Total Maximum Daily Load

Evaluation

for

Twenty-Two Stream Segments

in the

Oconee River Basin

for

Bacteria

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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TMDL Action ID: GAR4_22_03_05 **Approved by EPA: 05/12/2023**

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EXECUTIVE SUMMARY

The State of Georgia Environmental Protection Division (GA EPD) assesses its waterbodies for compliance with water quality standards criteria established for their designated uses as required by the Federal Clean Water Act (CWA). Assessed waterbodies are placed into one of three categories, supporting designated use, not supporting designated use, or assessment pending, depending on water quality assessment results. These waterbodies are found on Georgia's 2022 305(b) list as required by that section of the CWA that defines the assessment process and are published in *Water Quality in Georgia 2020-2021* (GA EPD, 2022). This document is available on the Georgia Environmental Protection Division (GA EPD) website.

The subset of the waterbodies that do not meet designated uses on the 305(b) list are also assigned to Georgia's 303(d) list, named after that section of the CWA. Although the 305(b) and 303(d) lists are two distinct requirements under the CWA, Georgia reports both lists in one combined format called the Integrated 305(b)/303(d) List, which is found in Appendix A of *Water Quality in Georgia 2020-2021* (GA EPD, 2022). Waterbodies on the 303(d) list are denoted as Category 5, and are required to have a Total Maximum Daily Load (TMDL) evaluation for the water quality constituent(s) in violation of the water quality standard(s).

The TMDL formulations in this document are based on impaired segments contained in the 2022 305(b)/303(d) List. The TMDL process establishes the allowable pollutant loadings or other quantifiable parameters for a waterbody based on the relationship between pollutant sources and instream water quality conditions. This allows water quality-based controls to be developed to reduce pollution and restore and maintain water quality.

Every waterbody in the State has one or more designated uses, and each designated use has water quality criteria established to protect it. Waterbodies in Georgia are assessed based on the 305(b/303(d) Listing Assessment Methodology included in Appendix A of *Water Quality in Georgia 2020-2021*, as such GA EPD has placed fifteen (15) stream segments in the Oconee River Basin on the 303(d) list of impaired waters because it was assessed as "not supporting" its designated use of "Fishing" due to violation of the fecal coliform water quality criteria. The EPA approved water quality criteria in place when the 2022 Integrated 305(b)/303(d) List was developed and approved are as follows:

> For the months of May through October, when water contact recreation activities are expected to occur, fecal coliform not to exceed a geometric mean of 200 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200 counts per 100 mL (geometric mean) occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 counts per 100 mL in lakes and reservoirs and 500 counts per 100 mL in free flowing freshwater streams. For the months of November through April, fecal coliform not to exceed a geometric mean of 1,000 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and not to exceed a maximum of 4,000 counts per 100 mL for any sample. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

A waterbody is assessed as "not supporting" its use if more than ten percent of the geometric means are greater than their seasonal waterbody specific criteria or if more than ten percent of the samples exceed the single sample criteria.

In January 2022, the Georgia DNR Board adopted new bacteria criteria for “Fishing” and “Drinking Water” designated uses using the bacterial indicators *E. coli* and enterococci. These bacteria are better indicators for human health illnesses. The adopted criteria have the same estimated illness rate (8 per 1000 swimmers) as the previously established fecal coliform criteria. EPA approved the proposed criteria on August 31, 2022. Since this TMDL was written after EPA approved the new bacteria criteria, the TMDL will use both bacterial indicators. The current *E. coli* load cannot be determined, but the TMDL will use a 0.63 conversion factor to convert from fecal coliform standards to *E. coli* standards, based on the 30-day geometric mean water quality standard. The current water quality criteria approved August 31, 2022, are as follows:

> For the months of May through October, when primary water contact recreation activities are expected to occur, culturable *E. coli* not to exceed a geometric mean of 126 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an *E. coli* statistical threshold value (STV) of 410 counts per 100 mL in the same 30-day interval. For the months of November through April, culturable *E. coli* not to exceed a geometric mean of 265 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an *E. coli* statistical threshold value (STV) of 861 counts per 100 mL in the same 30-day interval.

A waterbody is assessed as “not supporting” its use if more than ten percent of the geometric means are greater than their seasonal criteria or if more than ten percent of the samples exceeded the STV water quality criteria cited above. An important part of the TMDL analysis is the identification of potential source categories. Sources are broadly classified as either point or nonpoint sources. A point source is defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. Nonpoint sources are diffuse, and generally, but not always, involve accumulated fecal coliform bacteria that wash off land surfaces following storm events.

The process of developing fecal coliform bacteria TMDLs for listed segments in the Oconee River Basin involved the determination of the following:

- The current critical bacterial load to the stream under existing conditions;
- The TMDL for similar conditions under which the current critical load was determined; and
- The percent reduction in the current critical bacterial load necessary to achieve the TMDL.

The calculation of the bacterial load at any point in a stream requires the bacterial concentration and stream flow. The availability of water quality and flow data varies considerably among the listed segments. The Loading Curve Approach was used to determine the current fecal coliform load and TMDL. The bacterial loads and required reductions for each of the listed segments are summarized in Table 1 below.

Point and nonpoint source management practices should be used to help reduce bacteria source loads. The amount of bacteria delivered to a stream is difficult to determine. However, the use of management practices should improve stream water quality, and future monitoring will provide a measurement of TMDL implementation.

Table 1: Bacterial Loads and Required Bacterial Load Reductions

Assessment Unit ID	Stream Segment	Description	Bacterial Indicator	Current Load (counts/ 30 days)	TMDL Components					Reduction Required
					WLA (counts/ 30 days)[1]	WLAsw (counts/ 30 days)	LA (counts/ 30 days)	MOS (counts/ 30 days)	TMDL (counts/ 30 days)	
GAR030701010317	Calls Creek	Headwaters to Lampkin Branch	Fecal coliform	4.25E+10	--	2.88E+09	1.65E+10	2.16E+09	2.16E+10	49.3%
			E. coli	[2]	--	1.81E+09	1.04E+10	1.36E+09	1.36E+10	Undetermined [3]
GAR030701011210	Kimbro Creek	Headwaters to Hightower Creek	Fecal coliform	1.54E+11	--	--	4.09E+10	4.54E+09	4.54E+10	70.6%
			E. coli	[2]	--	--	2.57E+10	2.86E+09	2.86E+10	Undetermined [3]
GAR030701010318	Little Bear Creek	Headwaters to Bear Creek	Fecal coliform	1.07E+11	--	1.14E+09	1.90E+10	2.24E+09	2.24E+10	79.0%
			E. coli	[2]	--	7.17E+08	1.20E+10	1.41E+09	1.41E+10	Undetermined [3]
GAR030701010911	Little Sandy Creek	Ivy Branch to Turkey Creek	Fecal coliform	5.58E+10	--	--	8.19E+08	9.10E+07	9.10E+08	98.4%
			E. coli	[2]	--	--	5.16E+08	5.73E+07	5.73E+08	Undetermined [3]
GAR030701021201	Oconee River	Turkey Creek to Red Bluff Creek	Fecal coliform	2.12E+14	8.33E+10	--	1.43E+13	1.60E+12	1.60E+13	92.5%
			E. coli	[2]	5.25E+10	--	9.00E+12	1.01E+12	1.01E+13	Undetermined [3]
GAR030701011617	Pearson Creek	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	Fecal coliform	6.29E+11	1.99E+09	--	2.32E+10	2.80E+09	2.80E+10	95.5%
			E. coli	[2]	1.25E+09	--	1.46E+10	1.77E+09	1.77E+10	Undetermined [3]
GAR030701011619	Pearson Creek	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	Fecal coliform	2.00E+10	1.99E+09	--	1.26E+10	1.62E+09	1.62E+10	18.6%
			E. coli	[2]	1.25E+09	--	7.96E+09	1.02E+09	1.02E+10	Undetermined [3]
GAR030701010603	Rose Creek	Headwaters to the Oconee River	Fecal coliform	4.69E+11	--	--	1.38E+11	1.53E+10	1.53E+11	67.3%
			E. coli	[2]	--	--	8.69E+10	9.66E+09	9.66E+10	Undetermined [3]
GAR030701020803	Rum Creek	Hobbs Lake to the Oconee River	Fecal coliform	1.32E+10	--	--	9.93E+09	1.10E+09	1.10E+10	16.7%
			E. coli	[2]	--	--	6.25E+09	6.95E+08	6.95E+09	Undetermined [3]
GAR030701021405	Tributary to Limestone Creek	Headwaters to Limestone Creek	Fecal coliform	2.03E+10	--	--	2.94E+09	3.27E+08	3.27E+09	83.9%
			E. coli	[2]	--	--	1.85E+09	2.06E+08	2.06E+09	Undetermined [3]
GAR030701011615	Tributary to Pittman Branch	Headwaters to Pittman Branch	Fecal coliform	1.04E+11	7.03E+08	--	2.84E+09	3.94E+08	3.94E+09	96.2%
			E. coli	[2]	4.43E+08	--	1.79E+09	2.48E+08	2.48E+09	Undetermined [3]
GAR030701011620	Tributary to White Oak Creek	Monticello White Oak WPCP to White Oak Creek	Fecal coliform	1.59E+10	1.35E+09	--	1.38E+09	3.03E+08	3.03E+09	81.0%
			E. coli	[2]	8.49E+08	--	8.70E+08	1.91E+08	1.91E+09	Undetermined [3]

Assessment Unit ID	Stream Segment	Description	Bacterial Indicator	Current Load (counts/ 30 days)	TMDL Components					Reduction Required
					WLA (counts/ 30 days)(1)	WLAsw (counts/ 30 days)	LA (counts/ 30 days)	MOS (counts/ 30 days)	TMDL (counts/ 30 days)	
GAR030701011621	Tributary to White Oak Creek	Headwaters to Monticello White Oak WPCP	Fecal coliform	2.27E+10	1.35E+09	--	1.95E+09	3.66E+08	3.66E+09	83.9%
			E. coli	(2)	8.49E+08	--	1.23E+09	2.31E+08	2.31E+09	Undetermined (3)
GAR030701011812	Turkey Creek	Headwaters to Rooty Creek	Fecal coliform	1.86E+12	--	--	1.25E+11	1.39E+10	1.39E+11	92.5%
			E. coli	(2)	--	--	7.87E+10	8.75E+09	8.75E+10	Undetermined (3)
GAR030701011209	Whitten Creek	Hancock County	Fecal coliform	1.50E+13	--	--	7.75E+11	8.61E+10	8.61E+11	94.2%
			E. coli	(2)	--	--	4.88E+11	5.43E+10	5.43E+11	Undetermined (3)
Revised TMDLs										
GAR030701010301	Anne Court Branch	Headwaters to Middle Oconee River, Athens	Fecal coliform	(4)	--	2.56E+09	2.02E+09	5.10E+08	5.10E+09	Undetermined (3)
			E. coli	(4)	--	1.61E+09	1.27E+09	3.21E+08	3.21E+09	Undetermined (3)
GAR030701010704	Greenbrier Creek	Salem Scull Shoals Road to Lake Oconee	Fecal coliform	(4)	--	9.38E+07	1.81E+11	2.01E+10	2.01E+11	Undetermined (3)
			E. coli	(4)	--	5.91E+07	1.14E+11	1.27E+10	1.27E+11	Undetermined (3)
GAR030701020206	Town Creek	Peavy Branch to Oconee River	Fecal coliform	(4)	--	--	3.43E+11	3.82E+10	3.82E+11	Undetermined (3)
			E. coli	(4)	--	--	2.16E+11	2.40E+10	2.40E+11	Undetermined (3)
GAR030701010108	Tributary 2 to Allen Creek	Gainesville - Downstream Old Landfill	Fecal coliform	(4)	--	2.02E+08	7.23E+09	8.25E+08	8.25E+09	Undetermined (3)
			E. coli	(4)	--	1.27E+08	4.55E+09	5.20E+08	5.20E+09	Undetermined (3)
GAR030701010115	Tributary 5 to Allen Creek	Gainesville	Fecal coliform	(4)	--	1.26E+09	3.50E+09	5.28E+08	5.28E+09	Undetermined (3)
			E. coli	(4)	--	7.93E+08	2.20E+09	3.33E+08	3.33E+09	Undetermined (3)
GAR030701010101	Tributary 7 to Allen Creek	Gainesville	Fecal coliform	(4)	--	--	4.20E+09	4.67E+08	4.67E+09	Undetermined (3)
			E. coli	(4)	--	--	2.65E+09	2.94E+08	2.94E+09	Undetermined (3)
GAR030701010102	Tributary 8 to Allen Creek	Gainesville	Fecal coliform	(4)	--	1.99E+08	1.11E+10	1.26E+09	1.26E+10	Undetermined (3)
			E. coli	(4)	--	1.26E+08	7.00E+09	7.92E+08	7.92E+09	Undetermined (3)

Notes:

(1) The assigned bacterial load from the NPDES permitted facility for WLA was determined as the product of the permitted flow and bacteria permit limit.
(2) Sample was not analyzed for *E. coli*, therefore critical load calculation not possible.
(3) Percent reduction could not be determined due to absence of current load calculation.
(4) Critical loading could not be determined due to no samples collected.

1.0 INTRODUCTION

1.1 Background

The State of Georgia assesses its waterbodies for compliance with water quality criteria established for their designated uses as required by the CWA. Assessed waterbodies are placed into one of three categories, supporting designated use, not supporting designated use, or assessment pending, depending on water quality assessment results. These waterbodies are found on Georgia's 2022 305(b) list as required by that section of the CWA that defines the assessment process and are published in *Water Quality in Georgia 2020-2021* (GA EPD, 2022). This document is available on the GA EPD website.

The subset of the waterbodies that do not meet designated uses on the 305(b) list are also assigned to Georgia's 303(d) list, named after that section of the CWA. Although the 305(b) and 303(d) lists are two distinct requirements under the CWA, Georgia reports both lists in one combined format called the Integrated 305(b)/303(d) List, which is found in Appendix A of *Water Quality in Georgia 2020-2021* (GA EPD, 2022). Waterbodies on the 303(d) list are denoted as Category 5, and 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 formulations in this document are based on impaired segments contained in the 2022 305(b)/303(d) List. The TMDL process establishes the allowable pollutant loadings or other quantifiable parameters for a waterbody based on the relationship between pollutant sources and instream water quality conditions. This allows water quality-based controls to be developed to reduce pollution and restore and maintain water quality.

The 303(d) list identifies the stream segments that are not supporting its designated use classification due to exceedances of water quality standards for bacteria. Fecal coliform, *E. coli,* and enterococci bacteria are used as indicators of the potential presence of pathogens in a stream. Table 2 presents the fifteen (15) stream segments in the Oconee River Basin included on the 2022 303(d) list for exceedances of the fecal coliform water quality criteria. Table 3 lists the seven (7) stream segments in the Oconee River Basin where the previously approved TMDLs are being revised.

Table 2: Stream Segments Listed on the 2022 303(d) List for Bacteria in the Oconee River Basin

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use
Calls Creek	Headwaters to Lampkin Branch	GAR030701010317	2.7	Fishing
Kimbro Creek	Headwaters to Hightower Creek	GAR030701011210	5.3	Fishing
Little Bear Creek	Headwaters to Bear Creek	GAR030701010318	6.3	Fishing
Little Sandy Creek	Ivy Branch to Turkey Creek	GAR030701010911	2	Fishing

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use
Oconee River	Turkey Creek to Red Bluff Creek	GAR030701021201	25.2	Fishing
Pearson Creek	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	GAR030701011617	1.8	Fishing
Pearson Creek	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	GAR030701011619	4.5	Fishing
Rose Creek	Headwaters to the Oconee River	GAR030701010603	9	Fishing
Rum Creek	Hobbs Lake to the Oconee River	GAR030701020803	2.4	Fishing
Tributary to Limestone Creek	Headwaters to Limestone Creek	GAR030701021405	1	Fishing
Tributary to Pittman Branch	Headwaters to Pittman Branch	GAR030701011615	1	Fishing
Tributary to White Oak Creek	Monticello White Oak WPCP to White Oak Creek	GAR030701011620	0.3	Fishing
Tributary to White Oak Creek	Headwaters to Monticello White Oak WPCP	GAR030701011621	1.4	Fishing
Turkey Creek	Headwaters to Rooty Creek	GAR030701011812	4.5	Fishing
Whitten Creek	Hancock County	GAR030701011209	2	Fishing

Table 3: Stream Segments with Revised TMDLs for Bacteria in the Oconee River Basin

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use	Original TMDL Action ID Number, Agency, and Year
Anne Court Branch	Headwaters to Middle Oconee River	GAR030701010301	0.8	Fishing	# 15 US EPA 1998
Greenbrier Creek	Salem Scull Shoals Road to Lake Oconee	GAR030701010704	8	Fishing	# 502 US EPA 1998
Town Creek	Peavy Branch to Oconee River	GAR030701020206	16	Fishing	# 3763 GA EPD 2002
Tributary 2 to Allen Creek	Gainesville – Downstream Old Landfill	GAR030701010108	1	Fishing	# 3763 GA EPD 2002

Tributary 5 to Allen Creek	Gainesville	GAR030701010115	1	Fishing	# 3763 GA EPD 2002
Tributary 7 to Allen Creek	Gainesville	GAR030701010101	1	Fishing	# 3763 GA EPD 2002
Tributary 8 to Allen Creek	Gainesville	GAR030701010102	1	Fishing	# 3763 GA EPD 2002

1.2 Watershed Description

The Oconee River Basin is located in central Georgia, occupying an area of approximately 5,326 square miles (EPD, 2003). The Upper Oconee Basin is made up of the Oconee River, Apalachee River, Indian Creek, and Murder Creek sub-watersheds. These converge at Lake Sinclair. The City of Athens is a major populated area through which the Upper Oconee River flows. From Lake Sinclair, the Oconee River flows south and southeast past the City of Milledgeville, continues south through the City of Dublin, and then travels approximately 110 miles until it finally joins the Ocmulgee River near the City of Hazlehurst, to form the Altamaha River.

The Upper Oconee River lies in the Piedmont Physiographic Province and the Lower Oconee River occurs in the Coastal Plain Physiographic Province. The Oconee River Basin includes two United States Geologic Survey (USGS) eight-digit hydrologic units, HUC 03070101 (Upper Oconee River) watershed, and HUC 03070102 (Lower Oconee River) watershed. Figure 1 shows the location of the Oconee River Basin in the State of Georgia. Figure 2 shows the locations of the two hydrologic units within the Oconee River Basin. Figures 3 through 17 indicate the location of the 303(d) listed stream segments in the Oconee River Basin.

