3.3/8	3.8/9	4.1/9	4.2/11	4.5/10	3.0/7	2.8/6	2.5/7	3.4/9
Columbus, GA	4.6/10	4.9/10	5.8/10	4.3/8	4.2/8	4.1/9	5.5/13	3.7/10	3.2/8	2.2/5	3.6/8	5.0/10
Macon, GA	4.6/11	4.7/10	4.8/10	3.5/7	3.6/9	3.6/10	4.3/13	3.6/11	2.8/8	2.2/6	2.7/7	4.3/9
Savannah, GA	3.6/9	3.2/9	3.8/9	3.0/7	4.1/9	5.7/10	6.4/14	7.5/13	4.5/10	2.4/6	2.2/6	3.0/8

The total annual sediment loads for each of the impaired watersheds are summarized in Table 24, along with any required sediment load reduction. The WLAs (WLA + WLAsw) provided in Table 24 are for accounting purposes only. A Summary Memorandum for each watershed is provided in Appendix A.

The USLE method used indicates that the largest sediment loads come from areas with close proximity to the stream grid, especially dirt roads and croplands. The model does not account for any BMPs that are currently being used to control erosion from these areas, and thus may over estimate some sediment loads.

Table 24. Total Annual Sediment Loads and the Required Sediment Reduction

Name	Current Load (tons/yr)	WLA (tons/yr)	WLAsw (tons/yr)	LA (tons/yr)	Allowable Total Load (tons/yr)	% Reduction
Barbershela Creek	681.7		180.0	77.2	257.1	62.3
Big Sandy Creek	155.4			155.4	155.4	0.0
Brown Branch	430.1			189.3	189.3	56.0
Butlers Creek	59.7			59.7	59.7	0.0
Cabin Creek	982.4	257.2		223.1	480.3	51.1
Calaparchee Creek	208.5			153.5	153.5	26.4
Carr Branch	58.1		10.2	47.9	58.1	0.0
Cobbs Creek	257.9		82.8	35.5	118.3	54.1
Cole Creek	122.5			56.3	56.3	54.0
Doolittle Creek	712.9		191.4	82.0	273.4	61.6
Dried Indian Creek	367.5		126.5	121.0	247.6	32.6
Eightmile Creek	86.0			34.9	34.9	59.4
Garner Creek	389.0		142.5	61.1	203.6	47.7
Gladesville Creek	181.7			181.7	181.7	0.0
Hansford Branch	26.1			26.1	26.1	0.0
Harmon Pye Branch	88.4			88.4	88.4	0.0
Herds Creek	487.8			487.8	487.8	0.0
Intrenchment Creek	330.8		231.6	99.3	330.8	0.0
Island Shoal Creek	244.7			160.2	160.2	34.5
Little Chehaw Creek	105.7			105.7	105.7	0.0
Little Deer Creek	1,745.4	162.7		134.7	297.4	83.0
Little Deer Creek Tributary	1,333.4			43.7	43.7	96.7
Little Suwannee Cr	943.6		257.7	110.4	368.1	61.0
Long Branch	118.2			101.0	101.0	14.6
Malholms Creek	16.4			16.4	16.4	0.0
Mill Dam Creek	139.9			80.0	80.0	42.8
Mountain Creek	385.3			179.3	179.3	53.5
Phinazee Creek	123.5			111.8	111.8	9.5
Red Creek	606.9			482.0	482.0	20.6
Rock Creek	153.4	43.8		9.3	53.1	65.4
Rocky Creek - Butts	200.6			134.3	134.3	33.1
Rocky Creek - Monroe	396.8			254.6	254.6	35.8
Rocky Creek - Bibb	259.8		77.1	157.2	234.2	9.9

Name	Current Load (tons/yr)	WLA (tons/yr)	WLAsw (tons/yr)	LA (tons/yr)	Allowable Total Load (tons/yr)	% Reduction
Rum Creek	501.2	63.9		372.9	436.8	12.8
Sand Branch	140.7			44.9	44.9	68.1
Scoggins Creek	252.8			132.7	132.7	47.5
Shoal Creek	269.9		114.9	49.2	164.1	39.2
Snapping Shoals Cr	3,569.5	56.5	418.0	197.6	672.1	81.2
South River	2,621.0		1,571.4	673.5	2,244.8	14.4
Third Branch	118.2			101.0	101.0	14.6
Tobesofkee Creek	402.5	54.8		292.9	347.7	13.6
Tobler Creek	404.3			369.2	369.2	8.7
Town Branch	199.4	21.3		39.6	60.9	69.5
Tributary to Little Haynes Cr	305.9			87.6	87.6	71.4
Trib to Tobesofkee Cr	67.2			37.6	37.6	44.0
Walnut Creek – Jones	6,491.6			1,067.3	1,067.3	83.6
Walnut Creek - Crawford	369.4			369.4	369.4	0.0
White Creek	128.8			108.0	108.0	16.1
Wise Creek	339.6			339.6	339.6	0.0
Wood Creek	146.2			62.8	62.8	57.0
Bay Creek	302.7	100.5		89.8	190.3	37.1
Big Grocery Creek	155.2			155.2	155.2	0.0
Big Horse Creek	18,632.5			10,482.1	10,482.1	43.7
Big Indian Creek	22,048.5	137.0		13,042.8	13,179.8	40.2
Bluff Creek	18,379.3			5,918.9	5,918.9	67.8
Cedar Creek	3,445.8			1,090.8	1,090.8	68.3
Crooked Creek	4,961.5			3,556.5	3,556.5	28.3
Deep Creek	1,274.5			1,274.5	1,274.5	0.0
Flat Creek	7,315.5			2,299.2	2,299.2	68.6
Folsom Creek	4,369.6			1,737.1	1,737.1	60.2
Gum Swamp Creek	8,360.4			4,908.0	4,908.0	41.3
Hartley Branch	392.6			364.8	364.8	7.1
Horse Creek	5,734.2			2,986.3	2,986.3	47.9
House Creek	1,565.4			345.9	345.9	77.9
Limestone Creek	12,917.2			1,613.8	1,613.8	87.5
Mossy Creek	12,950.8		53.6	7,606.0	7,659.7	40.9
Otter Creek	4,532.6			2,941.0	2,941.0	35.1
Rocky Creek - Jasper	12.1			12.1	12.1	0.0
Sturgeon Creek	5,832.4			4,634.9	4,634.9	20.5
Ten Mile Creek	10,325.3			3,444.6	3,444.6	66.6

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. The Ocmulgee River Basin, along with the Oconee and Altamaha River Basins, were the basins of focused monitoring in 2004 and will again receive focused monitoring in 2009. 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

Based on the findings of the source assessment, it was determined that most of the sediment found in the Ocmulgee 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, changes in habitat and aquatic communities are usually slow to respond, which is why monitoring will continue according to the five-year monitoring cycle. Thus, this TMDL recommends that the compliance with NPDES permits and implementation of Best Management Practices (BMPs) be monitored. The anticipated effects of compliance with NPDES and implementation of BMPs will contribute to the improvement of stream habitats and water quality, and thus be an indirect measurement of the TMDL.