The land use characteristics of the Oconee River Basin watersheds were determined using data from the Georgia Land Use Trends (GLUT) for Year 2015. This raster land use trend product was developed by the University of Georgia – Natural Resources Spatial Analysis Laboratory (NARSAL) and follows land use trends for years 1974, 1985, 1991, 1998, 2001, 2005, 2008 and 2015. Some of the NARSAL land use types were reclassified, aggregated into similar land use types, and used in the final watershed characterization. Table 4 lists the watershed land use distribution for the drainage areas of the twenty-two (22) stream segments.

1.3 State Water Planning

The Georgia Legislature enacted the Metropolitan North Georgia Water Planning District Act in 2001 to create the Metropolitan North Georgia Water Planning District (MNGWPD) to preserve and protect water resources in the 15-county metropolitan Atlanta area. The MNGWPD is charged with the development of comprehensive regional and watershed specific water resource management plans to be implemented by local governments in the metropolitan Atlanta area. The MNGWPD issued its first water resource management plan document in 2003.

In 2004, the Georgia Legislature enacted the Comprehensive State-wide Water Management Planning Act to ensure management of water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens on a state-wide level. GA EPD later developed the 2008 Comprehensive State-wide Water Management Plan, which established Georgia's ten Regional Water Planning Councils (RWPCs) and laid the groundwork for the RWPCs to develop their own Regional Water

Plans. The boundaries of these ten RWPCs, in addition to the MNGWPD, are shown in Figure 18. Eight of the listed waterbodies are located within the boundaries of the Upper Oconee Regional Water Planning Council, five of the listed waterbodies are located within the boundaries of the Middle Ocmulgee Regional Water Planning Council, and two of the listed waterbodies are located within the boundaries of the Altamaha Regional Water Planning Council.