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

- Compliance with NPDES permit limits and requirements;
- Implementation of GFC Best Management Practices for forestry;
- Adoption of NRCS Conservation Practices;
- Adherence to the Mined Land Use Plan prepared as part of the Surface Mining Permit Application;
- Adoption of proper unpaved road maintenance practices;
- Implementation of Erosion and Sedimentation Control Plans for land disturbing activities; and
- Mitigation and prevention of stream bank erosion due to increased stream flow and velocities caused by urban runoff.

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 municipal, industrial and storm water permits, monitoring and compliance with limitations, and appropriate enforcement actions for violations.

In accordance with GA EPD rules and regulations, all NPDES dischargers in the watershed are required to meet their current NPDES permit limits. It is recommended that there be no authorized increase in the mass loading of sediment (TSS) above that identified in the TMDL. However, if there is available assimilative capacity, new discharges may be allowed based on engineering and current stream biological integrity studies.

The removal of mined material involves water pumped from the mine pit, and mineral processing involves the disposal of process waters. These waters are treated through either sedimentation ponds or detention basins prior to being discharged to the stream and are regulated by NPDES permits. It is recommended that the peak flow from mining sites be maintained at pre-development levels in order to control bank erosion and instabilities in the receiving stream. In addition, monitoring frequencies should be such that the total annual sediment loads coming from mining facilities can be characterized.

The GA EPD has developed a General Storm Water NPDES Permit for Construction Activities. The current permit is required for all construction sites disturbing one or more acres. In 2003, this permit will cover all construction sites disturbing one or more acres. All sites required to have this permit are authorized to discharge storm water associated with construction activity to the waters of the State in accordance with the limitations, monitoring requirements, and other conditions set forth in Parts I through VII of the Georgia Storm Water Permit. The permit requires all sites to have an Erosion and Sedimentation Control Plan; to implement, inspect and maintain BMPs; and to monitor storm water for turbidity. Georgia's General Storm Water Permit can be considered a water quality-based permit, in that the numeric limits in the permit, if met and enforced, will not cause a water quality problem.

It is recommended that construction sites within impaired watersheds located within 100 feet of the impaired stream, or its tributaries, use DIRT II techniques to model and manage storm water runoff from these sites. All construction sites will monitor their storm water runoff as required by the General Storm Water NPDES Permit for Construction Activities. It is also recommended that the peak flow from construction sites be maintained at pre-development levels.

6.2.2 Nonpoint Source Land Use Approaches

The GA EPD is responsible for administering and enforcing laws to protect the waters of the State. GA EPD is the lead agency for implementing the State's Nonpoint Source Management Program. Regulatory responsibilities include establishing water quality standards and use classifications, assessing and reporting water quality conditions, issuing point source permits, issuing water withdrawal and ground water permits, and regulating land-disturbing activities. Georgia is working with local governments, agricultural, and forestry agencies such as the Natural Resources Conservation Service, the Georgia Soil and Water Conservation Commission, and the Georgia Forestry Commission to foster the implementation of BMPs that address nonpoint source pollution. In addition, public education efforts are being targeted to individual stakeholders to provide information regarding the use of BMPs to protect water quality. The following sections describe in more detail the specific measures to reduce nonpoint sources of sediment by land use type.

6.2.2.1 Forested Land

In 1978, GA EPD designated the Georgia Forestry Commission (GFC) to be the lead agency in managing and implementing the silvicultural portion of Georgia's Nonpoint Source Management Program. The GFC is responsible for coordinating water quality issues with regard to forested land in Georgia. The GFC is basically responsible for:

- Developing Best Management Practices (BMPs) for the forestry industry,
- Educating the forestry community on BMPs, and
- Conducting site inspections for compliance with the established BMPs.

The GFC formed a Forestry Nonpoint Source Pollution Technical Task Force to assess the extent of water pollution caused by forestry practices, and develop recommendations to reduce or eliminate erosion and sedimentation. After a three-year field study, the task force developed a set of BMPs that address all aspects of silviculture, including forest road construction, timber harvesting, site preparation, and forest regeneration. The task force recommended the BMPs be implemented through a voluntary program, exempt from permitting under the Georgia Erosion and Sedimentation Control Act, emphasizing educational and training programs instead. In 1997, the original BMP document was revised to incorporate the 1989 Wetland BMP manual developed by the Georgia Forestry Association. The current BMP manual, *Georgia's Best Management Practices for Forestry,* was developed and became effective January 1, 1999 (GA EPD, 1999).

It is the responsibility of the GFC to educate and inform the forest community (landowners, procurement and land management foresters, consulting foresters, loggers, site prep and tree planting contractors) on the importance of BMPs. The GFC statewide coordinator and the twelve district coordinators conduct educational programs across the state. The district coordinators receive specialized training in erosion and sediment control, forest road layout and construction, stream habitat assessment, rapid bioassessment (macroinvertebrate) monitoring, wetland delineation, and fluvial geomorphology. The GFC has developed training videos, slide programs, tabletop exhibits, and BMP billboards that are displayed at wood yards across the state. For the benefit of private landowners selling timber, the GFC has developed a Sample Forest Products Sale Agreement, which includes fill in the blank spaces for specific BMP incorporation. Since December 1995, the GFC has been cooperating with the University of Georgia School of Forest Resources, the Georgia Forestry Association, and American Forest and Paper Association (AFPA) member companies in the ongoing education of loggers and timber buyers through the Sustainable Forestry Initiative (SFI) Master Timber Harvester program. This includes an intensive training session on the BMPs conducted by the GFC.