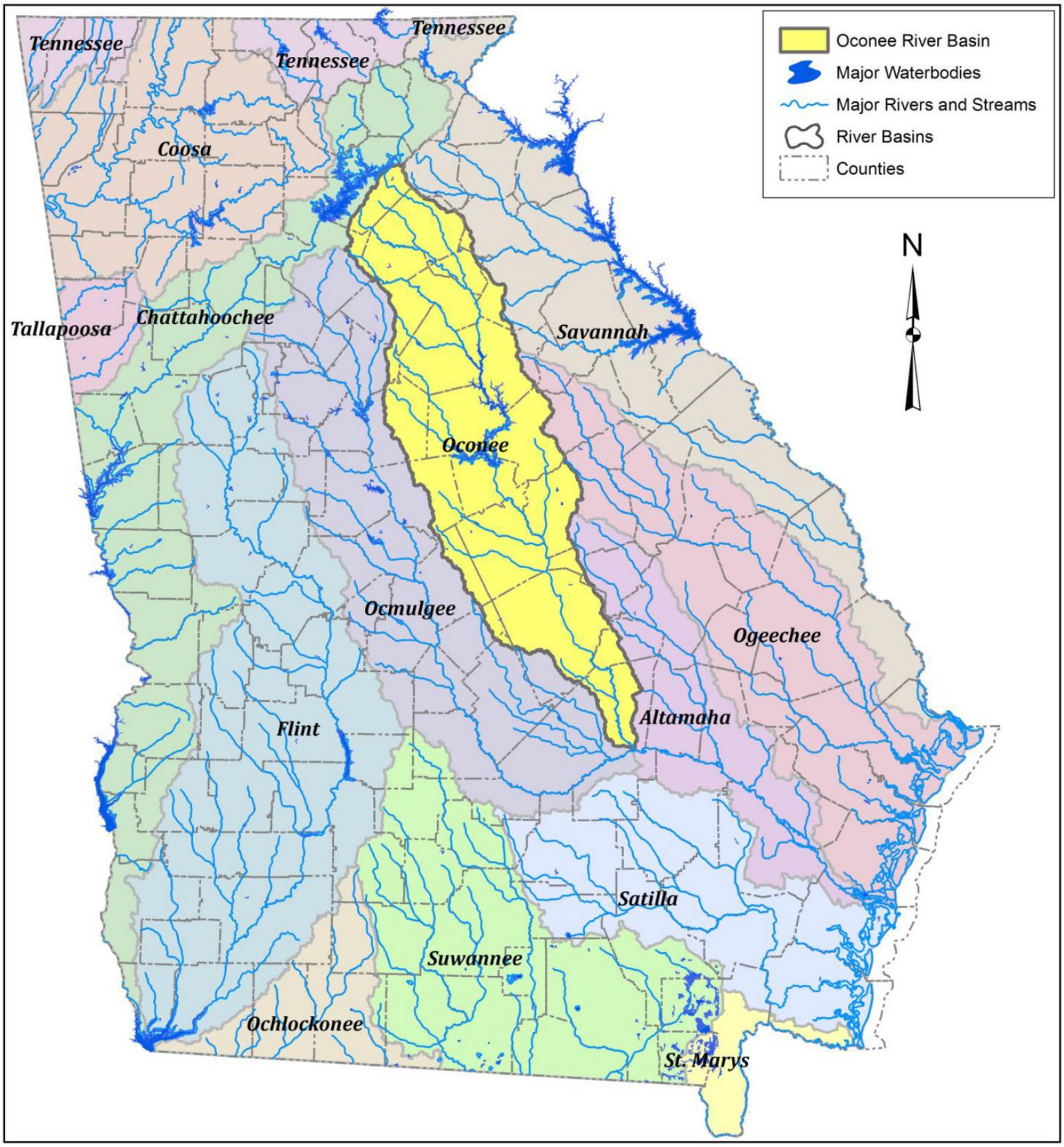

Figure 1: Location of the Oconee River Basin in Georgia

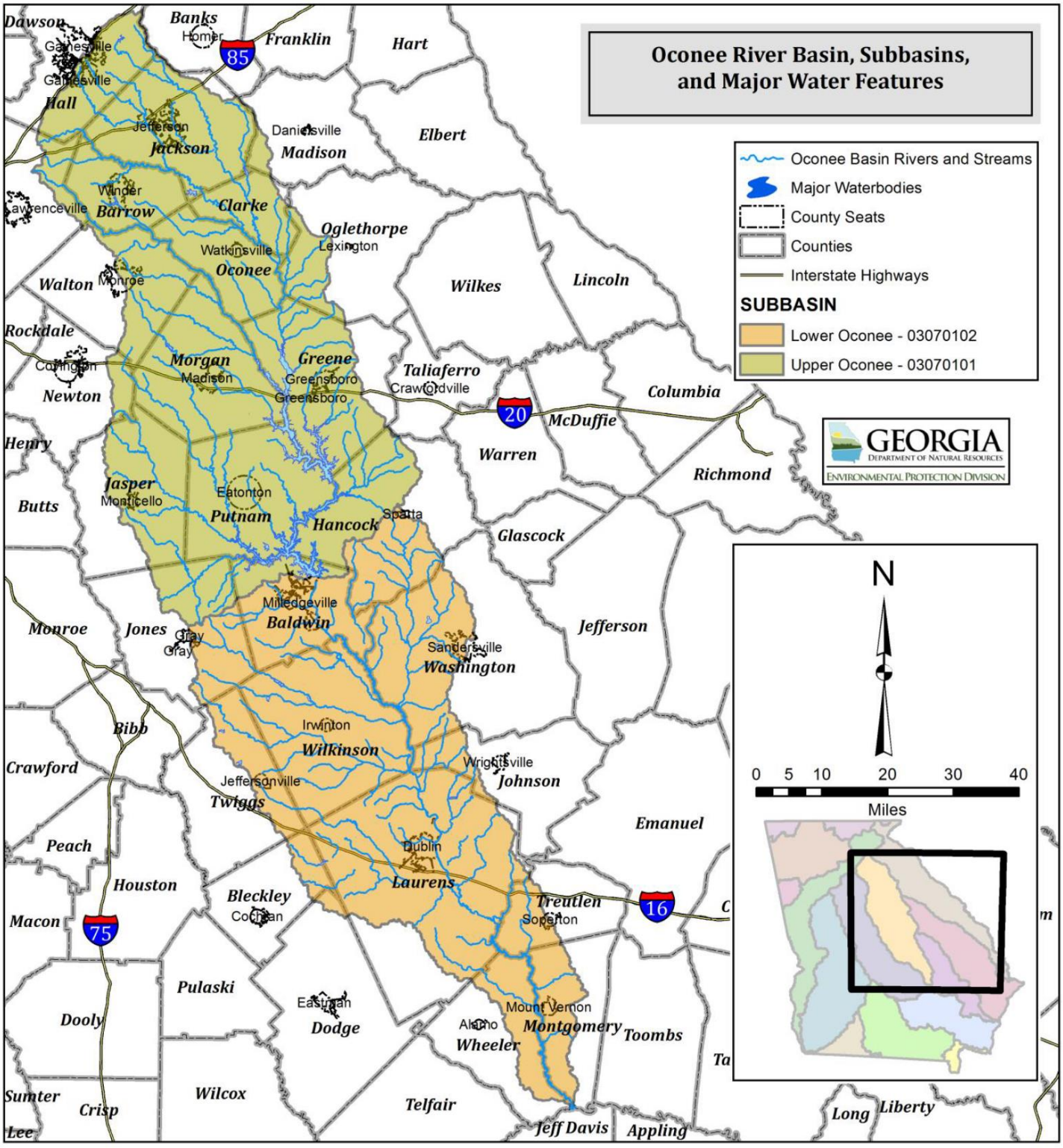

Figure 2: Major Political Boundaries, Water Features, and U.S.G.S. 12-digit HUC

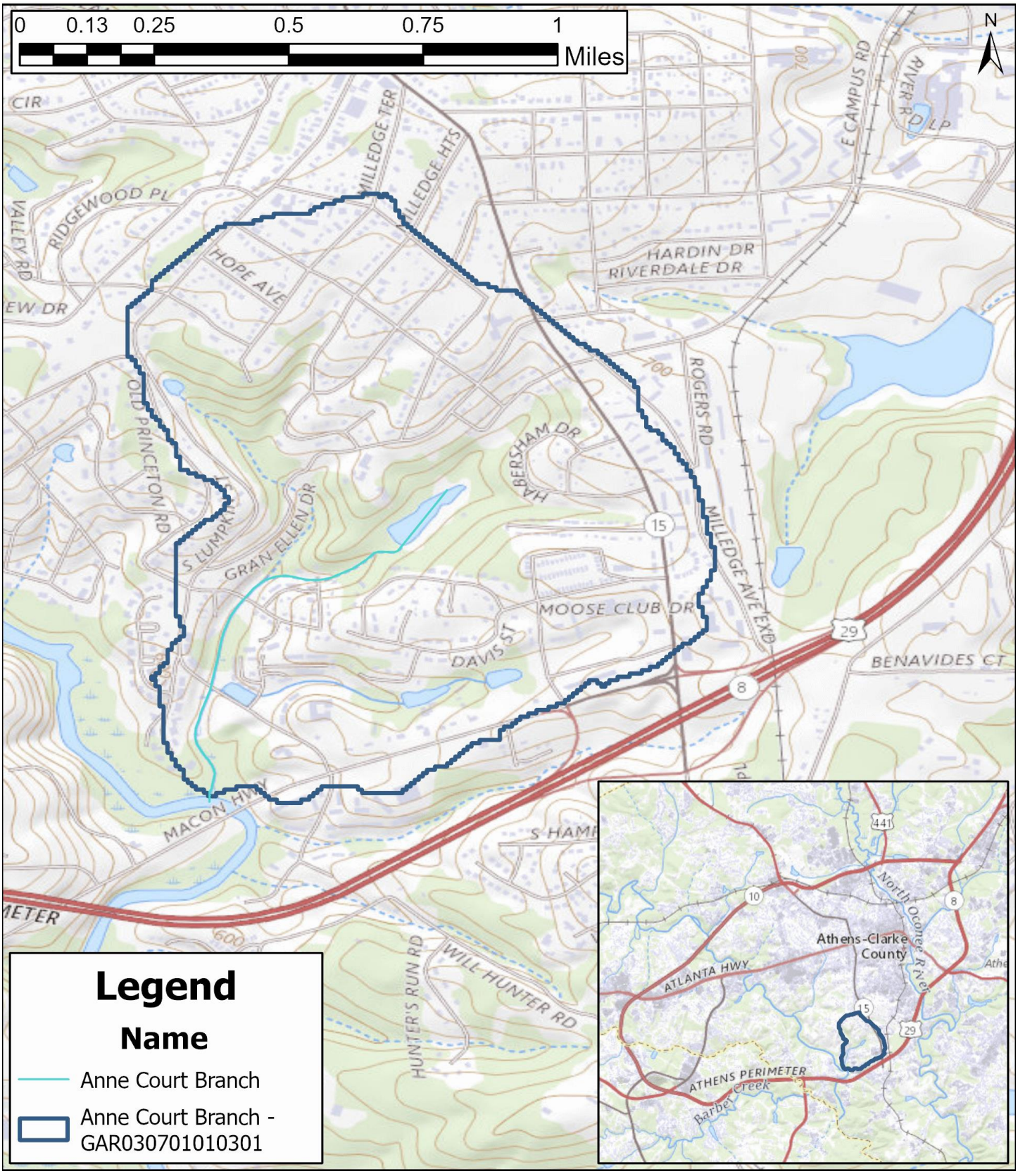

Figure 3: Impaired Stream Segment of Anne Court Branch

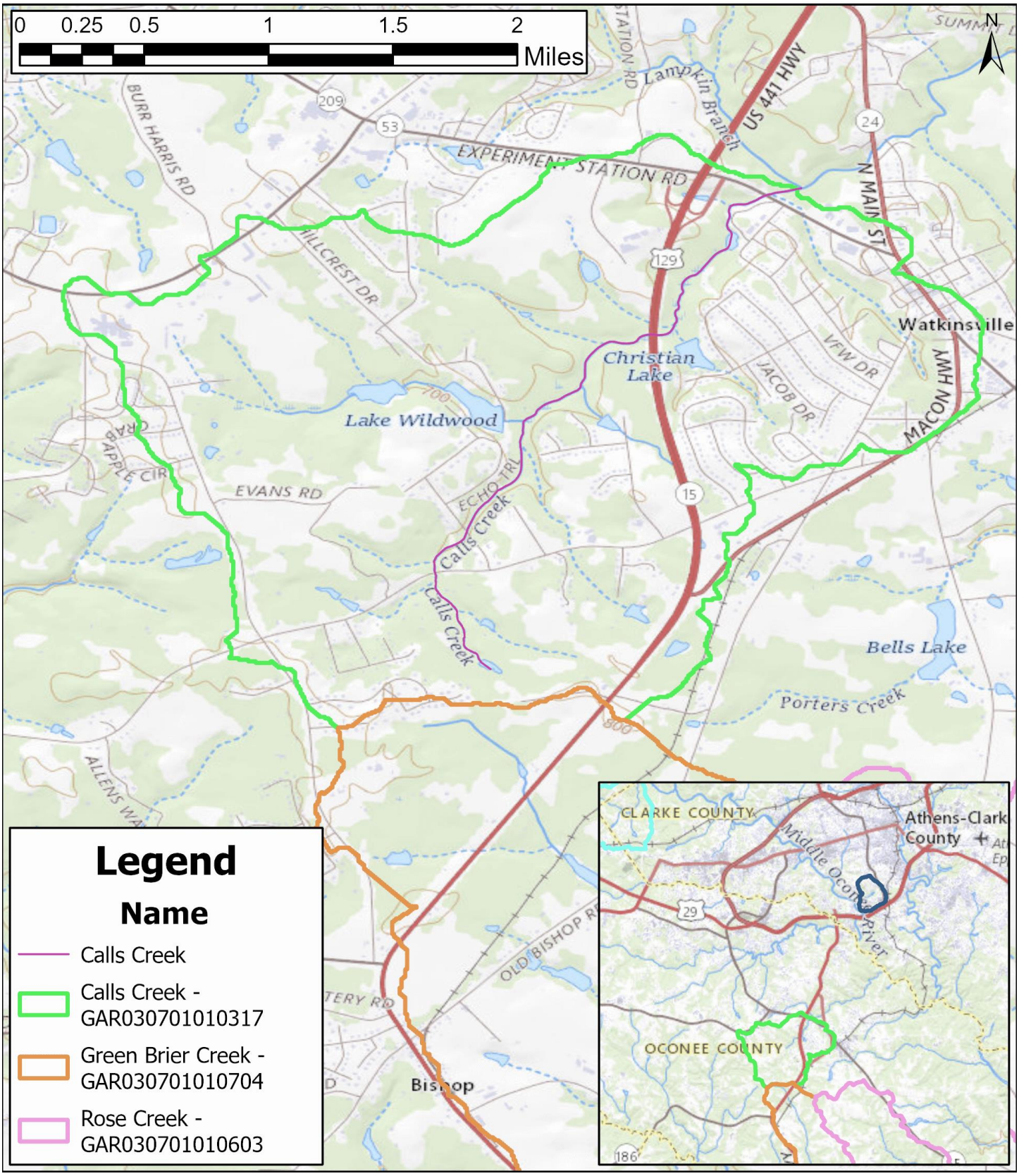

Figure 4: Impaired Stream Segment of Calls Creek

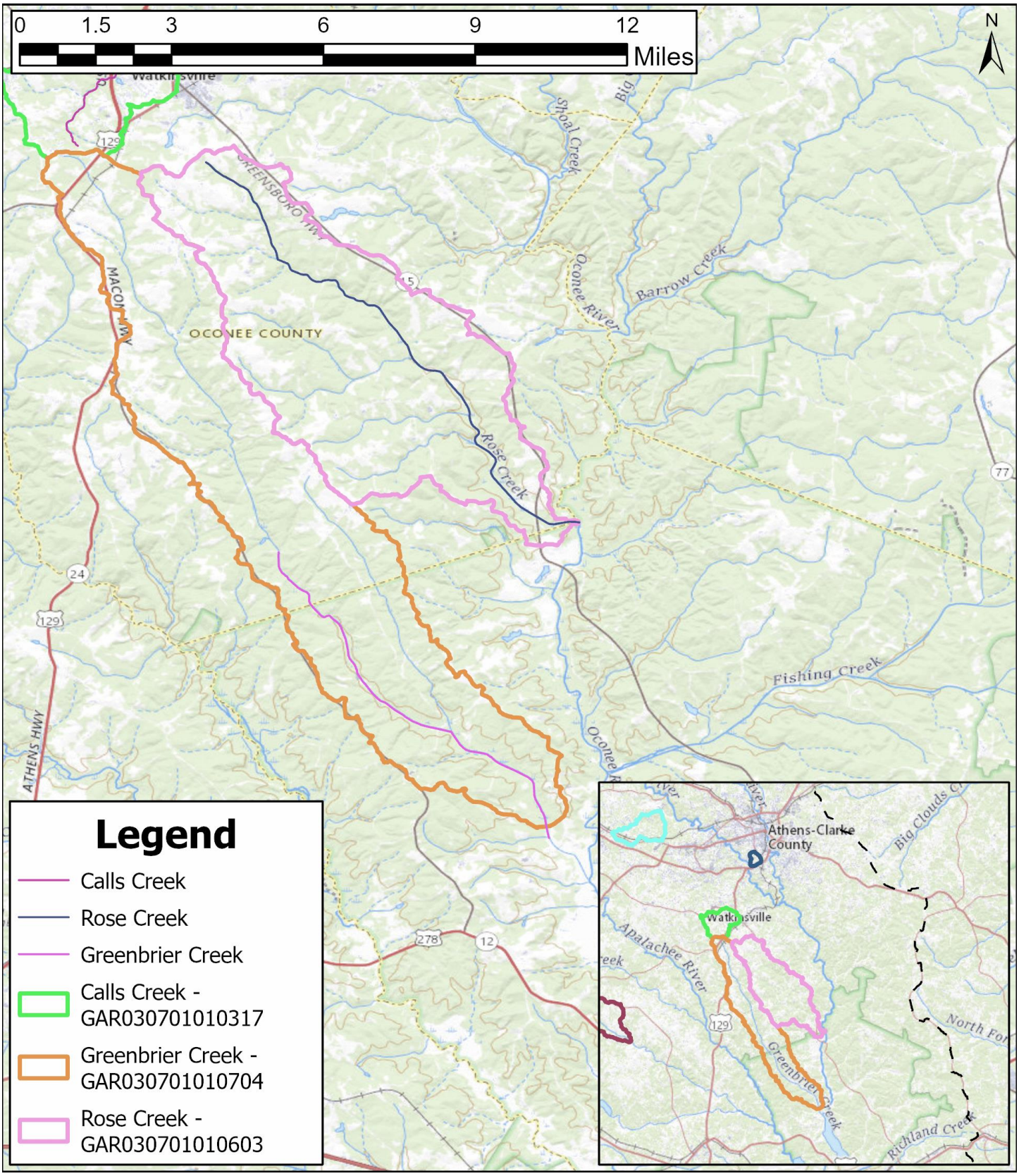

Figure 5: Impaired Stream Segments of Greenbrier Creek and Rose Creek