To determine if educational efforts have been successful and if the BMPs are effective at minimizing erosion and sedimentation, the GFC conducted BMP compliance surveys in 1991 and 1992. In 1998, another BMP survey was conducted using a newly developed and more rigorous protocol recommended by a Southern Group of State Foresters (SGSF) Task Force. The GFC sampled about 10 percent of the forestry operations that occur annually. The number of samples taken in each county was based on the volume of wood harvested as reported in the state's latest Product Drain Report. Sites were randomly selected to reflect various forest types (non-industrial private forest, forest industry, and publicly owned lands). The survey results show that of the number of acres evaluated, the number in BMP compliance for the most part was very good. In 1991, approximately 86 percent of the acres evaluated were in compliance. In 1992, the figure increased to 92 percent compliance and in 1998, compliance rose to 98 percent.

The GFC also investigates and mediates complaints or concerns involving forestry operations on behalf of the GA EPD and the Army Corps of Engineers (COE) when stream water quality and wetlands are involved, respectively. Complaints from citizens are common, particularly in counties growing in population where landowners are living close to commercial forestry operations. After notifying the forest owner, the GFC District Coordinator conducts a field inspection to determine if BMPs were followed, if the potential for water quality problems exists,

and who is the responsible party. If the complaint is valid, GFC will work with the responsible party until the problem is corrected. However, the GFC has no regulatory authority. In situations where the GFC cannot get satisfactory compliance, the case is turned over to GA EPD or COE for enforcement actions under the Georgia Water Quality Control Act or Section 404 of the Federal Clean Water Act.

It is recommended that the GFC continue to encourage BMP implementation, educational training programs, and site compliance surveys. The numbers of individuals trained and site compliance inspections should be recorded each year. In addition, the number of complaints received, the actions taken, and enforcement actions written should be recorded.

6.2.2.2 Agricultural Land

There are a number of agricultural organizations that work to support Georgia's more than 40,000 farmers. The following three organizations have primary responsibility for working with farmers to promote soil and water conservation:

- The University of Georgia - Cooperative Extension Service
- Georgia Soil and Water Conservation Commission
- Natural Resources Conservation Service

The University of Georgia (UGA) has faculty, County Cooperative Extension Agents, and technical specialists who provide services in several key areas relating to agricultural impacts on water quality. These include classroom instruction, basic and applied research, consulting assistance, and information on nonpoint source water quality impacts.

The Georgia Soil and Water Conservation Commission (GSWCC) was created in 1937 by a Georgia Legislative Act. In 1977, GA EPD designated the GSWCC as the lead agency for agricultural Nonpoint Source Management in the State. The GSWCC develops nonpoint source management programs and conducts educational activities to promote conservation and protection of land and water devoted to agricultural uses. In September 1994, the GSWCC developed a BMP manual, *Agricultural Best Management Practices for Protecting Water Quality in Georgia,* for the agricultural community (GSWCC, 1994).

The Natural Resources Conservation Service (NRCS) cooperates with Federal, State, and local governments to provide financial and technical assistance to farmers. NRCS develops standards and specifications for BMPs that are to be used to improve, protect, or maintain our State's natural resources. Practice standards establish the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining BMPs. Practice specifications describe the technical details and workmanship required to install a BMP and the quality and extent of materials to be used in a BMP.

The NRCS provides Conservation Practice Standards, found in the electronic Field Office Technical Guide (eFOTG), on their website (http://www.nrcs.usda.gov/technical/efotg/). Some of these BMPs may be used for farming operations to reduce soil erosion. It is recommended that the agricultural communities with cropland close to impaired streams, and pastureland where grazing animals have access to the stream, investigate the various BMPs available to them in order to reduce soil erosion and bank collapse.

The 1996 Farm Bill and PL83-566 Small Watershed Program provided new financial assistance programs to address high priority environmental protection goals. Some programs that specifically address erosion and sedimentation are:

- The Environmental Quality Incentives Program
- Conservation Reserve Program
- Small Watershed Program

The Environmental Quality Incentives Program (EQIP) is a USDA cost-share program available to farmers to address natural resource problems. EQIP offers financial, educational and technical assistance funding for installing BMPs that reduce soil erosion, improve water quality, or enhance wildlife habitats.

The Conservation Reserve Program (CRP) was originally designed to provide incentive and offer assistance to farmers to convert highly erodible and other environmentally sensitive land normally devoted to crop production, to land with other long-term resource-conserving cover. CRP has been expanded to place eligible acreage into filter strips, riparian buffers, grassed waterways, or contour grass strips. Each of these practices helps to reduce erosion and sedimentation and improve water quality.

The Small Watershed Program provides financial and technical assistance funding for the installation of BMPs in watersheds less than 250,000 acres. This program is used to augment ongoing conservation programs where serious natural resource degradation has or is occurring. Agricultural water management, which includes projects that reduce soil erosion and sedimentation and improve water quality, is one of the eligible purposes of this program. NRCS is authorized by Public Law 83-566 to conduct river basin surveys and investigations. The NRCS River Basin Planning Program is designed to collect data on natural resource conditions within river basins of focus. NRCS is providing technical assistance to the GSWCC and the GA EPD with the Georgia River Basin Planning Program. Planning activities associated with this program will describe conditions of the agricultural natural resource base once every five years.

Every five years, the NRCS conducts the National Resources Inventory (NRI). The NRI is a statistically based sample of land use and natural resource conditions and trends, and it covers non-federal land in the United States. The NRI found that the total wind and water erosion on cropland and Conservation Reserve Program land in Georgia declined 38 percent from 3.1 billion tons per year in 1982 to 1.9 billion tons per year in 1997 (USDA-NRCS, 1997).

NRCS also provides a web-based database application (Performance Results System, PRS) so conservation partners and the public can gain fast and easy access to the accomplishments and the progress made toward strategies and performance goals. The web site is http://ias.sc.egov.usda.gov/prshome/default.html.

It is recommended that the GSWCC and the NRCS continue to encourage BMP implementation, education efforts, and river basin surveys with regard to River Basin Planning. The five year National Resources Inventory should be continued and GA EPD supports the PRS website.

6.2.2.3 Mine Sites

Surface mining and mineral processing present two threats to surface waters. The first threat is the wastewater from mining and mineral processing operations. These discharges are considered point sources, and are therefore regulated by NPDES permits and were discussed in Section 6.2.1 above. The second threat involves mine reclamation activities. Reclamation occurs throughout the mining operation. From the first cut to the last, overburden is moved

twice. With each movement of the soil and rock debris, the overburden must be managed to prevent soil and mineral erosion. Until the mine is re-vegetated, and hence reclaimed, BMPs must be implemented to prevent nonpoint source pollution.