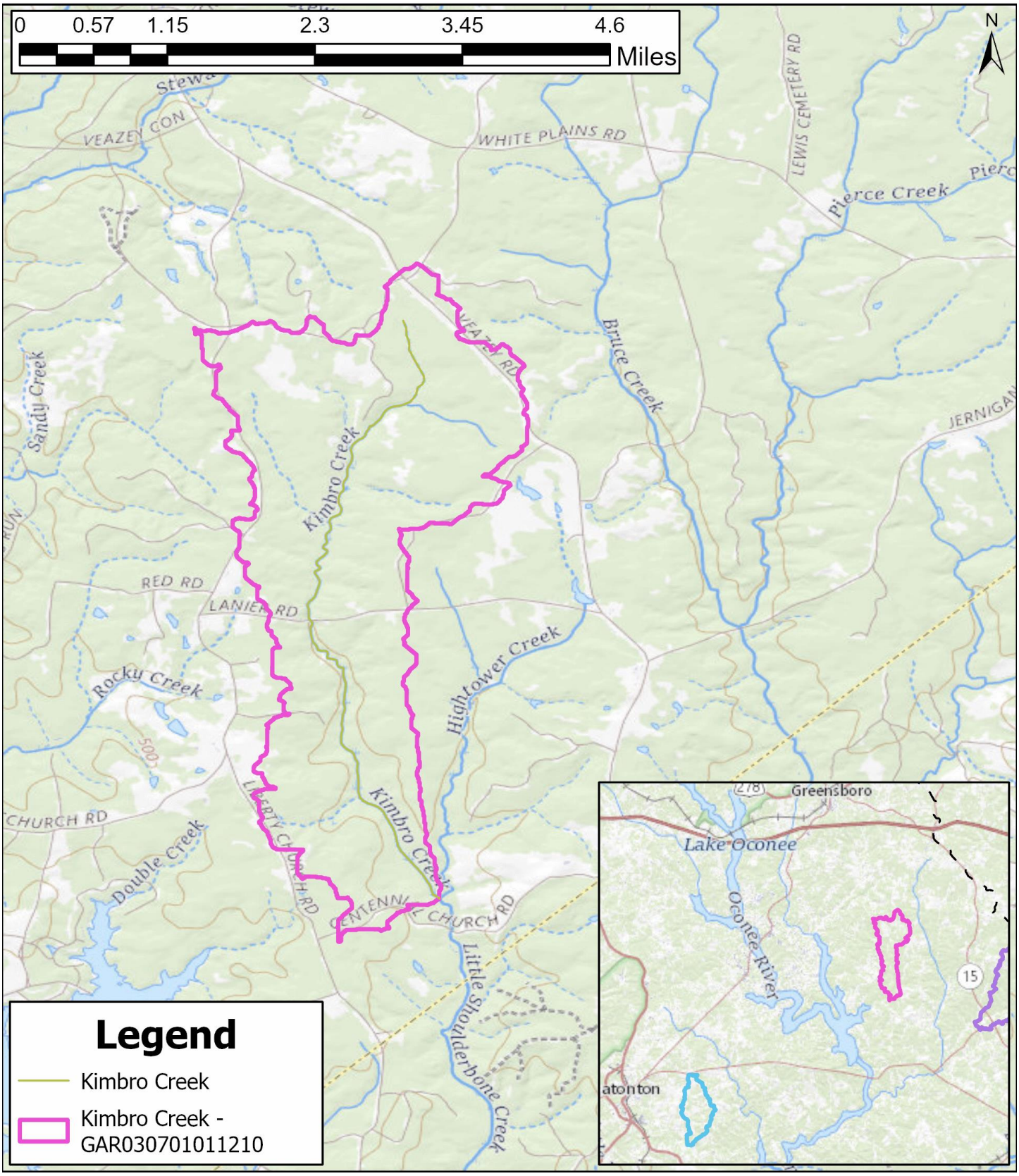

Figure 6: Impaired Stream Segment of Kimbro Creek

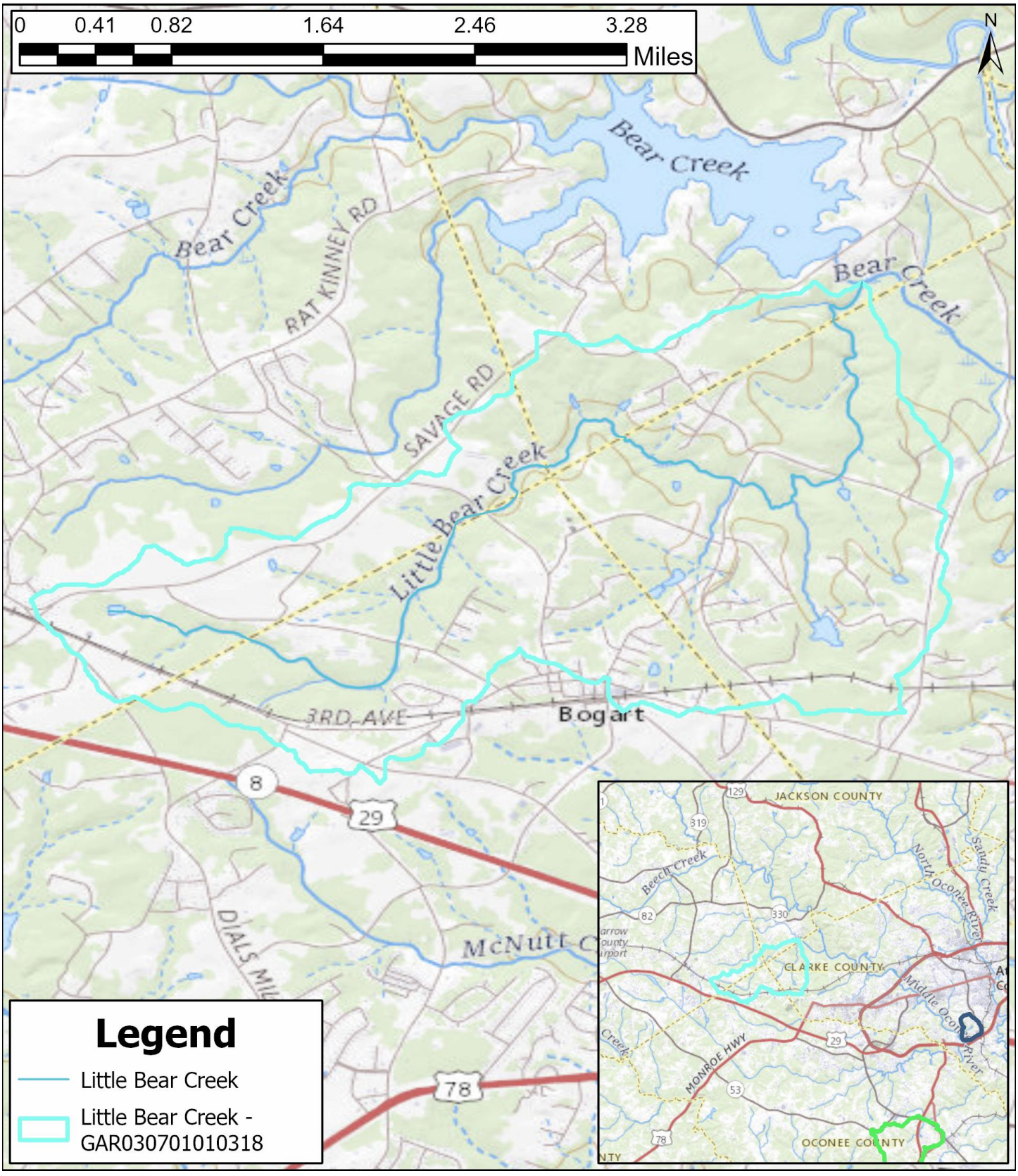

Figure 7: Impaired Stream Segment of Little Bear Creek

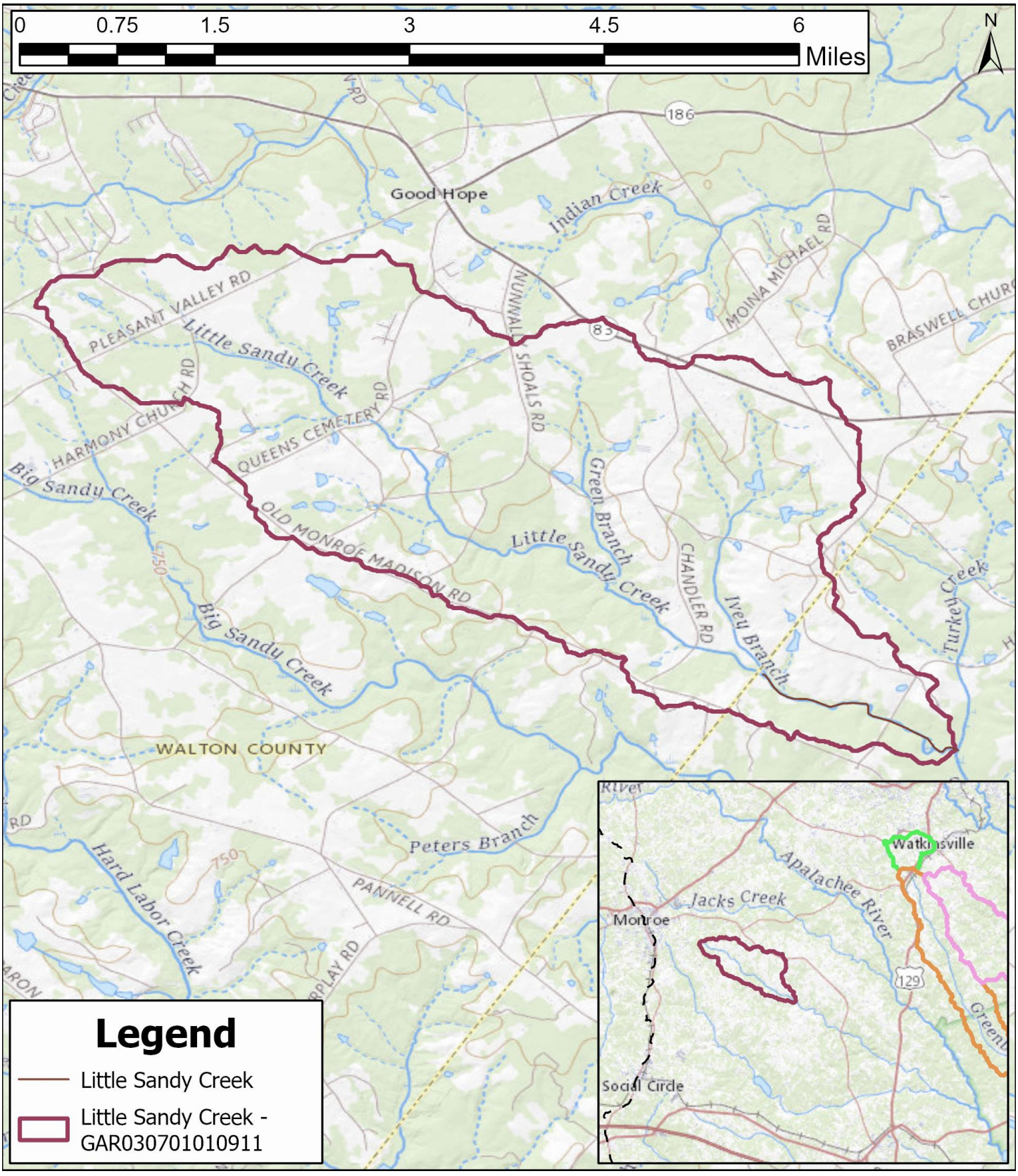

Figure 8: Impaired Stream Segment of Little Sandy Creek

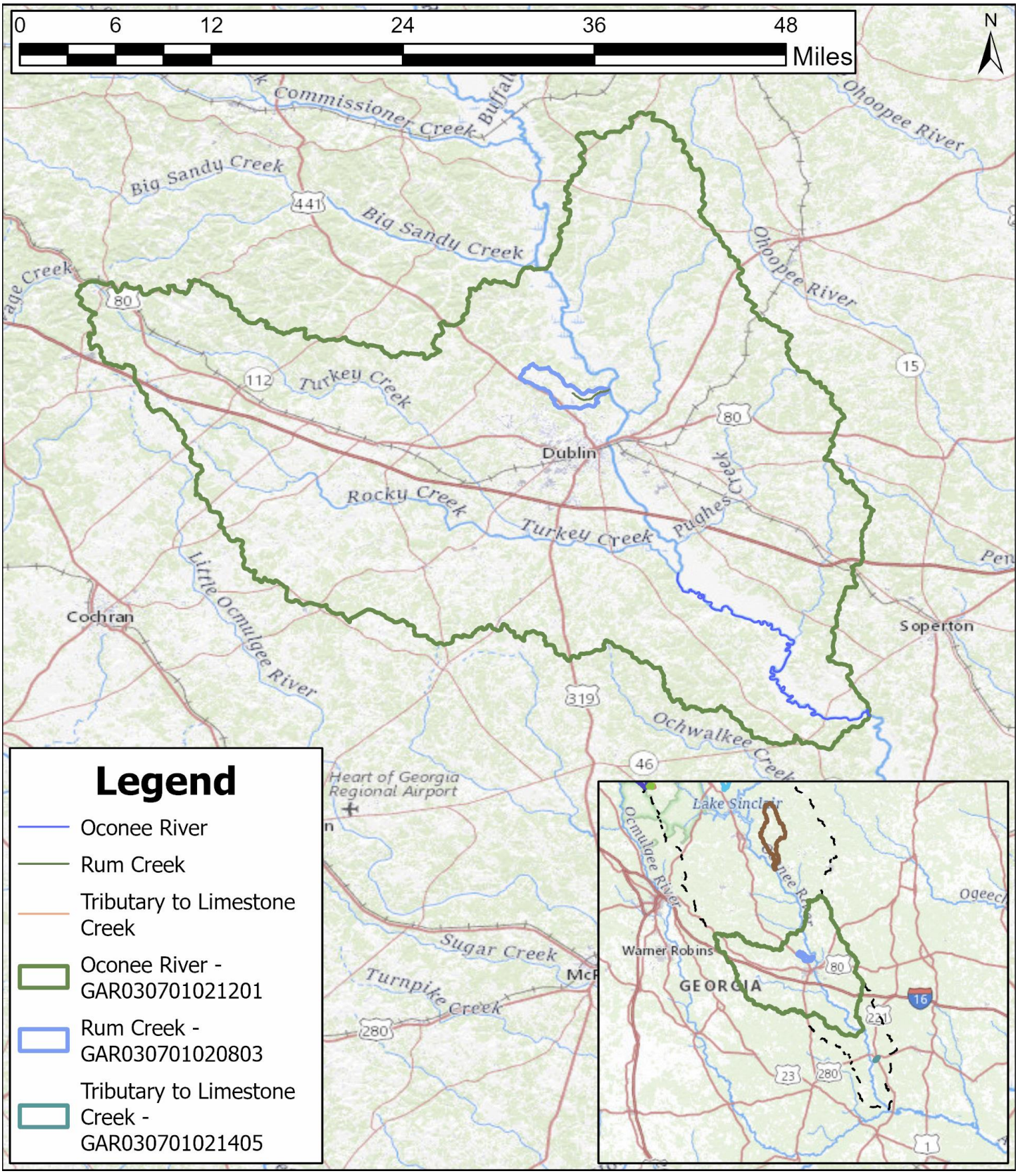

Figure 9: Impaired Stream Segment of Oconee River

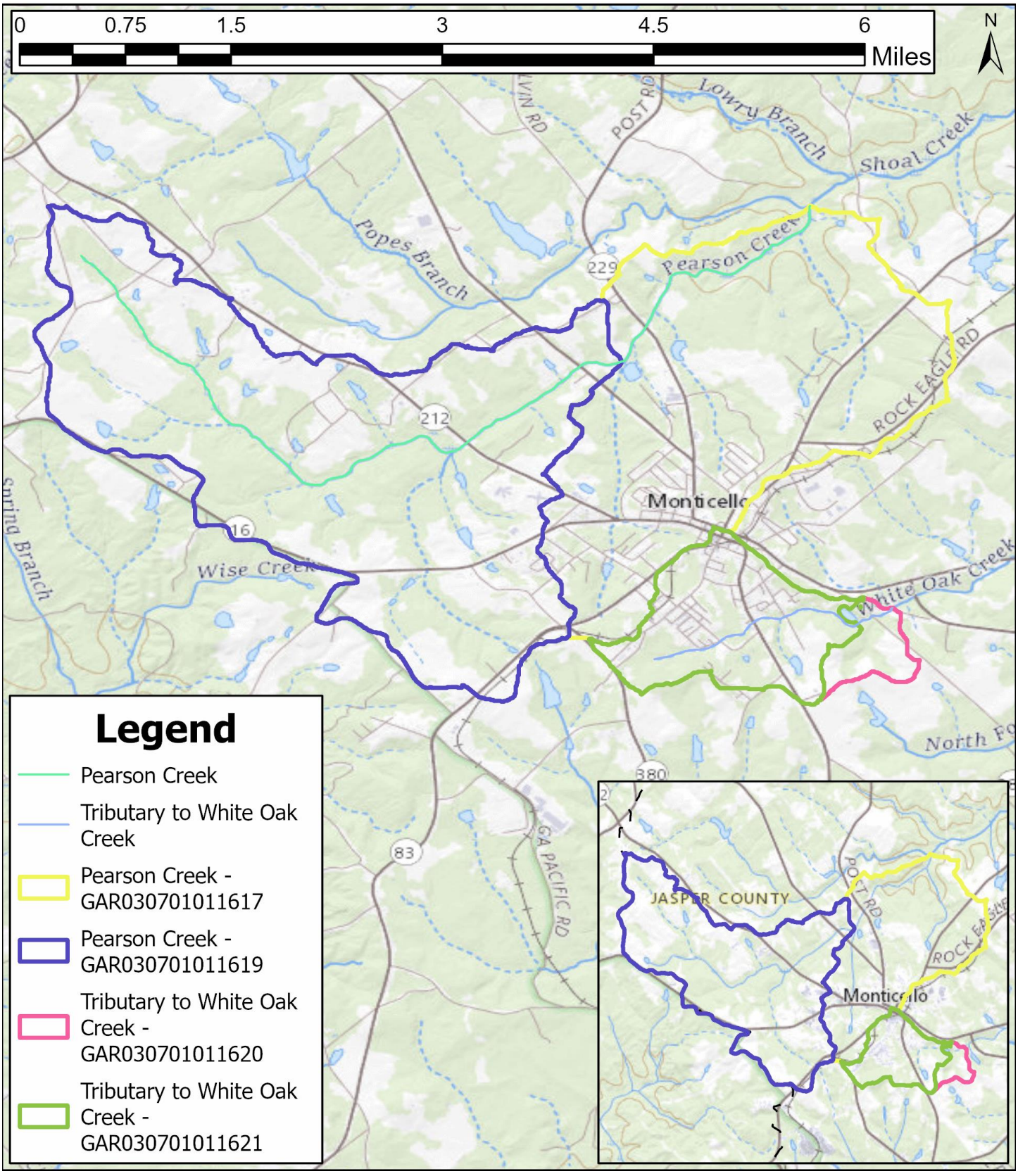

Figure 10: Impaired Stream Segments of Pearson Creek and Tributary to White Oak Creek