The Georgia Surface Mining Act of 1968 provides for the issuance of mining permits at the discretion of the Director of GA EPD. These permits are administered by the Land Protection Branch of GA EPD. The surface mining permit application must include a Mined Land Use Plan, reclamation strategies, and surety bond requirements to guarantee proper management and reclamation of surface mined areas. The Mined Land Use Plan specifies activities prior to, during, and following mining to dispose of refuse and control erosion and sedimentation. The reclamation strategy includes the use of operational BMPs and procedures. The BMPs used are drawn from the *Field Manual for Erosion and Sedimentation Control in Georgia* (GSWCC, 2005), *Georgia's Best Management Practices for Forestry* (GA EPD, 1999), and from other states. Thus, the issuance of a surface mining permit in effect addresses BMPs to control nonpoint source pollutants. The regional GA EPD offices monitor and inspect surface mining sites to assess permit compliance.

It is recommended that special attention be given to those facilities located in impaired watersheds. The implementation and maintenance of BMPs used to control erosion should be reviewed during the site inspections.

The Georgia Mining Association (GMA) is an informal trade association of the mining industry. It serves more than 200 members, 47 mining companies and over 150 associate companies. The association monitors legislative developments and coordinates industry response. It educates miners about laws and regulations that affect them and provides a forum for the exchange of ideas. Through its newsletters, seminars, workshops, and annual conventions, the GMA serves as a source for mining industry information. It has several committees, including the Environmental Committee, that meet three to four times a year. The mining industry is conducting informal discussions on the potential of developing industry-wide standards for BMPs to prevent and reduce nonpoint source pollution. If these standards are adopted, the mining industry would likely conduct demonstration projects to gauge the effectiveness of the BMPs.

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 unpaved 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.

6.2.2.5 Urban Development

The Erosion and Sedimentation Act, established in 1975, provides the mechanism for controlling erosion and sedimentation from land-disturbing activities. This Act establishes a permitting process for land-disturbing activities. Many local governments and counties have adapted erosion and sedimentation ordinances and have been given authority to issue and enforce permits for land-disturbing activities. Approximately 32 counties and 240 municipalities in Georgia have been certified as the local issuing authority. In areas where local governments have not been certified as an issuing authority, the GA EPD is responsible for permitting, inspecting, and enforcing the Erosion and Sedimentation Act.

To receive a land-disturbing permit, an applicant must submit an erosion and sedimentation control plan that incorporates specific conservation and engineering BMPs. The *Field Manual for Erosion and Sediment Control in Georgia*, developed by the State Soil and Water Conservation Commission, may be used as a guide to develop erosion and sedimentation control plans (GSWCC, 2005).

Local governments, with oversight by the GA EPD, and the Soil and Water Conservation Districts, are primarily responsible for implementing the Georgia Erosion and Sedimentation Act, O.C.G.A. §12-7-1 (amended in 2003). Reports of suspected violations are made to the agency that issued the permit. In cases with local issuing authority, if the violation continues, the complaint is referred to the appropriate Soil and Water Conservation District. If the situation remains unresolved, the complaint is then referred to GA EPD for enforcement action. Enforcement may include administrative orders, injunctions, and civil penalties. It is recommended that the local and state governments continue to work to implement the provisions of the Georgia Erosion and Sedimentation Act across Georgia.

Storm water runoff from developed urban areas (post-construction) can also have an impact on the transport of sediment to and within streams. Urbanization increases imperviousness, resulting in an increase in the volume of runoff that enters the streams. In addition, the stream flow rates may increase significantly from pre-construction rates. These changes in the stream flow can result in stream bank erosion and stream bottom down cutting. It is recommended that local governments review and consider implementation of practices presented in the *Land*

Development Provisions to Protect Georgia Water Quality (GA EPD, 1997). Additional information on site design and best management practices to address stormwater run-off may be found in the *Georgia Stormwater Management Manual* (the "Blue Book") (ARC, 2001) and Georgia's *Green Growth Guidelines* (GADNR, 2005), both of which are available electronically via the internet.

6.3 Reasonable Assurance

Permitted discharges will be regulated through the NPDES permitting process described in this report. Through its NPDES permitting process, GA EPD will determine whether a new discharger has a reasonable potential of discharging sediment levels equal to or greater than the total allocated load. The results of this reasonable potential analysis will determine the specific requirements in an individual facility's NPDES permit. As part of its analysis, the GA EPD will use its EPA approved 2003 NPDES Reasonable Potential Procedures to determine whether monitoring requirements or effluent limitations are necessary.

Georgia is working with local governments, agricultural and forestry agencies, such as the Natural Resources Conservation Service, the Georgia Soil and Water Conservation Commission, and the Georgia Forestry Commission, to foster the implementation of best management practices to address nonpoint sources. In addition, public education efforts will be targeted to individual stakeholders to provide information regarding the use of best management practices to protect water quality.

6.4 Public Participation

A thirty-day public notice was provided for this TMDL. During this time, the availability of the TMDL was public noticed, a copy of the TMDL was provided as requested, and the public was invited to provide comments on the TMDL.

7.0 INITIAL TMDL IMPLEMENTATION PLAN

The GA EPD has coordinated with EPA to prepare this Initial TMDL Implementation Plan for this TMDL. GA EPD has also established a plan and schedule for development of a more comprehensive implementation plan after this TMDL is established. GA EPD and EPA have executed a Memorandum of Understanding that documents the schedule for developing the more comprehensive plans. This Initial TMDL Implementation Plan includes a list of best management practices and provides for an initial implementation demonstration project to address one of the major sources of pollutants identified in this TMDL while State and/or local agencies work with local stakeholders to develop a revised TMDL implementation plan. It also includes a process whereby GA EPD and/or Regional Development Centers (RDCs) or other GA EPD contractors (hereinafter, "GA EPD Contractors") will develop expanded plans (hereinafter, "Revised TMDL Implementation Plans").

This Initial TMDL Implementation Plan, written by GA EPD and for which GA EPD and/or the GA EPD Contractor are responsible, contains the following elements.

1. EPA has identified a number of management strategies for the control of nonpoint sources of pollutants, representing some best management practices. The "Management Measure Selector Table" shown below identifies these management strategies by source category and pollutant. Nonpoint sources are the primary cause of excessive pollutant loading in most cases. Any wasteload allocations in this TMDL will be implemented in the form of water-quality based effluent limitations in NPDES permits issued under CWA Section 402. See 40 C.F.R. § 122.44(d)(1)(vii)(B). NPDES permit discharges are a secondary source of excessive pollutant loading, where they are a factor, in most cases.

2. GA EPD and the GA EPD Contractor will select and implement one or more best management practice (BMP) demonstration projects for each River Basin. The purpose of the demonstration projects will be to evaluate by River Basin and pollutant parameter the site-specific effectiveness of one or more of the BMPs chosen. GA EPD intends that the BMP demonstration project be completed before the Revised TMDL Implementation Plan is issued. The BMP demonstration project will address the major category of contribution of the pollutant(s) of concern for the respective River Basin as identified in the TMDLs of the watersheds in the River Basin. The demonstration project need not be of a large scale, and may consist of one or more measures from the Table or equivalent BMP measures proposed by the GA EPD Contractor and approved by GA EPD. Other such measures may include those found in EPA's "Best Management Practices Handbook", the "NRCS National Handbook of Conservation Practices," or any similar reference, or measures that the volunteers, etc., devise that GA EPD approves. If for any reason the GA EPD Contractor does not complete the BMP demonstration project, GA EPD will take responsibility for doing so.

3. As part of the Initial TMDL Implementation Plan, the GA EPD brochure entitled "Watershed Wisdom -- Georgia's TMDL Program" will be distributed by GA EPD to the GA EPD Contractor for use with appropriate stakeholders for this TMDL, and a copy of the video of that same title will be provided to the GA EPD Contractor for its use in making presentations to appropriate stakeholders on TMDL implementation plan development.

4. If for any reason an GA EPD Contractor does not complete one or more elements of a Revised TMDL Implementation Plan, GA EPD will be responsible for getting that (those) element(s) completed, either directly or through another contractor.

5. The deadline for development of a Revised TMDL Implementation Plan is the end of September 2009.

6. The GA EPD Contractor helping to develop the Revised TMDL Implementation Plan, in coordination with GA EPD, will work on the following tasks involved in converting the Initial TMDL Implementation Plan to a Revised TMDL Implementation Plan:

   A. Generally characterize the watershed;
   B. Identify stakeholders;
   C. Verify the present problem to the extent feasible and appropriate, (e.g., local monitoring);
   D. Identify probable sources of pollutant(s);
   E. For the purpose of assisting in the implementation of the load allocations of this TMDL, identify potential regulatory or voluntary actions to control pollutant(s) from the relevant nonpoint sources;
   F. Determine measurable milestones of progress;
   G. Develop a monitoring plan, taking into account available resources, to measure effectiveness; and
   H. Complete and submit to GA EPD the Revised TMDL Implementation Plan.

7. The public will be provided an opportunity to participate in the development of the Revised TMDL Implementation Plan and to comment on it before it is finalized.

8. The Revised TMDL Implementation Plan will supersede this Initial TMDL Implementation Plan when the Revised TMDL Implementation Plan is approved by GA EPD.

Management Measure Selector Table

Land Use	Management Measures	Fecal Coliform	Dissolved Oxygen	pH	Sediment	Temperature	*Toxicity*	*Mercury*	Metals (copper, lead, zinc, cadmium)	PCBs, toxaphene
Agriculture	1. Sediment & Erosion Control	_	_		_	_				
	2. Confined Animal Facilities	_	_							
	3. Nutrient Management	_	_							
	4. Pesticide Management		_							
	5. Livestock Grazing	_	_		_	_				
	6. Irrigation		_		_	_				
Forestry	1. Preharvest Planning				_	_				
	2. Streamside Management Areas	_	_		_	_				
	3. Road Construction & Reconstruction		_		_	_				
	4. Road Management		_		_	_				
	5. Timber Harvesting		_		_	_				
	6. Site Preparation & Forest Regeneration		_		_	_				
	7. Fire Management	_	_	_	_	_				
	8. Revegetation of Disturbed Areas	_	_	_	_	_				
	9. Forest Chemical Management		_			_				
	10. Wetlands Forest Management	_	_	_		_		_		

Land Use	Management Measures	Fecal Coliform	Dissolved Oxygen	pH	Sediment	Temperature	*Toxicity*	*Mercury*	Metals (copper, lead, zinc, cadmium)	PCBs, toxaphene
Urban	1. New Development	_	_		_	_			_	
	2. Watershed Protection & Site Development	_	_		_	_		_	_	
	3. Construction Site Erosion and Sediment Control		_		_	_				
	4. Construction Site Chemical Control		_							
	5. Existing Developments	_	_		_	_			_	
	6. Residential and Commercial Pollution Prevention	_	_							
Onsite Wastewater	1. New Onsite Wastewater Disposal Systems	_	_							
	2. Operating Existing Onsite Wastewater Disposal Systems	_	_							
Roads, Highways and Bridges	1. Siting New Roads, Highways & Bridges	_	_		_	_			_	
	2. Construction Projects for Roads, Highways and Bridges		_		_	_				
	3. Construction Site Chemical Control for Roads, Highways and Bridges		_							
	4. Operation and Maintenance-Roads, Highways and Bridges	_	_			_			_	

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APPENDIX A

Annual Average Sediment Load Summary Memorandum

SUMMARY MEMORANDUM
Annual Average Sediment Load
Barbershela Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Barbershela Creek
Location: Headwaters to Snapfinger Creek
Stream Length: 6 miles
Watershed Area: 6.42 square miles
Tributary to: Snapfinger Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 180.0 tons/yr

Load Allocation (LA) : 77.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 257.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Bay Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Peach/Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Bay Creek
Location: Headwaters to Beaver Creek
Stream Length: 9 miles
Watershed Area: 2.05 square miles
Tributary to: Big Indian Creek

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

Analysis/Modeling:
Universal Soil Loss Equation was used to determine the average annual sediment load

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**100.5 tons/yr**
Fort Valley WPCP (GA0031046)	**30 mg/L (100.5 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**

Load Allocation (LA): 89.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 190.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Big Grocery Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Big Grocery Creek
Location: Headwaters to Ocmulgee River
Stream Length: 4 miles
Watershed Area: 6.12 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 155.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 155.2 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Big Horse Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Telfair

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Big Horse Creek
Location: Alligator Creek to Ocmulgee River
Stream Length: 15 miles
Watershed Area: 112.94 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 10,482.1 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 10,482.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Big Indian Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Big Indian Creek
Location: Flat Creek to Mossy Creek
Stream Length: 5 miles
Watershed Area: 142.0 square miles
Tributary to: Commissioner Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

Analysis/Modeling:

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

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA): 137.0 tons/yr
- Perry WPCP (GA0021334): 30 mg/L (137.0 tons/yr)
- Future Construction Sites: Meet requirements of General Storm Water Permit

Load Allocation (LA): 13,042.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 13,179.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Big Sandy Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Butts