Figure 11: Impaired Stream Segment of Rum Creek

Figure 12: Impaired Stream Segment of Town Creek

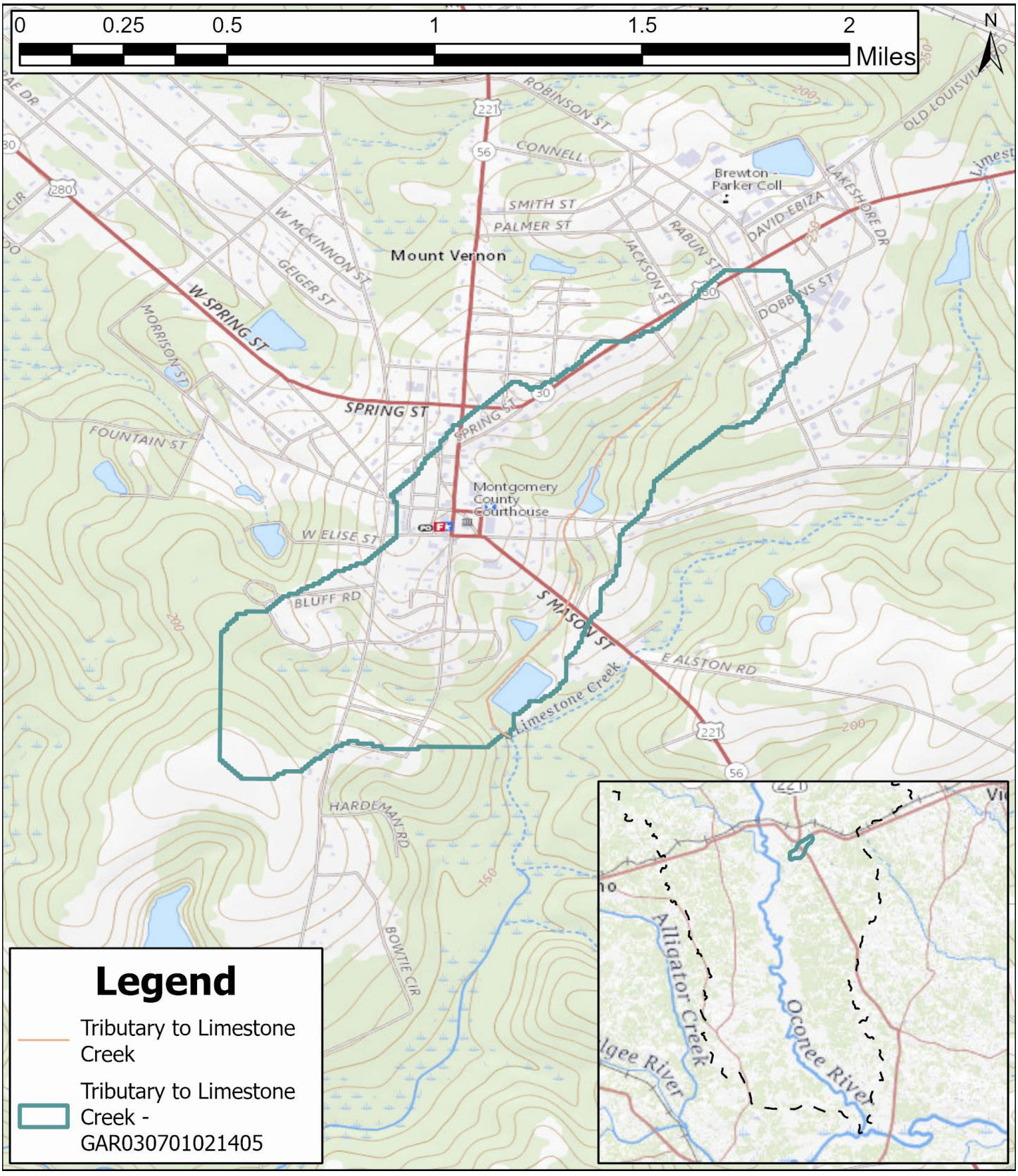

Figure 13: Impaired Stream Segment of Tributary to Limestone Creek

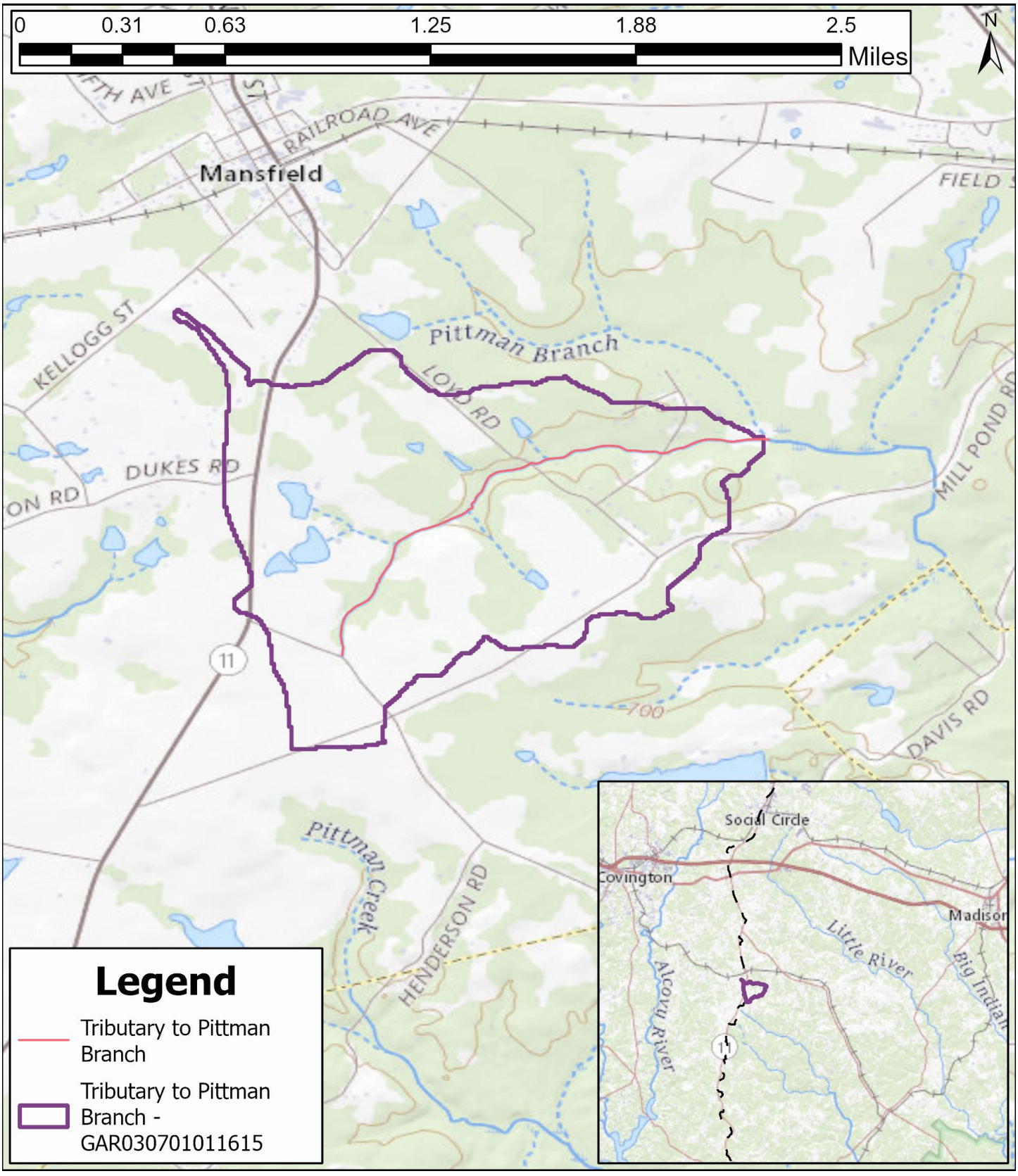

Figure 14: Impaired Stream Segment of Tributary to Pittman Branch

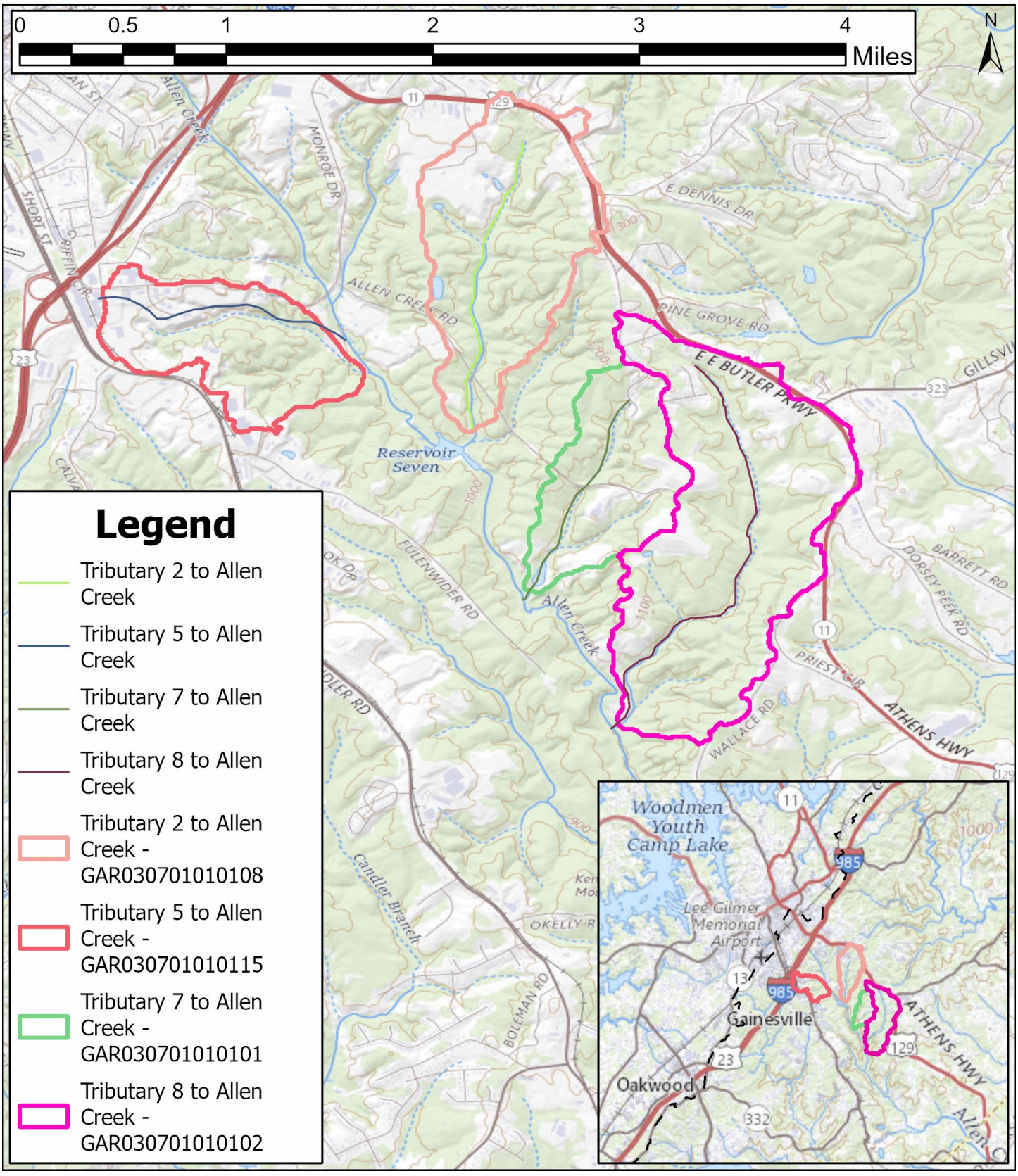

Figure 15: Impaired Stream Segments of Tributaries to Allen Creek

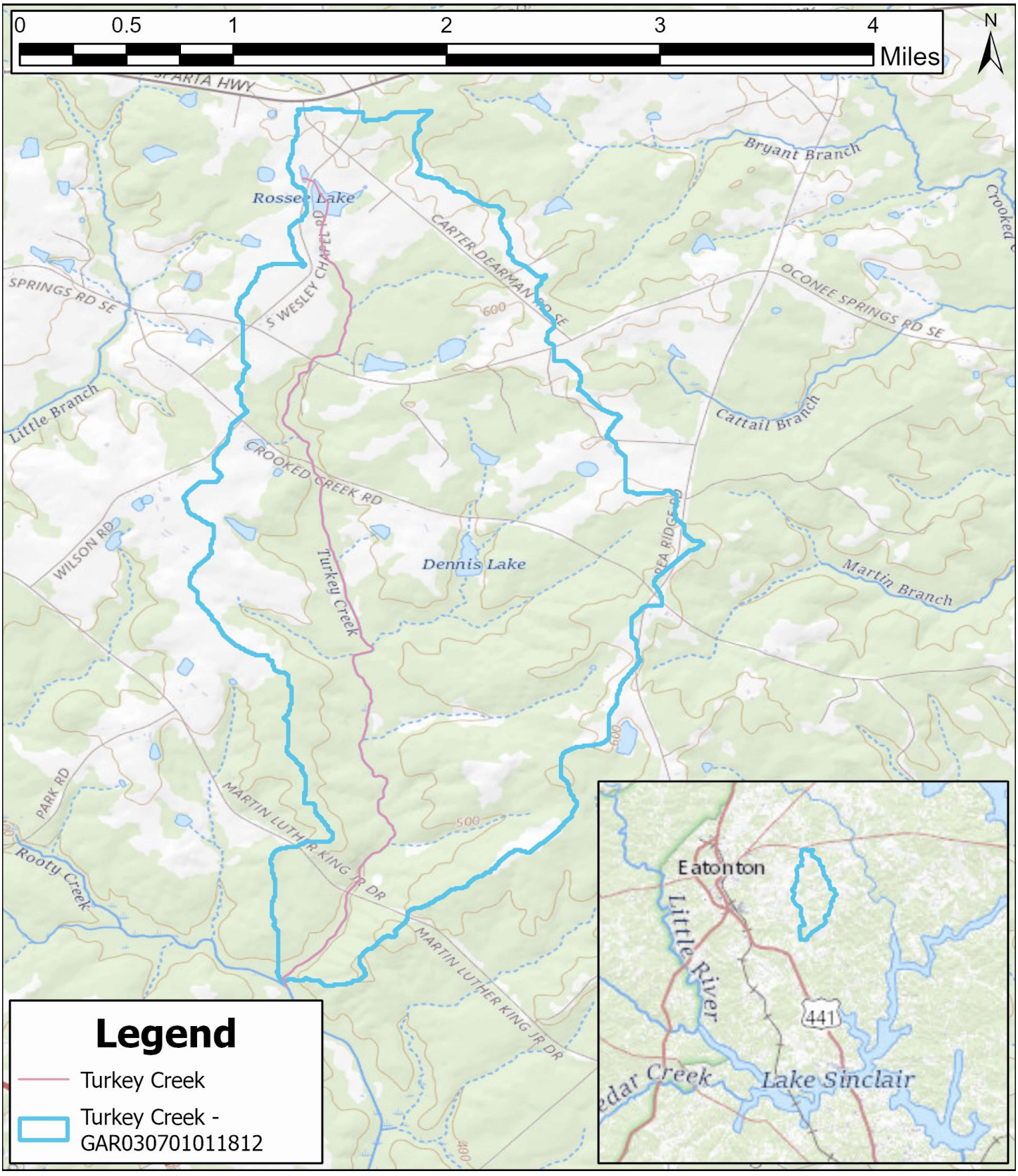

Figure 16: Impaired Stream Segment of Turkey Creek

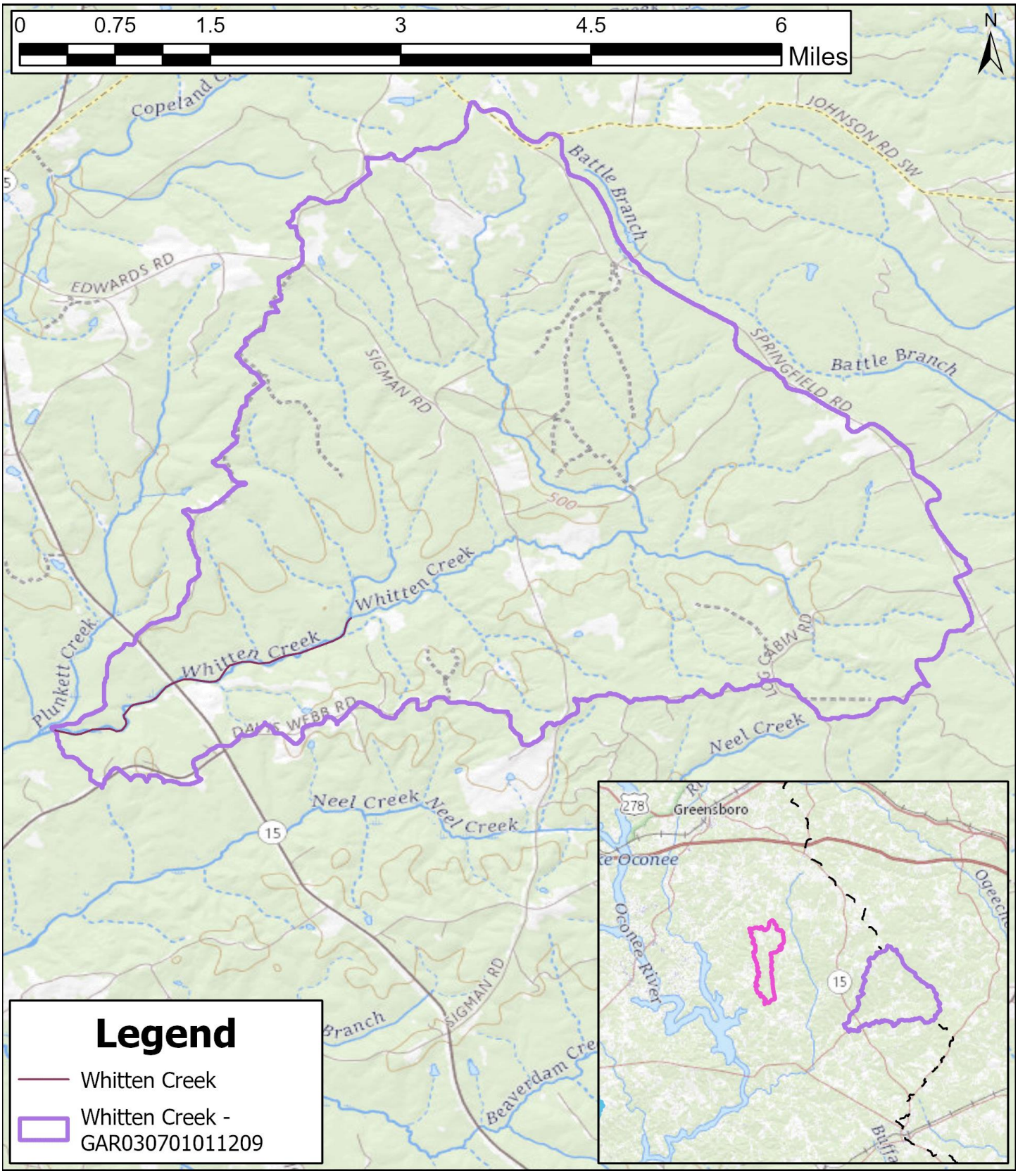

Figure 17: Impaired Stream Segment of Whitten Creek

In 2011, each RWPC developed and adopted Regional Water Plans, which identify ranges of actions or management practices to help meet the State's water quality challenges. Implementation of these plans is critical in meeting Georgia's water resource challenges. The Upper Oconee RWPC, Middle Ocmulgee RWPC, and Altamaha RWPC updated their Regional Water Plans in June 2017, which were adopted by GA EPD in July 2017. These Regional Water Plans are available here.

1.4 Water Quality Standard

Every waterbody in the State has one or more designated uses, and each designated use has water quality criteria established to protect it. Waterbodies in Georgia are assessed based on the 305(b)/303(d) Listing Assessment Methodology, as such GA EPD placed fifteen (15) stream segments in the Oconee River Basin on the 2022 303(d) list of impaired waters because it was assessed as "not supporting" its designated use of "Fishing" due to violations of the fecal coliform criteria. The potential causes listed include urban runoff and nonpoint sources. The fishing bacteria water quality standards as approved by US EPA Region 4 on January 20, 2021, and applicable at the time of listing was as follows:

(c) Fishing: Propagation of Fish, Shellfish, Game and Other Aquatic Life; primary contact recreation in and on the water for the months of May – October, secondary contact recreation in and on the water for the months of November – April; or for any other use requiring water of a lower quality.

(i) Bacteria:

1. For the months of May through October, when water contact recreation activities are expected to occur, fecal coliform not to exceed a geometric mean of 200 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200 counts per 100 mL (geometric mean occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 counts per 100 mL in lakes and reservoirs and 500 counts per 100 mL in free flowing freshwater streams. For the months of November through April, fecal coliform not to exceed a geometric mean of 1,000 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and not to exceed a maximum of 4,000 counts per 100 mL for any sample. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

2. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

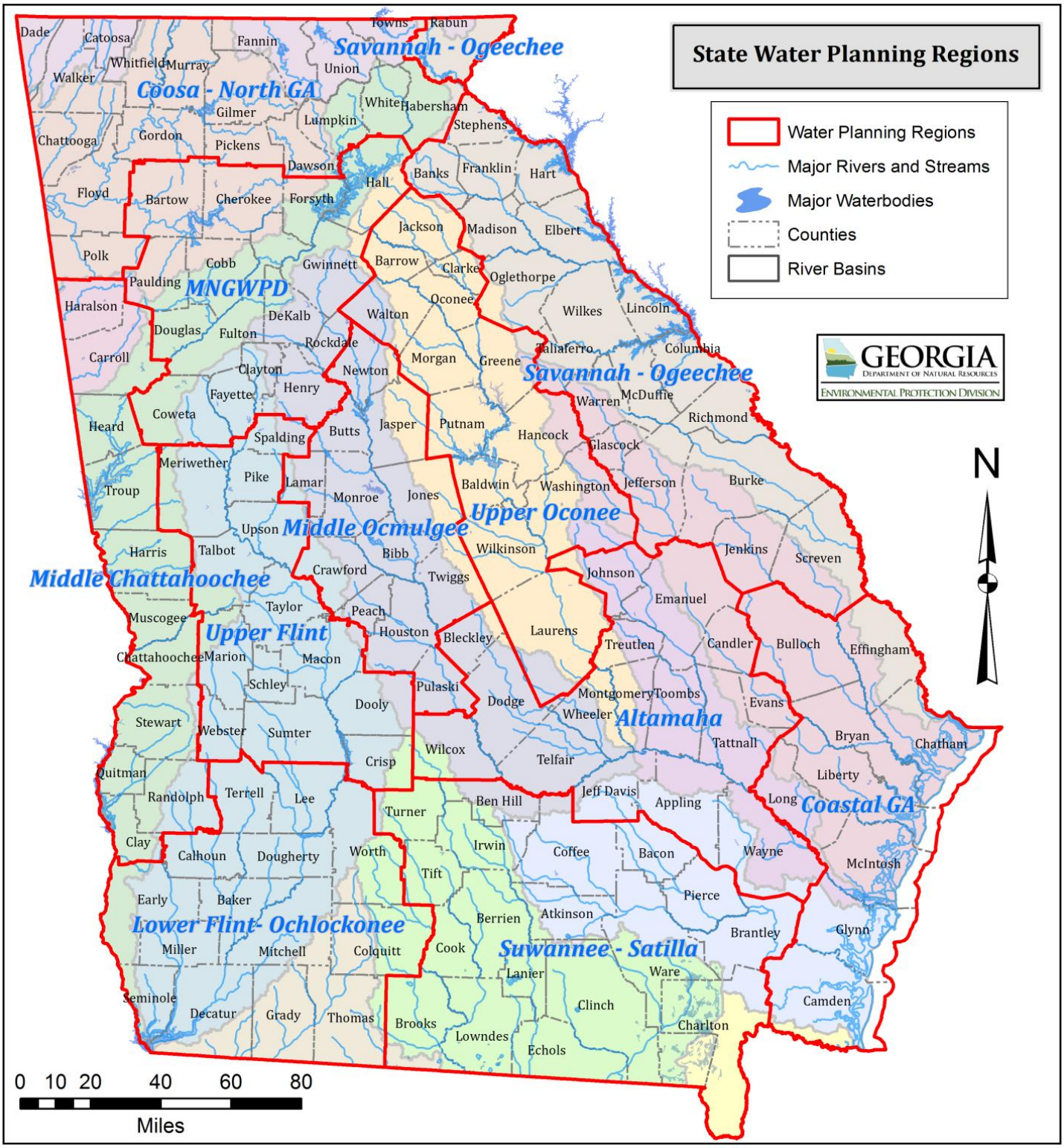

Figure 18: Boundaries of the Regional Water Planning Councils and the Metropolitan North Georgia Water Planning District

In January 2022, the Georgia DNR Board adopted new bacteria criteria for "Fishing" and "Drinking Water" designated uses using the bacterial indicators *E. coli* and enterococci. These bacteria are better indicators for human health illnesses. The adopted criteria have the same estimated illness rate (8 per 1000 swimmers) as the previously established criteria. EPA approved the proposed standards August 31, 2022. Since this TMDL was written after EPA approved the new bacteria criteria, the TMDL will use both bacterial indicators. The use classification water quality standards for fecal coliform bacteria, as stated in the *State of Georgia's Rules and Regulations for Water Quality Control*, Chapter 391-3-6-.03(6)(c)(iii) (GA EPD, 2022), are:

(c) Fishing: Propagation of Fish, Shellfish, Game and Other Aquatic Life; primary contact recreation in and on the water for the months of May – October, secondary contact recreation in and on the water for the months of November – April; or for any other use requiring water of a lower quality.

(i) Bacteria:

1. Estuarine waters: For the months of May through October, when primary water contact recreation activities are expected to occur, culturable enterococci not to exceed a geometric mean of 35 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an enterococci statistical threshold value (STV) of 130 counts per 100 mL the same 30-day interval.

   For the months of November through April, culturable enterococci not to exceed a geometric mean of 74 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an enterococci statistical threshold value (STV) of 273 counts per 100 mL in the same 30-day interval.

2. All other fishing waters: For the months of May through October, when primary water contact recreation activities are expected to occur, culturable E. coli not to exceed a geometric mean of 126 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals
   not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an E. coli statistical threshold value (STV) of 410 counts per 100 mL in the same 30-day interval.

   For the months of November through April, culturable E. coli not to exceed a geometric mean of 265 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an E. coli statistical threshold value (STV) of 861 counts per 100 mL in the same 30-day interval.

3. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

4. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

Table 4: Oconee River Basin Land Coverage

Stream/Segment	Land Use Categories - Acres (Percent)													
	Beaches, Dunes, Mud	Open Water	Developed, Low Intensity	Developed, Medium Intensity	Developed, High Intensity	Transitional, Clearcut, Sparse	Forest	Row Crops	Pasture, Hay	Other Grasses (Developed Open Space, Utility Swaths, Golf Courses)	Forested Wetlands	Non-Forested Wetlands (Salt/Brackish)	Non-Forested Wetlands (Freshwater)	Total
Anne Court Branch	0.0	0.0	129.4	54.9	15.8	5.8	77.4	0.0	1.8	162.1	6.4	0.0	1.3	455.0
GAR030701010301	0.0%	0.0%	28.4%	12.1%	3.5%	1.3%	17.0%	0.0%	0.4%	35.6%	1.4%	0.0%	0.3%	100%
Calls Creek	2.2	16.9	395.2	133.2	37.4	145.0	829.8	0.4	704.3	486.8	61.8	0.0	0.0	2813.1
GAR030701010317	0.1%	0.6%	14.0%	4.7%	1.3%	5.2%	29.5%	0.0%	25.0%	17.3%	2.2%	0.0%	0.0%	100%
Greenbrier Creek	1.6	15.3	283.6	43.8	9.8	533.7	10722.3	208.4	3815.2	977.9	1154.7	0.0	2.0	17768.2
GAR030701010704	0.0%	0.1%	1.6%	0.2%	0.1%	3.0%	60.3%	1.2%	21.5%	5.5%	6.5%	0.0%	0.0%	100%
Kimbro Creek	0.2	0.0	32.7	3.6	0.4	328.5	2727.0	0.0	71.8	155.0	157.9	0.0	0.0	3674.9
GAR030701011210	0.0%	0.0%	0.9%	0.1%	0.0%	8.9%	74.2%	0.0%	2.0%	4.2%	4.3%	0.0%	0.0%	100%
Little Bear Creek	0.2	11.1	298.2	42.9	16.9	117.0	2006.4	2.0	770.8	552.2	70.7	0.0	0.0	3888.6
GAR030701010318	0.0%	0.3%	7.7%	1.1%	0.4%	3.0%	51.6%	0.1%	19.8%	14.2%	1.8%	0.0%	0.0%	100%
Little Sandy Creek	1.8	28.0	270.4	10.7	2.0	76.1	1810.5	526.6	3605.7	417.2	399.0	0.0	0.0	7148.0
GAR030701010911	0.0%	0.4%	3.8%	0.1%	0.0%	1.1%	25.3%	7.4%	50.4%	5.8%	5.6%	0.0%	0.0%	100%
Oconee River	3727.1	46851.5	106104.8	31144.8	16860.6	156049.3	1783177.4	91472.8	480535.0	198466.7	269238.3	254.4	1829.4	3201564.3
GAR030701021201	0.1%	1.5%	3.3%	1.0%	0.5%	4.9%	55.7%	2.9%	15.0%	6.2%	8.4%	0.0%	0.1%	100%
Pearson Creek	9.8	37.6	369.4	76.5	40.0	253.3	2438.3	4.2	2121.4	668.1	295.6	0.0	0.0	6314.2
GAR030701011617	0.2%	0.6%	5.9%	1.2%	0.6%	4.0%	38.6%	0.1%	33.6%	10.6%	4.7%	0.0%	0.0%	100%
Pearson Creek	7.3	27.6	192.8	42.7	18.5	46.7	1148.0	1.8	1775.6	215.7	181.3	0.0	0.0	3658.0
GAR030701011619	0.2%	0.8%	5.3%	1.2%	0.5%	1.3%	31.4%	0.0%	48.5%	5.9%	5.0%	0.0%	0.0%	100%

Stream/Segment	Land Use Categories - Acres (Percent)													
	Beaches, Dunes, Mud	Open Water	Developed, Low Intensity	Developed, Medium Intensity	Developed, High Intensity	Transitional, Clearcut, Sparse	Forest	Row Crops	Pasture, Hay	Other Grasses (Developed Open Space, Utility Swaths, Golf Courses)	Forested Wetlands	Non-Forested Wetlands (Salt/Brackish)	Non-Forested Wetlands (Freshwater)	Total
Rose Creek	2.2	37.1	205.0	40.0	6.4	340.7	7992.9	48.3	5039.2	693.2	635.2	0.0	25.6	15065.9
GAR030701010603	0.0%	0.2%	1.4%	0.3%	0.0%	2.3%	53.1%	0.3%	33.4%	4.6%	4.2%	0.0%	0.2%	100%
Rum Creek	8.0	33.1	86.5	29.8	6.2	109.2	746.1	686.8	945.4	238.9	355.2	0.4	10.9	3256.5
GAR030701020803	0.2%	1.0%	2.7%	0.9%	0.2%	3.4%	22.9%	21.1%	29.0%	7.3%	10.9%	0.0%	0.3%	100%
Town Creek	5.1	84.5	547.8	184.4	9.1	2191.3	26840.2	2548.4	1204.9	1799.4	2902.5	0.0	17.8	38376.5
GAR030701020206	0.0%	0.2%	1.4%	0.5%	0.0%	5.7%	69.9%	6.6%	3.1%	4.7%	7.6%	0.0%	0.0%	100%
Tributary 2 to Allen Creek	0.0	0.0	30.9	26.9	31.4	14.7	351.4	0.0	11.8	17.6	1.1	0.0	0.0	485.7
GAR030701010108	0.0%	0.0%	6.4%	5.5%	6.5%	3.0%	72.3%	0.0%	2.4%	3.6%	0.2%	0.0%	0.0%	100%
Tributary 5 to Allen Creek	0.0	0.0	41.8	32.2	47.1	7.6	156.8	0.0	14.7	10.9	0.2	0.0	0.0	311.4
GAR030701010115	0.0%	0.0%	13.4%	10.4%	15.1%	2.4%	50.4%	0.0%	4.7%	3.5%	0.1%	0.0%	0.0%	100%
Tributary 7 to Allen Creek	0.0	0.0	8.5	5.1	4.0	17.6	212.2	0.0	22.7	6.4	2.9	0.0	0.0	279.3
GAR030701010101	0.0%	0.0%	3.0%	1.8%	1.4%	6.3%	76.0%	0.0%	8.1%	2.3%	1.0%	0.0%	0.0%	100%
Tributary 8 to Allen Creek	0.0	0.0	37.8	15.1	2.4	55.8	501.7	0.0	102.1	52.9	1.3	0.0	0.0	769.3
GAR030701010102	0.0%	0.0%	4.9%	2.0%	0.3%	7.3%	65.2%	0.0%	13.3%	6.9%	0.2%	0.0%	0.0%	100%
Tributary to Limestone Creek	0.2	2.4	48.9	20.2	9.8	12.5	99.2	30.5	85.4	55.2	29.6	0.0	0.0	393.9
GAR030701021405	0.1%	0.6%	12.4%	5.1%	2.5%	3.2%	25.2%	7.7%	21.7%	14.0%	7.5%	0.0%	0.0%	100%
Tributary to Pittman Branch	3.1	4.4	49.4	0.4	0.0	17.6	140.8	8.7	386.3	36.0	18.0	0.0	0.0	664.7
GAR030701011615	0.5%	0.7%	7.4%	0.1%	0.0%	2.6%	21.2%	1.3%	58.1%	5.4%	2.7%	0.0%	0.0%	100%
Tributary to White Oak Creek	0.7	1.3	101.6	22.0	12.2	59.4	233.7	0.0	260.0	117.6	14.7	0.0	0.0	823.3
GAR030701011620	0.1%	0.2%	12.3%	2.7%	1.5%	7.2%	28.4%	0.0%	31.6%	14.3%	1.8%	0.0%	0.0%	100%