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Big Sandy Creek
Location: Upstream Indian Springs
Stream Length: 8 miles
Watershed Area: 4.96 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 155.4 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 155.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Bluff Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Pulaski

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Bluff Creek
Location: Ten Mile Creek to Ocmulgee River
Stream Length: 4 miles
Watershed Area: 142.0 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 5,918.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 5,918.9 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Brown Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Henry

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Brown Branch
Location: Headwaters (Locust Grove) to Wolf Creek
Stream Length: 5 miles
Watershed Area: 4.72 square miles
Tributary to: Wolf Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 189.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 189.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Butlers Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Butlers Creek
Location: Tributary to Ocmulgee River
Stream Length: 5 miles
Watershed Area: 4.67 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 59.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 59.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Cabin Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Spalding

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Cabin Creek
Location: Headwaters, Griffin to Towaliga River
Stream Length: 16 miles
Watershed Area: 11.98 square miles
Tributary to: Towaliga River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

Analysis/Modeling:
Universal Soil Loss Equation was used to determine the average annual sediment load

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**257.2 tons/yr**
Griffin – Cabin Creek WPCP (GA0020214)	**30 mg/L (68.5 tons/yr)**
Spring Industries, Inc. (GA0003409)	**470 kg/day (188.7 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**
Load Allocation (LA):	**223.1 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**480.3 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Calaparchee Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe/Bibb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Calaparchee Creek
Location: Upstream Lake Wildwood
Stream Length: 13 miles
Watershed Area: 3.83 square miles
Tributary to: Rocky Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 153.5 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 153.5 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Carr Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Rockdale

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Carr Branch
Location: Headwaters to Yellow River
Stream Length: 3 miles
Watershed Area: 2.56 square miles
Tributary to: Yellow River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 10.2 tons/yr

Load Allocation (LA): 47.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 58.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Cedar Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Wilcox

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Cedar Creek
Location: Headwaters to Brushy Creek
Stream Length: 7 miles
Watershed Area: 11.75 square miles
Tributary to: Brushy Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 1,090.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 1,090.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Cobbs Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Cobbs Creek
Location: Headwaters to Shoal Creek
Stream Length: 7 miles
Watershed Area: 2.95 square miles
Tributary to: Shoal Creek

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 82.8 tons/yr

Load Allocation (LA): 35.5 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 118.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Cole Creek

1. 303(d) Listed Waterbody Information

State:	**Georgia**
County:	**Lamar/Monroe**
Major River Basin:	**Upper Ocmulgee**
8-Digit Hydrologic Unit Code(s):	**03070103**
Waterbody Name:	**Cole Creek**
Location:	**Tributary to Tobesofkee Creek**
Stream Length:	**6 miles**
Watershed Area:	**1.40 square miles**
Tributary to:	**Tobesofkee Creek**
Constituent(s) of Concern:	**Sediment**
Designated Use:	**Fishing (partially 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.

2. TMDL Development
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**
Load Allocation (LA):	**56.3 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**56.3 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Crooked Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Dodge

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Crooked Creek
Location: Cypress Lake to Ocmulgee River
Stream Length: 4 miles
Watershed Area: 38.32 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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**

Load Allocation (LA): 3,556.5 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 3,556.5 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Deep Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Crawford

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Deep Creek
Location: Headwaters to Echeconnee Creek
Stream Length: 7 miles
Watershed Area: 15.02 square miles
Tributary to: Echeconnee Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 1,274.5 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 1,274.5 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Doolittle Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Doolittle Creek
Location: Headwaters to South River
Stream Length: 5 miles
Watershed Area: 6.82 square miles
Tributary to: South River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 191.4 tons/yr

Load Allocation (LA): 82.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 273.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Dried Indian Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Newton

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Dried Indian Creek
Location: Headwaters to Yellow Creek
Stream Length: 10 miles
Watershed Area: 6.18 square miles
Tributary to: Yellow Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 126.5 tons/yr

Load Allocation (LA): 121.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 247.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Eightmile Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Eightmile Creek
Location: Tributary to Towaliga River
Stream Length: 5 miles
Watershed Area: 0.87 square miles
Tributary to: Towaliga River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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**

Load Allocation (LA): 34.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 34.9 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Flat Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Flat Creek
Location: ~0.4 mi U/S of U.S. Hwy. 41 to Big Indian Creek
Stream Length: 5 miles
Watershed Area: 24.77 square miles
Tributary to: Big Indian Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 2,299.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 2,299.2 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Folsom Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Wilcox

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Folsom Creek
Location: ~0.2 mi D/S CR 33 to Ocmulgee River
Stream Length: 9 miles
Watershed Area: 18.72 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 1,737.1 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 1,737.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Garner Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Gwinnett

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Garner Creek
Location: Headwaters to Yellow River
Stream Length: 4 miles
Watershed Area: 5.08 square miles
Tributary to: Yellow River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 142.5 tons/yr

Load Allocation (LA): 61.1 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 203.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Gladesville Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Gladesville Creek
Location: Headwaters to Little Falling Creek
Stream Length: 9 miles
Watershed Area: 5.56 square miles
Tributary to: Falling Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 181.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 181.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Gum Swamp Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Bleckley/Dodge

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Gum Swamp Creek
Location: Reedy Creek to Ga. Hwy. 257
Stream Length: 12 miles
Watershed Area: 52.88 square miles
Tributary to: Little Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 4,908.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 4,908.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Hansford Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Hansford Branch
Location: Monroe County
Stream Length: 2 miles
Watershed Area: 0.89 square miles
Tributary to: Towaliga Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 26.1 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 26.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Harmon Pye Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Harmon Pye Branch
Location: Tributary to Wise Creek
Stream Length: 1 mile
Watershed Area: 2.68 square miles
Tributary to: Little Falling Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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**

Load Allocation (LA): 88.4 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 88.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Hartley Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Crawford

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Hartley Branch
Location: Tributary to Deep Creek
Stream Length: 1 mile
Watershed Area: 3.93 square miles
Tributary to: Deep Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 364.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 364.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Herds Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Herds Creek
Location: D/S Ga. Hwy. 212 to Ocmulgee River
Stream Length: 6 miles
Watershed Area: 13.83 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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**

Load Allocation (LA): **487.8 tons/yr**

Margin of Safety (MOS): **implicit**

Annual Average Sediment Load: **487.8 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Horse Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Dodge/Telfair

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Horse Creek
Location: Headwaters to Alligator Creek
Stream Length: 17 miles
Watershed Area: 32.17 square miles
Tributary to: Big Horse Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 2,986.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 2,986.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
House Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Wilcox

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: House Creek
Location: Headwaters to Haw Pond Creek
Stream Length: 7 miles
Watershed Area: 3.73 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 345.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 345.9 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Intrenchment Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Fulton/DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Intrenchment Creek
Location: Headwaters to South River
Stream Length: 6 miles
Watershed Area: 9.91 square miles
Tributary to: South River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 231.6 tons/yr

Load Allocation (LA): 99.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 330.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Island Shoal Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Henry

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Island Shoal Creek
Location: Headwaters to Mackey Creek
Stream Length: 5 miles
Watershed Area: 4.0 square miles
Tributary to: South River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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**

Load Allocation (LA): 160.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 160.2 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Limestone Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Limestone Creek
Location: Okeetuck Creek to Big Indian Creek
Stream Length: 3 miles
Watershed Area: 17.39 square miles
Tributary to: Big Indian Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 1,613.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 1,613.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Little Chehaw Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Little Chehaw Creek
Location: Headwaters to Chehaw Creek
Stream Length: 3 miles
Watershed Area: 2.97 square miles
Tributary to: Walnut Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 105.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 105.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Little Deer Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Little Deer Creek
Location: Headwaters to Deer Creek
Stream Length: 6 miles
Watershed Area: 7.42 square miles
Tributary to: Deer River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

Analysis/Modeling:
Universal Soil Loss Equation was used to determine the average annual sediment load

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**162.7 tons/yr**
Hanson Aggregates (GA0046558), outfall 001	**25 - 55 mg/L (24.7– 54.2 tons/yr)**
Hanson Aggregates (GA0046558), outfall 002	**25 - 55 mg/L (49.3 – 108.5 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**

Load Allocation (LA): 134.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 297.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Little Deer Creek Tributary

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Little Deer Creek Tributary
Location: Headwaters to Little Deer Creek
Stream Length: 1 mile
Watershed Area: 1.09 square miles
Tributary to: Deer Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 43.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 43.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Little Suwannee Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Gwinnett

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Little Suwannee Creek
Location: Lake Perrin to Yellow River
Stream Length: 3 miles
Watershed Area: 9.18 square miles
Tributary to: Yellow River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 257.7 tons/yr

Load Allocation (LA): 110.4 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 368.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Long Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Long Branch
Location: Tributary to Ocmulgee River
Stream Length: 3 miles
Watershed Area: 2.52 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 101.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 101.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Malholms Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Butts

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Malholms Creek
Location: Headwaters (Jenkinsburg) to Tussahaw Creek
Stream Length: 6 miles
Watershed Area: 2.17 square miles
Tributary to: Tussahaw Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 16.4 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 16.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Mill Dam Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Mill Dam Creek
Location: Monroe County
Stream Length: 4 miles
Watershed Area: 2.0 square miles
Tributary to: Towaliga Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 80.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 80.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Mossy Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Peach/Houston

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Mossy Creek
Location: Mule Creek to Lake Joy
Stream Length: 8 miles
Watershed Area: 82.53 square miles
Tributary to: Big Indian Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 53.6 tons/yr

Load Allocation (LA): 7,606.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 7,659.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Mountain Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Walton

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Mountain Creek
Location: Headwaters to Sewage Treatment Pond #2 (S. of Monroe)
Stream Length: 5 miles
Watershed Area: 4.47 square miles
Tributary to: Alcovy River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 179.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 179.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Otter Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Otter Creek
Location: ~1.7 mi U/S Ga. 182 (Old River Rd.) to Ocmulgee River
Stream Length: 4 miles
Watershed Area: 31.69 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 2,941.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 2,941.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Phinazee Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Lamar/Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Phinazee Creek
Location: Lamar/Monroe Counties
Stream Length: 6 miles
Watershed Area: 2.79 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 111.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 111.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Red Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Red Creek
Location: Tributary to Rocky Creek
Stream Length: 3 miles
Watershed Area: 12.03 square miles
Tributary to: Rocky Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 482.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 482.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rock Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Rock Creek
Location: Upstream Lite-N-Tie Rd.
Stream Length: 1 mile
Watershed Area: 1.32 square miles
Tributary to: Walnut Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

Analysis/Modeling:
Universal Soil Loss Equation was used to determine the average annual sediment load

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA): 43.8 tons/yr
Rinker Materials (GA0036781) 25 – 40 mg/L (27.4 – 43.8 tons/yr)
Future Construction Sites Meet requirements of General Storm Water Permit

Load Allocation (LA): 9.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 53.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rocky Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Bibb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Rocky Creek
Location: Upstream Lake Wildwood
Stream Length: 7 miles
Watershed Area: 5.84 square miles
Tributary to: Tobesofkee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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): 77.1 tons/yr

Load Allocation (LA): 157.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 234.2 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rocky Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Butts

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Rocky Creek
Location: Upstream Big Sandy Creek
Stream Length: 6 miles
Watershed Area: 3.35 square miles
Tributary to: Big Sandy Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 134.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 134.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rocky Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Rocky Creek
Location: Jasper County
Stream Length: 5 miles
Watershed Area: 1.54 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 12.1 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 12.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rocky Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Rocky Creek
Location: D/S Old English Rd. (CR 152) to Towaliga River
Stream Length: 4 miles
Watershed Area: 6.35 square miles
Tributary to: Towaliga River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 254.6 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 254.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Rum Creek

1. 303(d) Listed Waterbody Information

State:	**Georgia**
County:	**Monroe**
Major River Basin:	**Upper Ocmulgee**
8-Digit Hydrologic Unit Code(s):	**03070103**
Waterbody Name:	**Rum Creek**
Location:	**Rum and Town Creeks, U/S Lake Juliette**
Stream Length:	**6 miles**
Watershed Area:	**10.90 square miles**
Tributary to:	**Ocmulgee River**
Constituent(s) of Concern:	**Sediment**
Designated Use:	**Fishing (partially 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.

2. TMDL Development

Analysis/Modeling:

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

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**63.9 tons/yr**
Forsyth – Northeast WPCP (GA0031801)	**30 mg/L (63.9 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**
Load Allocation (LA):	**372.9 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**436.8 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Sand Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Sand Branch
Location: Tributary to Towaliga River
Stream Length: 2 miles
Watershed Area: 1.12 square miles
Tributary to: Towaliga River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 44.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 44.9 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Scoggins Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Scoggins Creek
Location: Tributary to Ocmulgee River
Stream Length: 2 miles
Watershed Area: 3.31 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 132.7 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 132.7 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Shoal Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Shoal Creek
Location: Headwaters to South River
Stream Length: 7 miles
Watershed Area: 4.09 square miles
Tributary to: South River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 114.9 tons/yr

Load Allocation (LA): 49.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 164.1 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Snapping Shoals Creek

1. 303(d) Listed Waterbody Information

State:	**Georgia**
County:	**Rockdale/Newton**
Major River Basin:	**Upper Ocmulgee**
8-Digit Hydrologic Unit Code(s):	**03070103**
Waterbody Name:	**Snapping Shoals Creek**
Location:	**Almand Branch to South River**
Stream Length:	**10 miles**
Watershed Area:	**16.77 square miles**
Tributary to:	**South River**
Constituent(s) of Concern:	**Sediment**
Designated Use:	**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.