Stream/Segment	Land Use Categories - Acres (Percent)													
	Beaches, Dunes, Mud	Open Water	Developed, Low Intensity	Developed, Medium Intensity	Developed, High Intensity	Transitional, Clearcut, Sparse	Forest	Row Crops	Pasture, Hay	Other Grasses (Developed Open Space, Utility Swaths, Golf Courses)	Forested Wetlands	Non-Forested Wetlands (Salt/Brackish)	Non-Forested Wetlands (Freshwater)	Total
Tributary to White Oak Creek	0.0	1.3	101.0	22.0	12.2	52.0	190.6	0.0	181.5	106.7	13.8	0.0	0.0	681.2
GAR030701011621	0.0%	0.2%	14.8%	3.2%	1.8%	7.6%	28.0%	0.0%	26.6%	15.7%	2.0%	0.0%	0.0%	100%
Turkey Creek	6.9	26.5	48.0	4.0	0.2	95.6	1705.8	23.8	934.1	121.4	2.7	0.0	0.0	2969.0
GAR030701011812	0.2%	0.9%	1.6%	0.1%	0.0%	3.2%	57.5%	0.8%	31.5%	4.1%	0.1%	0.0%	0.0%	100%
Whitten Creek	2.2	13.8	45.4	3.6	0.0	850.9	8646.3	0.9	771.9	526.9	251.5	0.0	9.8	11123.1
GAR030701011209	0.0%	0.1%	0.4%	0.0%	0.0%	7.6%	77.7%	0.0%	6.9%	4.7%	2.3%	0.0%	0.1%	100%

2.0 WATER QUALITY ASSESSMENT

Stream segments are placed on the 303(d) list as not supporting their water use classification based on water quality sampling data. Currently, a stream is placed on this list if more than ten percent of the calculated geometric means exceed their water quality criteria or if more than ten percent of the samples exceed the single sample criteria. Water quality samples collected within a 30-day period that have a fecal coliform geometric mean in excess of 200 counts per 100 milliliters (mL) during the period May through October, or in excess of 1000 counts per 100 mL during the period November through April, are in violation of the bacteria water quality standard. There is also a single sample criterion (4000 counts per 100 mL) not to be exceeded at any given time.

Fecal coliform data used for development of the TMDL in this document were collected during calendar years 2014 through 2021 by GA EPD as part of the trend monitoring program. A summary of sampling station locations and sampling dates is given in Table 5. The raw data are presented in Appendix A. All the streams in which the TMDLs are being revised are currently meeting their water quality standards, and thus the streams are not included in the table below. These streams may have been listed on spill data, and that is no longer available. An alternative method for calculating the TMDL bacterial loading was developed and will be described in later sections with supporting information in Appendix A.

Table 5: Sampling Stations and Dates – Oconee River Basin

Stream Segment	Location	GA EPD Monitoring Station No.	GPS Coordinates	Monitoring Station Description	Sample Date Range
Calls Creek GAR030701010317	Headwaters to Lampkin Branch	RV_03_16203	33.860761, -83.424908	Calls Creek at State Hwy 441 near Watkinsville, GA	2020
		RV_03_17705	33.86834, -83.4191	Calls Creek at State Route 53 near Athens, GA	2020
Kimbro Creek GAR030701011210	Headwaters to Hightower Creek	RV_03_16356	33.43643, -83.12806	Kimbro Creek at Lanier Road	2020
Little Bear Creek GAR030701010318	Headwaters to Bear Creek	RV_03_17706	33.96587, -83.51485	Little Bear Creek at Fowler Mill Rd near Athens, GA	2020
Little Sandy Creek GAR030701010911	Ivy Branch to Turkey Creek	RV_03_795	33.726647, -83.559861	Little Sandy Creek at Hardeman Mill Rd nr Good Hope, GA	2014
Oconee River GAR030701021201	Turkey Creek to Red Bluff Creek	RV_03_650	32.395334, -82.798458	Oconee River - Shady Field Boat Ramp / Riverbend WMA near Soperton, GA	2019
Pearson Creek GAR030701011617	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	RV_03_16783	33.32556, -83.69175	Pearson Creek at College Street near Monticello, GA	2021
Pearson Creek GAR030701011619	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	RV_03_17797	33.32164, -83.69867	Pearson Creek at Maddux Street near Monticello, GA	2021

Stream Segment	Location	GA EPD Monitoring Station No.	GPS Coordinates	Monitoring Station Description	Sample Date Range
Rose Creek GAR030701010603	Headwaters to the Oconee River	RV_03_668	33.768, -83.324	Rose Creek at Antioch Church Road	2014
Rum Creek GAR030701020803	Hobbs Lake to the Oconee River	RV_03_17786	32.58468, -82.90851	Rum Creek at Perry Dairy Rd near Dublin, GA	2021
Tributary to Limestone Creek GAR030701021405	Headwaters to Limestone Creek	RV_03_5061	32.171549, -82.591193	Unnamed Secondary Tributary to Limestone Creek at State Road 56 near Mt. Vernon, GA	2015
Tributary to Pittman Branch GAR030701011615	Headwaters to Pittman Branch	RV_03_5121	33.506, -83.718	Trib to Pittman Branch at Brook Hollow Way near Mansfield, GA	2015
Tributary to White Oak Creek GAR030701011620	Monticello White Oak WPCP to White Oak Creek	RV_03_17817	33.29575, -83.66833	Trib to White Oak Creek at Jordan Rd near Monticello, GA	2021
Tributary to White Oak Creek GAR030701011621	Headwaters to Monticello White Oak WPCP	RV_03_17818	33.29565, -83.6772	Trib to White Oak Creek at Bonner St near Monticello, GA	2021
Turkey Creek GAR030701011812	Headwaters to Rooty Creek	RV_03_17813	33.28477, -83.32305	Turkey Creek at MLK Jr Dr near Eatonton, GA	2021
Whitten Creek GAR030701011209	Hancock County	RV_03_17292	33.38689, -83.02515	Whitten Creek at SR 15 near White Plains, GA	2018

3.0 SOURCE ASSESSMENT

An important part of the TMDL development process is the identification of potential sources of pollutants causing the waterbody to be listed on the 303(d) list. A source assessment identifies the known and suspected sources and discharges of bacteria in the watershed. Sources are broadly classified as either point or nonpoint sources. The CWA defines a point source as any "discernable, confined, and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture." Nonpoint sources are diffuse, and generally, but not always, involve accumulation of bacteria on land surfaces that wash off due to storm events.

3.1 Point Source Assessment

Title IV of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit program. Basically, there are two categories of NPDES permits: 1) wastewater treatment facilities, and 2) regulated stormwater discharges.

3.1.1 Wastewater Treatment Facilities

In general, NPDES point source discharge permits are issued to Publicly Owned Treatment Works (POTWs) and Non-Publicly Owned Treatment Works (Non-POTWs) authorizing the discharge of treated wastewater to surface waters. POTWs are commonly associated with city and county owned wastewater treatment facilities; whereas Non-POTWs are associated with industrial, private, and federal facilities. The permits include permit conditions, requirements, and numeric effluent limits developed using federal and state effluent guidelines (secondary treatment standards for POTWs and technology-based limits (TBELs) for Non-POTWs) or on water quality standards (water quality-based effluent limits, WQBELs).

The United States Environmental Protection Agency (USEPA) has developed technology-based standards and guidelines, which establish a minimum standard of pollution control for POTW and Non-POTW discharges without regard for the quality of the receiving waters. For POTWs, EPA has established Secondary Treatment Standards. For Non-POTW, the TBELs are based on Best Practical Control Technology Currently Available (BPT), Best Conventional Control Technology (BCT), Best Available Technology Economically Achievable (BAT), and New Source Performance Standards. The level of control required by each facility is dependent on the source of wastewater generated and the pollutants found in the discharge.

The USEPA and the States have also developed numeric and narrative water quality criteria to protect a stream's designated uses. Typically, these criteria are based on the results of aquatic toxicity tests and/or human health criteria and include a margin of safety. Wastewater NPDES permits also include WQBELs to protect these narrative and numeric water quality criteria and their designated uses. WQBELs ensuring water quality standards are met in the receiving water and downstream uses are protected.

For purposes of this TMDL, permitted wastewater treatment facilities are considered point sources, and include POTWs and Non-POTWs. Pollutants discharged from wastewater treatment plants can contribute bacteria to receiving waters. As of 2022, there are twelve (12) NPDES

permitted discharges identified in the watershed of the listed segments in the Oconee River Basin that could potentially impact streams on the 2022 303(d) list for fecal coliform bacteria. Typically, the contributing watershed for a 303(d) listed segment is defined as the area upstream of the segment.

Table 6 provides the monthly average discharge flow and fecal coliform concentrations for these facilities that currently have bacteria permit limits. These data were obtained from calendar years 2015 through 2020 Discharge Monitoring Reports (DMR). The current permitted flow and fecal coliform concentrations are also included in this table. Table 7 also provides a list of existing Non-POTW discharges without bacteria permit limits. It is possible these facilities could contribute bacteria to receiving water because the type of treatment processes they employ.

Another potential point source contribution may be a combined sewer system (CSS) that conveys a mixture of raw sewage and stormwater in the same conveyance structure to the wastewater treatment plant and may also have direct discharges (as authorized under a NPDES permit) to waters of the state. These are generally a component of POTWs. When the combined sewage exceeds the capacity of the wastewater treatment plant, the excess is diverted to a combined sewage overflow (CSO) discharge point. There are no permitted CSO outfalls in the Oconee River Basin.

3.1.2 Regulated Stormwater Discharges

Discharges of stormwater authorized under a NPDES permit are considered a point source. Unlike other wastewater NPDES permits that establish end-of-pipe effluent limits, storm water NPDES permits establish best management practices (BMPs) and controls that are intended to reduce the quantity of pollutants that storm water picks up and carries into storm sewer systems during rainfall events “to the maximum extent practicable.” Currently, regulated stormwater discharges that may contain bacteria, consist of those associated with industrial activities and large, medium, and small municipal separate storm sewer systems (MS4s) that serve populations of 10,000 or more.

3.1.2.1 Industrial General Stormwater NPDES Permit

Storm water discharges associated with industrial activities are currently covered under the 2022 NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (GAR050000) also called the Industrial General Permit (IGP). This permit requires visual monitoring of storm water discharges, site inspections, implementation of BMPs, preparation of a Storm Water Pollution Prevention Plan (SWPPP), and annual reporting. The IGP requires that stormwater discharging into an impaired stream segment or within one linear mile upstream of, and within the same watershed as, any portion of an impaired stream segment identified as “not supporting” its designated use(s), must satisfy the requirements of Appendix C of the 2022 IGP, if the pollutant(s) of concern for which the impaired stream segment has been listed may be exposed to stormwater as a result of industrial activity at the site. If a facility is covered under Appendix C of the IGP, then benchmark monitoring for the pollutant(s) of concern is required. Delineations of both supporting and not supporting waterbodies are provided on the GA EPD website, and are available in ESRI ArcGIS shapefile format or in KMZ format for use in Google Earth. Interested parties may evaluate their proximity to not supporting waterbodies by utilizing these geospatial files.

Table 6: NPDES Facilities Discharging Fecal Coliform in the Oconee River Basin

Facility Name	NPDES Permit No.	Receiving Stream	303(d) Listed Segment(s)	Actual Discharge (2015–2020)		NPDES Permit Limits		Number of Spills[c]
				Avg. Monthly Flow (MGD)[a]	Avg. Monthly fecal coliform (#/100mL)[b]	Avg. Monthly Flow (MGD)	Avg. Monthly fecal coliform (#/100mL)	
West Laurens Middle/High School WPCP	GAG550156	Unnamed Tributary of Crooked Creek	Oconee River GAR030701021201	0.011 0.005-0.018	2.3 1.33-3.33	0.052	200	0
Monticello - Pearson Creek WPCP	GA0020141	Pearson Creek	Pearson Creek GAR030701011617	0.110 0.06-0.16	0.6 0-15.7	0.17	200	0
Monticello - White Oak Creek WPCP	GA0020150	Tributary to White Oak Creek	Tributary to White Oak Creek GAR030701011620	0.058 0.03-0.105	2.5 0-75	0.115	200	0
Dudley WPCP	GA0023957	Turkey Creek	Oconee River GAR030701021201	0.131 0.018-0.456	45.6 0-860	0.115	200	0
Dublin WPCP	GA0025569	Oconee River	Oconee River GAR030701021201	3.838 1.88-10.96	58.8 20-129	6.0	200	33
Rentz WPCP	GA0037630	Blue Water Creek	Oconee River GAR030701021201	0.049 0.01-0.11	59.6 0-200	0.12	200	0
Mansfield WPCP	GA0047759	Tributary to Pittman Branch	Tributary to Pittman Branch GAR030701011615	0.035 0.005-0.132	4.5 1-50.1	0.06	200	0
Dexter WPCP	GA0048682	Stitchihatchie Creek	Oconee River GAR030701021201	0.074 0.052-0.15	126.7 5-1200	0.075	200	0

Source: GA EPD – Discharge Monitoring Report (DMR data from ICIS-NPDES)

Notes: [a] - Values shown are the average of the monthly average flows reported in DMRs, followed by the monthly average ranges during the period.

[b] - Values shown are the annual average of the monthly geometric means and the monthly average ranges.

[c] - 2015-2020; From GAPDES self-reported spill monitoring system.

Table 7: NPDES Non-POTW Facilities without Bacteria Permit Limits that Discharge to 303(d) Listed Stream Segments in the Oconee River Basin

Facility Name	NPDES Permit No.	Receiving Stream	303(d) Listed Segment(s)
Imerys Clays Inc. - Deepstep Road Plant - Franklin Operations	GA0045934	Tributary to Peavy Branch – Outfall B-38	Town Creek GAR03070102020
		Tributary to Charlotte Gin Branch – Outfall B-33	Town Creek GAR03070102020
Thiele Kaolin Company - ICI Hancock County Mines	GA0050320[a]	Tributary to Peavy Branch – Outfall B-38	Town Creek GAR03070102020
Westrock Southeast, LLC	GA0032620	Oconee River	Oconee River GAR030701021201

[a] – Outfall B-38 was transferred from NPDES permit GA0045934 to NPDES permit GA0050320 in April 2022

3.1.2.2 MS4 NPDES Permits

The collection, conveyance, and discharge of diffuse storm water to local waterbodies by a public entity are regulated in Georgia by the NPDES MS4 permits. These MS4 permits have been issued under two phases. Phase I MS4 permits cover medium and large cities, and counties with populations over 100,000. Each individual Phase I MS4 permit requires 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. A program to monitor and control pollutants in storm water discharges from industrial facilities, construction sites, and highly visible pollutant sources that exist within the MS4 area must be implemented under the permit. Additionally, monitoring of not supporting streams, public education and involvement, post-construction storm water controls, low impact development, and annual reporting requirements must all be addressed by the permittee on an ongoing basis. As of 2022, fifty-seven (57) counties and municipalities are covered by Phase I MS4 permits in Georgia.

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 area with a residential population of at least 10,000 people and an overall population density of at least 1,000 people per square mile. As of 2022, Seventy-three (73) municipalities, thirty-five (35) counties, six (6) Department of Defense facilities, and the Georgia Department of Transportation (GDOT) are permitted under the Phase II storm water regulations in Georgia. All municipal Phase II permittees are authorized to discharge under Storm Water General Permit GAG610000. Department of Defense facilities are authorized to discharge under Storm Water General Permit GAG480000. GDOT owned or operated facilities are authorized to discharge under Storm Water General Permit GAR041000.

Under these general permits, each permittee must design and implement a SWMP that incorporates BMPs that focus on public education and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction storm water management, and pollution prevention in municipal operations. Urbanized areas include land uses identified as lawns, parks, and greenspace, as well as residential, commercial, industrial, and transportation facilities. Table 8 provides the Phase II counties or communities covered by MS4s Permits in the Oconee River Basin. There are ten (10) permitted MS4s that discharge into or upstream of a

stream segment not supporting its designated use for bacteria.

Table 8: Permitted MS4s in the Oconee River Basin

Permit No.	MS4 Permittee	MS4 Phase	Impaired Stream Watershed
GAS000118	Gwinnett County	Phase 1 Large	n/a
GAS000139	Dacula	Phase 1 Large	n/a
GAG610000	Athens-Clarke	Phase 2 >10,000	Anne Court Branch GAR030701010301, Little Bear Creek GAR030701010318
GAG610000	Barrow County	Phase 2 >10,000	Little Bear Creek GAR030701010318
GAG610000	Hall County	Phase 2 >10,000	Tributary 2 to Allen Creek GAR030701010108, Tributary 5 to Allen Creek GAR030701010115, Tributary 7 to Allen Creek GAR030701010101, Tributary 8 to Allen Creek GAR030701010102
GAG610000	Jackson County	Phase 2 >10,000	Little Bear Creek GAR030701010318
GAG610000	Jones County	Phase 2 >10,000	n/a
GAG610000	Madison County	Phase 2 >10,000	n/a
GAG610000	Newton County	Phase 2 >10,000	Tributary to Pittman Branch GAR030701011615
GAG610000	Oconee County	Phase 2 >10,000	Calls Creek GAR030701010317, Rose Creek GAR030701010603
GAG610000	Walton County	Phase 2 >10,000	Little Sandy Creek GAR030701010911
GAG610000	Auburn (Barrow Co.)	Phase 2 <10,000	n/a
GAG610000	Bogart (Oconee Co.)	Phase 2 <10,000	Little Bear Creek GAR030701010318
GAG610000	Braselton (Jackson Co.)	Phase 2 <10,000	n/a
GAG610000	Gainesville (Hall Co.)	Phase 2 >10,000	n/a
GAG610000	Hoschton (Jackson Co.)	Phase 2 <10,000	n/a
GAG610000	Watkinsville (Oconee Co.)	Phase 2 <10,000	Calls Creek GAR030701010317
GAG610000	Winterville (Clarke Co.)	Phase 2 <10,000	n/a
GAR041000	Georgia Department of Transportation	Phase 2	All impaired segments related to other Phase 2 permittees in this table.

Source: Nonpoint Source Program, GA DNR, 2022

For those listed segments whose contributing watersheds intersect with the jurisdiction of MS4 permit holders in the Ocmulgee River Basin, Table 9 provides the listed segment, total contributing watershed area and percentage of the watershed area that consists of urban land use types. Urbanized areas include land uses identified as residential, commercial, industrial, and transportation, as well as lawns, parks, and greenspace. These areas are quantified using the land use categories of low, medium, and high intensity developed, and other grasses as presented in Table 4.

Table 9: Urban Land Use Percentage for Listed Segments with MS4 Permit Contributions

Stream Segment	Location	Reach AUID	Total Watershed Area (acres)	Urban Land Use Percentage
Anne Court Branch	Headwaters to Middle Oconee River	GAR030701010301	455.0	80%
Calls Creek	Headwaters to Lampkin Branch	GAR030701010317	2813.1	21%
Greenbrier Creek	Salem Scull Shoals Road to Lake Oconee	GAR030701010704	17768.2	0.1%
Little Bear Creek	Headwaters to Bear Creek	GAR030701010318	3888.6	8%
Tributary 2 to Allen Creek	Gainesville – Downstream Old Landfill	GAR030701010108	485.7	4%
Tributary 5 to Allen Creek	Gainesville	GAR030701010115	311.4	38%
Tributary 8 to Allen Creek	Gainesville	GAR030701010102	769.3	3%

3.1.3 Concentrated Animal Feeding Operations

Animal feeding operations (AFOs) are agricultural operations where animals are kept and raised in confined situations. AFOs that meet the regulatory definition of a concentrated animal feeding operation (CAFO) are regulated under the NPDES permitting program. The NPDES program regulates the discharge of pollutants from point sources to waters of the state. From 1999 through 2001, Georgia adopted rules for permitting swine and non-swine liquid manure animal feeding operations (AFOs). Georgia rules required medium size AFOs with more than 300 animal units (AU), but less than 1,000 AU, to apply for a non-discharge state land application system (LAS) waste disposal permit. Large operations with more than 1000 AU were required to apply for an NPDES permit (also non-discharge) as a CAFO. The USEPA CAFO regulations were successfully appealed in 2005. They were revised to comply with the court's decision that NPDES permits only be required for actual discharges. Georgia's rules were amended on August 7, 2012, to reflect the USEPA revisions. The revised state rules authorize LAS permitting of medium and large size liquid manure AFOs unless they elect to obtain an NPDES permit. There are no known liquid manure CAFO located in the watersheds of the listed segments in the Oconee River Basin that have NPDES or land application permits. There is one known liquid manure CAFO located in the watersheds of the listed segments that was previously permitted under Georgia rules that no longer meets the size that is required for permit coverage.

In 2002, the USEPA promulgated expanded NPDES permit regulations for CAFOs that added dry

manure poultry operations larger than 125,000 broilers or 82,000 layers. In accordance with the Georgia rule amendment discussed above, the general permit covering these facilities has been terminated and they are no longer covered under any permit. Georgia is consistently among the top three states in the U.S. in terms of poultry operations. Most poultry farms are dry manure operations where the manure is stored for a time and then land applied. Freshly stored litter can be a nonpoint source of bacteria. However, land-applied litter previously stored for an extended length of time typically exhibits very low bacteria levels. Table 10 presents the current swine and non-swine (primarily dairies) CAFOs located in the Oconee River Basin and indicates those that may impact the listed streams**.**

Table 10: Permitted CAFOs in the Oconee River Basin

Name	Permit No.	County	Animal Type	Total No. of Animals Units	Impaired Stream Watershed
R.A. Moore Dairy, Inc	GAG920049	Greene	Dairy	300 to 1000 AU	n/a
T & W Farms Inc. #2	GAG920034[a]	Jasper	Dairy	300 to 1000 AU	Pearson Creek GAR030701011617 Pearson Creek GAR030701011619
Douglas Chambers Dairy Inc.	GAG920012	Jones	Dairy	300 to 1000 AU	n/a
Taylor Farms	GAG940037	Montgomery	Swine	> 1000 AU	n/a
Godfrey Dairy, Inc.	GAG940020	Morgan	Dairy	> 1000 AU	n/a
W Dairy LLC	GAG940015	Morgan	Dairy	> 1000 AU	n/a
B&B Dairy Inc	GAG920046	Morgan	Dairy	300 to 1000 AU	n/a
Day Farms, Inc.	GAG920061	Oglethorpe	Swine	300 to 1000 AU	n/a
Double Bridges Swine Center	GAG920015	Oglethorpe	Swine	300 to 1000 AU	n/a
Kakega LLC	GAG920018	Oglethorpe	Swine	300 to 1000 AU	n/a
Rose Acre Farms - Oconee Egg Farm	GAG940043	Putnam	Layer	> 1000 AU	n/a
Sunrise Dairy, Inc	GAG940021	Putnam	Dairy	> 1000 AU	n/a
T & W Farms Inc. #1	GAG920033	Putnam	Dairy	300 to 1000 AU	n/a
Green Glades Farm Inc.	GAG920030	Putnam	Dairy	300 to 1000 AU	n/a
Key's Dairy	GAG920068	Putnam	Dairy	300 to 1000 AU	n/a
Eatonton Dairy Farm	GAG920077	Putnam	Dairy	300 to 1000 AU	n/a
Boozer Farm	GAG930014	Walton	Layer	> 1000 AU	n/a
Youngs Dairy	GAG920031	Washington	Dairy	300 to 1000 AU	n/a

Source: Georgia Pollutant Discharge Elimination System, GA EPD, 2022
a – Permit GAG920034 terminated on 4/15/2019. AFO remains in operation, but below the number of animals required for permit coverage.

3.2 Nonpoint Source Assessment

In general, nonpoint sources cannot be identified as entering a waterbody through a discrete conveyance at a single location. Typical nonpoint sources of bacteria include:

- Wildlife
- Agricultural Livestock

  - Animal grazing
  - Animal access to streams
  - Application of manure to pastureland and cropland
- Urban Development
  - Leaking sanitary sewer lines
  - Leaking septic systems
  - Land Application Systems
  - Landfills

In urban areas, a large portion of stormwater runoff may be collected in storm sewer systems and discharged through distinct outlet structures. For large urban areas, these storm sewer discharge points may be regulated as described in Section 3.1.2.

3.2.1 Wildlife

The significance of wildlife as a source of bacteria in streams varies considerably depending on the animal species present in the watershed. Based on information provided by the Wildlife Resources Division (WRD) of GA DNR, the greatest wildlife sources of bacteria are the animals that spend a large portion of their time in or around aquatic habitats. Of these, waterfowl, especially ducks and geese, are considered to be the most significant source, because when present, they are typically found in large numbers on the water surface. Other animals regularly found around aquatic environments include racoons, beavers, muskrats, and to a lesser extent, river otters and minks. Recently, rapidly expanding feral swine populations have become a substantial presence in the floodplain areas of the major rivers in Georgia.

White-tailed deer populations are also abundant throughout the Oconee River Basin. Bacteria contributions to waterbodies from deer are generally considered to be less significant than that of waterfowl, racoons, and beavers. This is because a greater portion of their time is spent in terrestrial habitats. This also holds true for other terrestrial mammals such as squirrels and rabbits, and for terrestrial birds (GA WRD, 2007). However, feces deposited on the land surface can result in the introduction of bacteria to streams during runoff events. Between storm events, considerable decomposition of the fecal matter might occur, resulting in a decrease in the associated bacteria numbers.

3.2.2 Agricultural Livestock

Agricultural livestock are a potential source of bacteria to streams in the Oconee River Basin. The animals grazing on pastureland deposit their feces onto land surfaces, where it can then be transported during storm events to nearby streams. Animal access to pastureland varies monthly, resulting in varying bacteria loading rates throughout the year. Beef cattle spend all their time in pastures, while dairy cattle and hogs are periodically confined. In addition, agricultural livestock will often have direct access to streams that pass through their pastures and can thus impact water quality in a more direct manner (USDA, 2002).

Commercial chickens are raised indoors, and their litter is periodically disposed of. The litter can be aged or composted. This results in a decomposition of the litter into a soil amendment that can be used as a fertilizer. The stockpiled manure should be kept in a sheltered area. Proper composting should generate temperatures of 140°F to 160°F, which destroys bacteria. Aging the manure and litter reduces populations of microbes by providing unfavorable growing conditions causing the bacteria to gradually die off due to changes in moisture content and temperature.

Table 11 provides the estimated number of beef cattle, dairy cattle, goats, horses, swine, sheep, and chickens reported by county.

Table 11: Estimated Agricultural Livestock Populations in Counties Containing the 303(d) Listed Segment Watershed in the Oconee River Basin

County	Livestock								
	Beef Cattle	Dairy Cattle	Swine	Sheep	Horses	Goats	Chickens		
							Broilers	Layers	Pullets
Baldwin	6,654	-	300	20	250	50	218,368	-	-
Barrow	8,265	-	36	111	496	655	3,626,551	-	-
Bleckley	2,951	-	-	-	300	250	545,921	-	-
Clarke	403	-	-	25	184	50	54,592	-	-
Dodge	5,912	-	301	50	150	450	1,965,314	38,104	-
Greene	9,429	500	-	300	325	400	8,629,913	75,415	-
Gwinnett	-	-	-	32	276	380	-	-	-
Hall	9,547	540	53	237	400	697	20,790,841	414,054	364,382
Hancock	2,615	165	-	40	220	550	-	-	-
Jackson	30,930	-	100	400	700	1,601	31,968,019	1,130,309	471,461
Jasper	14,734	1,250	125	250	2,600	1,001	436,736	851,393	229,770
Johnson	13,800	-	194	600	55	1,600	-	-	-
Jones	8,160	460	50	130	100	600	1,419,394	-	-
Laurens	9,982	100	200	300	250	1,001	-	97,378	42,091
Madison	23,495	200	200	850	420	3,502	74,812,961	777,005	325,741
Montgomery	2,249	-	-	-	55	-	-	132,307	-
Morgan	18,134	4,200	315	400	3,275	800	13,300,810	15,215	34,632
Newton	13,086	-	-	75	1,850	325	-	-	-
Oconee	9,211	-	-	-	-	-	7,842,150	-	13,320
Oglethorpe	20,838	1,200	140,675	500	1,000	1,001	56,845,076	187,545	268,931
Putnam	6,381	4,100	247	100	435	160	-	1,053,812	-
Treutlen	1,410	-	-	-	-	220	-	-	-
Twiggs	3,138	-	-	-	121	250	-	-	-
Walton	12,080	-	100	-	1,544	-	4,983,163	-	-
Washington	7,800	700	100	600	55	1,600	-	-	-
Wheeler	4,912	-	175	5	210	140	-	-	-
Wilkinson	1,186	-	-	-	60	100	884,391	-	-

Source: Center for Agribusiness and Economic Development, UGA 2022

3.2.3 Urban Development

Bacteria from urban areas are attributable to multiple sources, including: domestic animals, leaks and overflows from sanitary sewer systems, illicit discharges, leaking septic systems, runoff from improper disposal of waste materials, and leachate from both operational and closed landfills.

Urban runoff can contain high concentrations of bacteria from domestic animals and urban

wildlife. Bacteria enter streams by direct wash off from the land surface, or the runoff may be diverted to a stormwater collection system and discharged through a discrete outlet structure. For large, medium, and small urban areas (populations greater than 10,000), the stormwater outlets are regulated under MS4 permits (see Section 3.1.2). For smaller urban areas, the stormwater discharge outlets currently remain unregulated.

In addition to urban animal sources of bacteria, there may be illicit connections to the storm sewer system. As part of the MS4 permitting program, municipalities are required to conduct dry-weather monitoring to identify and then eliminate these illicit discharges, but this may not occur in unpermitted storm sewer systems. Bacteria may also enter streams from leaky sewer pipes, or during storm events when inflow and infiltration can cause sewer overflows.

3.2.3.1 Leaking Septic Systems

A portion of the bacteria contributions in the Oconee River Basin may be attributed to failure of septic systems and illicit discharges of raw sewage. Table 12 below presents the number of septic systems existing at the end of 2015 and the number existing at the end of 2020in counties in the Oconee River Basin. These data are based on data provided by the Georgia Department of Public Health and information obtained from the U.S. Census. In addition, an estimate of the number of septic systems installed and repaired during the period from 2015 through 2020 is given. These data show an increase in the number of septic systems in all counties. Often, this reflects population increases outpacing the expansion of sewage collection systems.

Table 12: Estimated Number of Septic Systems in Counties within the Oconee River Basin

County	Existing Septic Systems (2015)	Existing Septic Systems (2020)	Number of Septic Systems Installed (2015 to 2020)	Number of Septic Systems Repaired (2015 to 2020)
Baldwin	10,681	11,123	442	118
Barrow	25,283	26,467	1,184	542
Bleckley	3,738	3,843	105	60
Clarke	10,695	10,885	190	372
Dodge	7,437	7,677	240	54
Greene	5,401	5,786	385	32
Gwinnett	65,405	66,333	928	3,005
Hall	49,212	51,325	2,113	2,522
Hancock	4,799	4,955	156	33
Jackson	22,070	23,546	1,476	415
Jasper	5,802	6,181	379	109
Johnson	3,807	3,951	144	65
Jones	9,903	10,131	228	297
Laurens	15,569	16,354	785	536
Madison	13,737	14,442	705	205
Montgomery	3,031	3,199	168	90
Morgan	7,065	7,813	748	265
Newton	27,404	28,335	931	428
Oconee	12,989	14,222	1,233	360

County	Existing Septic Systems (2015)	Existing Septic Systems (2020)	Number of Septic Systems Installed (2015 to 2020)	Number of Septic Systems Repaired (2015 to 2020)
Oglethorpe	7,141	7,616	475	44
Putnam	10,627	11,245	618	61
Treutlen	2,330	2,441	111	65
Twiggs	4,057	4,140	83	32
Walton	24,143	25,947	1,804	666
Washington	6,458	6,649	191	199
Wheeler	2,416	2,520	104	52
Wilkinson	4,190	4,326	136	30

Source: The Georgia Dept. of Public Health, Environmental Health Section, 2022

3.2.3.2 Land Application Systems

Some communities and industries use land treatment systems for wastewater disposal. These facilities are required through land application system (LAS) permits to dispose of their treated wastewater by land application, and to operate as non-discharging systems that do not contribute wastewater effluent runoff to surface waters. However, sometimes the soil's percolation rate is exceeded when applying the wastewater, or encountering excess precipitation, resulting in runoff. This runoff could contribute bacteria to nearby surface waters. Runoff of storm water might also carry surface residual containing bacteria Listed in Table 13 below are the LASs in the Oconee River Basin and the three LASs that could potentially impact the stream segments in this TMDL are identified.

Table 13: Permitted Land Application Systems in the Oconee River Basin

LAS Name	Permit No.	County	Type	Flow (MGD)	Impaired Stream Watershed
Bethlehem Elementary School WPCP	GAJ030942	Barrow	Municipal	0.011	n/a
Stephan Company	GAJ020264	Barrow	Industrial	n/a	n/a
Harrison Poultry, Inc.	GAJ010532	Barrow	Industrial	1.23	n/a
Barrow County - Tanners Bridge WPCP	GAJ020271	Barrow	Municipal	0.5	n/a
University of Georgia - Composting Facility	GAJ020191	Clarke	Municipal	0.01	n/a
Piedmont Water Company - Reynolds Plantation WRF	GAJ030897	Greene	Municipal	0.15	n/a
Piedmont Water Company - Carey Station WRF	GAJ030883	Greene	Municipal		n/a
Towler Village WPCP	GAJ030809	Gwinnett	Municipal	0.005	n/a
Myers Elementary School WPCP	GAJ040026	Hall	Municipal	0.00376	n/a
Pilgrim's Pride Corporation	GAJ010518	Hall	Industrial	0.022	n/a

LAS Name	Permit No.	County	Type	Flow (MGD)	Impaired Stream Watershed
Sparta WPCP	GAJ040002	Hancock	Municipal	0.8	n/a
Jefferson - Central City WPCP	GAJ020006	Jackson	Municipal	0.38	n/a
Jefferson - I85 North WPCP	GAJ020230	Jackson	Municipal	0.287	n/a
Wayne Farms LLC - Pendergrass Fresh Plant	GAJ010546	Jackson	Industrial	0.547	n/a
East Dublin WPCP	GAJ020270	Laurens	Municipal	0.75	Oconee River GAR030701021201
Darling Ingredients Inc.	GAJ010491	Laurens	Industrial	0.125	Oconee River GAR030701021201
Morgan County - Madison Lakes WPCP	GAJ030965	Morgan	Municipal	0.1	n/a
Oconee County -Rocky Branch WPCP	GAJ020176	Oconee	Municipal	0.4	n/a
High Shoals Health & Rehabilitation	GAJ030928	Oconee	Municipal	0.012	n/a
Dove Creek Elementary School WPCP	GAJ040036	Oconee	Municipal	0.0102	n/a
Piedmont Water Company - Great Waters at Reynolds Plantation WRF	GAJ020072	Putnam	Municipal	0.07	n/a
Piedmont Water Company - Oconee Crossing WRF	GAJ030632	Putnam	Municipal	0.500	n/a
Jeffersonville WPCP	GAJ020050	Twiggs	Municipal	0.7	Oconee River GAR030701021201
Thiele Kaolin Co. - Dukes Mine	GAJ040039	Washington	Industrial	0.172	n/a
Glenwood WPCP	GAJ020301	Wheeler	Municipal	0.10	n/a
McIntyre WPCP	GAJ040024	Wilkinson	Municipal	0.3	n/a

Source: Georgia Pollutant Discharge Elimination System, GA EPD, Atlanta, Georgia, 2022

3.2.3.3 Landfills

Leachate from landfills may contain bacteria that could at some point reach surface waters. Sanitary (or municipal landfills) are the most likely to serve as a source of bacteria. These types of landfills receive household wastes, animal manure, offal, hatchery and poultry processing plant wastes, dead animals, and other types of wastes. Older sanitary landfills were not lined, and most have been closed. Those that remain active and have not been lined operate as construction/demolition landfills. Currently active sanitary landfills are lined and have leachate collection systems. All landfills, excluding inert landfills, are now required to install environmental monitoring systems for groundwater and methane sampling. Table 14 provides the landfills located in the Oconee River Basin.