2. TMDL Development

Analysis/Modeling:

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

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**56.5 tons/yr**
Rockdale Co. – Almand Branch WPCP (GA0021610)	**20 mg/L (38.1 tons/yr)**
Vulcan Constructions Materials (GA0023736)	**25 – 55 mg/L (8.4 – 18.4 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**
Wasteload Allocations (WLAsw):	**418.0 tons/yr**
Load Allocation (LA):	**197.6 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**672.1 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
South River

1. 303(d) Listed Waterbody Information

State: Georgia
County: Fulton/DeKalb

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: South River
Location: Atlanta to Flakes Mill Road
Stream Length: 16 miles
Watershed Area: 56.0 square miles
Tributary to: Jackson Lake/Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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): 1,571.4 tons/yr

Load Allocation (LA): 673.5 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 2,244.8 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Sturgeon Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Ben Hill

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Sturgeon Creek
Location: Dickson Mill Creek to Ocmulgee River
Stream Length: 6 miles
Watershed Area: 49.94 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 4,634.9 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 4,634.9 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Ten Mile Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Pulaski

Major River Basin: Lower Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070104

Waterbody Name: Ten Mile Creek
Location: ~0.7 mi U/S Ga. Hwy. 257 to Bluff Creek
Stream Length: 7 miles
Watershed Area: 37.11 square miles
Tributary to: Bluff Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 3,444.6 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 3,444.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Third Branch

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Third Branch
Location: Tributary to Ocmulgee River
Stream Length: 3 miles
Watershed Area: 2.52 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 101.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 101.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Tobesofkee Creek

1. 303(d) Listed Waterbody Information

State:	**Georgia**
County:	**Lamar/Monroe**
Major River Basin:	**Upper Ocmulgee**
8-Digit Hydrologic Unit Code(s):	**03070103**
Waterbody Name:	**Tobesofkee Creek**
Location:	**Barnesville to Cole Creek**
Stream Length:	**8 miles**
Watershed Area:	**26.80 square miles**
Tributary to:	**Tobesofkee River**
Constituent(s) of Concern:	**Sediment**
Designated Use:	**Fishing (partially 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.

2. TMDL Development

Analysis/Modeling:

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

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**54.8 tons/yr**
Barnesville – Gordon Rd. WPCP (GA0021041)	**30 mg/L (54.8 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**
Load Allocation (LA):	**292.9 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**347.7 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Tobler Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Tobler Creek
Location: Tributary to Ocmulgee River
Stream Length: 6 miles
Watershed Area: 9.21 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 369.2 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 369.2 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Town Branch

1. 303(d) Listed Waterbody Information

State:	**Georgia**
County:	**Butts**
Major River Basin:	**Upper Ocmulgee**
8-Digit Hydrologic Unit Code(s):	**03070103**
Waterbody Name:	**Town Branch**
Location:	**Headwaters (Jackson) to Aboothlacoosta Creek**
Stream Length:	**3 miles**
Watershed Area:	**1.52 square miles**
Tributary to:	**Rum Creek**
Constituent(s) of Concern:	**Sediment**
Designated Use:	**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.

2. TMDL Development

Analysis/Modeling:

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

3. Allocation Watershed/Stream Reach:

Wasteload Allocations (WLA):	**21.3 tons/yr**
Jackson – Southside WPCP (GA0023931)	**20 mg/L (21.3 tons/yr)**
Future Construction Sites	**Meet requirements of General Storm Water Permit**
Load Allocation (LA):	**39.6 tons/yr**
Margin of Safety (MOS):	**implicit**
Annual Average Sediment Load:	**60.9 tons/yr**

SUMMARY MEMORANDUM
Annual Average Sediment Load
Tributary to Little Haynes Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Walton

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Tributary to Little Haynes Creek
Location: Headwaters to Little Haynes Creek
Stream Length: 2 miles
Watershed Area: 2.19 square miles
Tributary to: Little Haynes Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 87.6 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 87.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Tributary to Tobesofkee Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Lamar

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Tributary to Tobesofkee Creek
Location: Barnesville
Stream Length: 2 miles
Watershed Area: 0.94 square miles
Tributary to: Tobesofkee Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 37.6 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 37.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Walnut Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Crawford

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Walnut Creek
Location: Downstream Hwy. 42
Stream Length: 4 miles
Watershed Area: 12.68 square miles
Tributary to: Echeconnee Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 369.4 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 369.4 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Walnut Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jones

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Walnut Creek
Location: Headwaters to Ocmulgee River
Stream Length: 20 miles
Watershed Area: 26.63 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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

Load Allocation (LA): 1,067.3 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 1,067.3 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
White Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Lamar/Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: White Creek
Location: Lamar/Monroe Counties
Stream Length: 4 miles
Watershed Area: 2.69 square miles
Tributary to: Towaliga Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 108.0 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 108.0 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Wise Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Jasper

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Wise Creek
Location: Headwaters to Ocmulgee River
Stream Length: 6 miles
Watershed Area: 11.03 square miles
Tributary to: Ocmulgee River

Constituent(s) of Concern: Sediment

Designated Use: 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.

2. TMDL Development

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

Load Allocation (LA): 339.6 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 339.6 tons/yr

SUMMARY MEMORANDUM
Annual Average Sediment Load
Wood Creek

1. 303(d) Listed Waterbody Information

State: Georgia
County: Lamar/Monroe

Major River Basin: Upper Ocmulgee
8-Digit Hydrologic Unit Code(s): 03070103

Waterbody Name: Wood Creek
Location: Headwaters to D/S Ga. Hwy. 83
Stream Length: 3 miles
Watershed Area: 1.57 square miles
Tributary to: Echeconnee Creek

Constituent(s) of Concern: Sediment

Designated Use: Fishing (partially 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.

2. TMDL Development

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

Load Allocation (LA): 62.8 tons/yr

Margin of Safety (MOS): implicit

Annual Average Sediment Load: 62.8 tons/yr