Table 14: Permitted Landfills in the Oconee River Basin

Facility Name	Permit Number	County	Interest Type	Operating Status
Baldwin Co-Attaway Recycling, LLC [A & R] Inert Landfill	PBR-005-24IL	Baldwin	SW- Inert Landfill	Operating
Baldwin Co-Attaway Transfer Station	PBR-005-28TS	Baldwin	SW- Transfer Station	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Baldwin Co-Sinclair Disposal Services	PBR-005-12TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners	PBR-005-16TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #1	PBR-005-13TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #3	PBR-005-15TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #3	PBR-005-15TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #3	PBR-005-15TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #3	PBR-005-15TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Commissioners TS #3	PBR-005-22TS	Baldwin	SW- Transfer Station	Operating
Baldwin County Board Of Education	PBR-005-23IL	Baldwin	SW- Inert Landfill	In-Closure
Baldwin County Landfill	005-017D(SL)	Baldwin	SW- Municipal Solid Waste Landfill	Closed/PCC
Baldwin County Landfill	005-016D(SL)	Baldwin	SW- Municipal Solid Waste Landfill	Closed/PCC
Baldwin County Public Works Headquarters	PBR-005-19IL	Baldwin	SW- Inert Landfill	Operating
Baldwin County Road Department Inert Landfill	PBR-005-08IL	Baldwin	SW- Inert Landfill	Operating
Baldwin County Water Department Inert Landfill	PBR-005-09IL	Baldwin	SW- Inert Landfill	Operating
Bobby Dixon Inert Landfill	PBR-005-07IL	Baldwin	SW- Inert Landfill	Operating
Cecil L. Ogden, Sr./Dba Commercial Landfill Irwinton Road Inert	PBR-005-01IL	Baldwin	SW- Inert Landfill	Operating
Cecil Ogden Inert Landfill	PBR-005-06IL	Baldwin	SW- Inert Landfill	Operating
Central State Hospital	PBR-005-03OSTT	Baldwin	SW- Other-PBR	Operating
Central State Hospital (SL)	005-015D(L)	Baldwin	SW- Construction & Demolition Landfill	Closed/PCC
Central State Hospital (SL)	005-004D(SL)	Baldwin	SW- Municipal Solid Waste Landfill	Archived
City Of Milledgeville	PBR-005-04COL	Baldwin	SW- Collection	Operating
D & C Refuse - Woodbine (SL)	005-005D(SL)	Baldwin	SW- Municipal Solid Waste Landfill	Archived
Georgia College And State University (Plant Operations)	PBR-005-17IL	Baldwin	SW- Inert Landfill	Closed
Knox-Rivers Construction Company Inert Landfill	PBR-005-10IL	Baldwin	SW- Inert Landfill	Operating
Oconee Regional Hospital	PBR-005-02OSTT	Baldwin	SW- Other-PBR	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Sinclair Disposal Service	PBR-005-05COL	Baldwin	SW- Collection	Operating
Sinclair Disposal Services	PBR-005-11COL	Baldwin	SW- Collection	Operating
211 Waste Disposal	PBR-007-13TS	Barrow	SW- Transfer Station	Operating
Barrow Co - Finch Rd Ph 2+3 (SL)	007-016D(SL)	Barrow	SW- Municipal Solid Waste Landfill	Closed/PCC
Barrow Medical Center	PBR-007-06OSTT	Barrow	SW- Other-PBR	Closed
City Of Winder Miles Patrick Road Inert LF	PBR-007-02IL	Barrow	SW- Inert Landfill	Closed
City Of Winder-Rockwell Church Rd Inert Landfill	PBR-007-15IL	Barrow	SW- Inert Landfill	Closed
Cowart Mulch Products, Inc.	PBR-007-20COMP	Barrow	SW- Other-PBR	Operating
D & D Environmental	PBR-007-09COL	Barrow	SW- Collection	Operating
Exclusive Services & Pallet Co., Inc	PBR-007-10OSTT	Barrow	SW- Other-PBR	Operating
Georgia Waste Service, Collection	PBR-007-03COL	Barrow	SW- Collection	Operating
Harold Maddox Inert Landfill	PBR-007-11IL	Barrow	SW- Inert Landfill	Operating
Hudgins Properties, Inc. Parks Mill Rd. Inert LF	PBR-007-01IL	Barrow	SW- Inert Landfill	Operating
Ledbetter Grading Dba 211 Waste Disposal	PBR-007-16COL	Barrow	SW- Collection	Operating
Mid-American Waste Systems,Inc.D/B/A/Speedway Was.Dis.	PBR-007-07COL	Barrow	SW- Collection	Operating
Patrick Inert Landfill	PBR-007-05IL	Barrow	SW- Inert Landfill	Permit Applied For
Patrick Inert Landfill	007-021D(IN)	Barrow	SW- Inert Landfill	Operating
Pro-Disposal, LLC	PBR-007-19TS	Barrow	SW- Transfer Station	Operating
Pro-Disposal, LLC	PBR-007-19COL-BIO	Barrow	SW- Collection	Operating
Pro-Works	PBR-007-14COL	Barrow	SW- Collection	Operating
Republic Services - Speedway - SR324 Site 1 (SL)	007-018D(SL)	Barrow	SW- Municipal Solid Waste Landfill	Closed/PCC
Republic Waste - Oak Grove SR324	007-020D(SL)	Barrow	SW- Municipal Solid Waste Landfill	Operating
Tommy F. Ledbetter	PBR-007-04IL	Barrow	SW- Inert Landfill	Operating
Bleckley Co - Cochran - SR26 (SL)	012-004D(SL)	Bleckley	SW- Municipal Solid Waste Landfill	Closed/PCC
Bleckley Memorial Hospital	PBR-012-03COL	Bleckley	SW- Collection	Operating
City Of Cochran Inert Landfill	PBR-012-01IL	Bleckley	SW- Inert Landfill	Closed
Vandell And Jean Holland Inert Landfill	PBR-012-02IL	Bleckley	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
600 Pulaski Street	PBR-029-27IL	Clarke	SW- Inert Landfill	Operating
Aaa Sanitation, Inc	PBR-029-41COL	Clarke	SW- Collection	Operating
American Refuse Systems, Inc. DBA Choice Waste Systems	PBR-029-08COL	Clarke	SW- Collection	Operating
A-Peachtree Portables, Inc.	PBR-029-31COL	Clarke	SW- Collection	Operating
Armour Industrial Services, Inc.	PBR-029-28COL	Clarke	SW- Collection	Operating
Athens Hull Road Transfer Station	PBR-029-45TS	Clarke	SW- Transfer Station	Operating
Athens-Clarke County Public Works Department - Cleveland Ave	PBR-029-60IL	Clarke	SW- Inert Landfill	Closed
Athens-Clarke County Public Works Dept. Boulevard Inert LF	PBR-029-02IL	Clarke	SW- Inert Landfill	Closed
Athens-Clarke County Public Works Jail Road Inert LF	PBR-029-04IL	Clarke	SW- Inert Landfill	Closed
Bulldog Waste Service, Inc.	PBR-029-32COL	Clarke	SW- Collection	Operating
Bulldog Waste Services, Inc	PBR-029-40COL	Clarke	SW- Collection	Operating
Clarke Co - Athens Dunlap Rd (SL) Ph 1	029-004D(SL)	Clarke	SW- Municipal Solid Waste Landfill	Closed/PCC
Clarke Co - Athens Dunlap Road Materials Recovery Facility	029-013P(RM)	Clarke	SW- Material Recovery Facility	Operating
Clarke Co-Athens Paradise Blvd Transfer Station (Republic Services Of Ga) LLP	PBR-029-46-A-TS	Clarke	SW- Transfer Station	Operating
Clarke Co-Athens Transfer Station	PBR-029-46TS	Clarke	SW- Transfer Station	Operating
Clarke Co-J G Beacham Water Treatment Plant	PBR-029-54OSP	Clarke	SW- Other-PBR	Operating
Coggins - Trade St (L)	029-009D(L)	Clarke	SW- Construction & Demolition Landfill	Archived
Department Of Avian Medicine	PBR-029-12COL	Clarke	SW- Collection	Operating
ELCO Morris & Grandson	PBR-029-46COL	Clarke	SW- Collection	Operating
Hardeman-Hobson Waste Services LLC	PBR-029-44COL	Clarke	SW- Collection	Operating
Heritage Amusement Company	PBR-029-05IL	Clarke	SW- Inert Landfill	Operating
Isaiah Hunter, III Will Hunter Road Inert LF	PBR-029-03IL	Clarke	SW- Inert Landfill	Operating
Jody Reynold's Trucking	PBR-029-36COL	Clarke	SW- Collection	Operating
Johnson & Son	PBR-029-39COL	Clarke	SW- Collection	Operating
Johnson And Sons	PBR-029-039L	Clarke	SW- Collection	Operating
Let Us Compost	PBR-029-58COL	Clarke	SW- Collection	Operating
Let Us Compost Transfer Station	PBR-029-58TS	Clarke	SW- Transfer Station	Operating
Mike Harris Trucking, Inc	PBR-029-42COL	Clarke	SW- Collection	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
MKM Enterprises, Inc.	PBR-029-37COL	Clarke	SW- Collection	Operating
Noramco Inc	029-011P(INC)	Clarke	SW- Thermal Treatment	Released
Personal Touch Trash Collection	PBR-029-43COL	Clarke	SW- Collection	Operating
Rapid-Rooter Sewer & Drain Service, Inc.	PBR-029-29COL	Clarke	SW- Collection	Operating
Rapid-Rooter, Inc.	PBR-029-30COL	Clarke	SW- Collection	Operating
Rapin-Rooter Sewer & Drain Service, Inc.	PBR-029-23COL	Clarke	SW- Collection	Operating
Richard B. Russell Campus - U.S. National Poultry Research Center	PBR-029-59OSTT	Clarke	SW- Other-PBR	Operating
Riverbend Road Inert Landfill	PBR-029-24IL	Clarke	SW- Inert Landfill	Closed
Russell Research Center	PBR-029-22OSP	Clarke	SW- Other-PBR	Operating
Russell Research Center, USDA	PBR-029-10COL	Clarke	SW- Collection	Operating
Russell Research Center, USDA	PBR-029-09OSTT	Clarke	SW- Other-PBR	Operating
Service Ace	PBR-029-037COL	Clarke	SW- Collection	Operating
Southeast Poultry Research Laboratory	PBR-029-25OSTT	Clarke	SW- Other-PBR	Operating
St. Mary's Hospital Care System	PBR-029-06OSTT	Clarke	SW- Other-PBR	Closed
Sterling Sanitation, Inc.	PBR-029-33 COL	Clarke	SW- Collection	Operating
Toxicology & Mycotoxicology Research Unit	PBR-029-18OSTT	Clarke	SW- Other-PBR	Operating
UGA Athens Veterinary Diagnostic Laboratory	PBR-029-56OSTT	Clarke	SW- Other-PBR	Operating
UGA Bioconversion Research And Education Facility	PBR-029-26OSP	Clarke	SW- Other-PBR	Operating
UGA, College Of Veterinary Medicine	PBR-029-17COL	Clarke	SW- Collection	Operating
University Of Ga. Physical Plant	PBR-029-35IL	Clarke	SW- Inert Landfill	Closed
University Of Georgia Physical Plant Inert Landfill	PBR-029-07IL	Clarke	SW- Inert Landfill	Operating
University Of Ga Physical Plant College Station Rd. Inert LF Ne	PBR-029-01IL	Clarke	SW- Inert Landfill	Closed
Waste Pro	PBR-029-34COL	Clarke	SW- Collection	Operating
Waste Pro	PBR-029-38COL	Clarke	SW- Collection	Operating
Dodge Co - Bay Springs Church Rd (SL)	045-005D(SL)	Dodge	SW- Municipal Solid Waste Landfill	Archived
Dodge Co - Cr 274 (Dodge Ave Eastman) (SL)	045-007D(SL)	Dodge	SW- Municipal Solid Waste Landfill	Closed/PCC
Dodge County-Us341 Inert LF	PBR-045-02IL	Dodge	SW- Inert Landfill	Operating
Mid-State Waste Management Collection Operation	PBR-045-03COL	Dodge	SW- Collection	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Rhine - Mill Creek (L)	045-006D(L)	Dodge	SW- Construction & Demolition Landfill	Archived
Sylvan Hardwoods, SR341 N, PISWDF		Dodge	SW- Private Industrial Landfill	
Town Of Chester-Rodgers Avenue Inert Landfill	PBR-045-01IL	Dodge	SW- Inert Landfill	Closed
City Of Union Point	PBR-066-07IL	Greene	SW- Inert Landfill	Operating
Environmental Jetvac, LLC	PBR-066-09COL	Greene	SW- Collection	Operating
Greene Co - Us 278 W #2 Ph 1 (SL)	066-007D(SL)	Greene	SW- Municipal Solid Waste Landfill	Closed/PCC
Greene Co - Us 278 W #2 Ph 2 (SL)	066-008D(SL)	Greene	SW- Municipal Solid Waste Landfill	Closed/PCC
Hilltop Borrow Pit	PBR-066-05IL	Greene	SW- Inert Landfill	Operating
Hilltop Borrow Pit	PBR-066-06IL	Greene	SW- Inert Landfill	Operating
Oconee Sand & Gravel Inert Landfill	PBR-066-08IL	Greene	SW- Inert Landfill	Operating
Paul J. Boswell, Jr. Inert Landfill	PBR-066-02IL	Greene	SW- Inert Landfill	Operating
Quail International, Inc. Osp Composting	PBR-066-04OSP	Greene	SW- Other-PBR	Operating
Roper Construction Company Inert Landfill	PBR-066-03IL	Greene	SW- Inert Landfill	Closed
Wellington Leisure Products, Inc. Inert LF	PBR-066-01IL	Greene	SW- Inert Landfill	Operating
Appalachee Farms, L.L.C., By Brooksland, Inc.	PBR-067-690OSP	Gwinnett	SW- Other-PBR	Operating
Astin-Russell Landscaping Langford Drive Inert LF	PBR-067-005IL	Gwinnett	SW- Inert Landfill	Operating
B J Landfill/Waste Mgmt	067-027D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Barber Homes, Inc. Inert Landfill	PBR-067-250IL	Gwinnett	SW- Inert Landfill	Closed
Bd - Lee Labs	PBR-067-814OSTT	Gwinnett	SW- Other-PBR	Operating
Benny Grisham	PBR-067-651IL	Gwinnett	SW- Inert Landfill	Operating
Bill Browne Inert Landfill	PBR-067-044IL	Gwinnett	SW- Inert Landfill	Closed
Bill Browne Inert Landfill	PBR-067-046IL	Gwinnett	SW- Inert Landfill	Closed
Bill Browne Inert Landfill	PBR-067-051IL	Gwinnett	SW- Inert Landfill	Closed
Billy R. Seabolt Sycamore Road Inert LF	PBR-067-008IL	Gwinnett	SW- Inert Landfill	Operating
Blusky Restoration Contractors, LLC	PBR-067-808TS	Gwinnett	SW- Transfer Station	Operating
Blusky Restoraton Contractors, LLC	PBR-067-808COL-BIO	Gwinnett	SW- Collection	Operating
Buford - McEver Rd Ph 1 (SL)	067-008D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC

Facility Name	Permit Number	County	Interest Type	Operating Status
Buford - Peachtree Ind Blvd Ph 2 (SL)	067-030D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Buford - Tuggle Greer Rd (L)	067-019D(L)	Gwinnett	SW- Construction & Demolition Landfill	Closed/PCC
Button Gwinnett - Arnold Rd Ph 1 (SL)	067-021D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Button Gwinnett Landfill	067-037D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
C.A. Mueller Developers, Inc. Inert Landfill	PBR-067-077IL	Gwinnett	SW- Inert Landfill	Operating
Cdc Lawrenceville Campus EPA Id # Gar000016709	PBR-067-774OSTT	Gwinnett	SW- Other-PBR	Operating
Cdc Lawrenceville Campus, EPA Id # Gar00001670914679	PBR-067-773OSTT	Gwinnett	SW- Other-PBR	Operating
Charles E. Jones-Inert LF	PBR-067-006IL	Gwinnett	SW- Inert Landfill	Operating
Chattahoochee Run S/D, Lot 167c	PBR-067-538IL	Gwinnett	SW- Inert Landfill	Closed
Chattahoochee Run S/D, Lot 189c	PBR-067-539IL	Gwinnett	SW- Inert Landfill	Closed
Chattahoochee Run S/D, Lot 21a	PBR-067-533IL	Gwinnett	SW- Inert Landfill	Closed
Chattahoochee Run S/D, Lot 23a	PBR-067-534IL	Gwinnett	SW- Inert Landfill	Closed
Chattahoochee Run S/D, Lot 44a	PBR-067-535IL	Gwinnett	SW- Inert Landfill	Closed
Chattahoochee Run S/D, Lot 92b	PBR-067-536IL	Gwinnett	SW- Inert Landfill	Closed
College Hunks Hauling Junk & Moving	PBR-067-810COL	Gwinnett	SW- Collection	Operating
Countryside Investments, Inc. Inert Landfill	PBR-067-234IL	Gwinnett	SW- Inert Landfill	Operating
D. Gurley Homes, Inc. Inert Landfill	PBR-067-165IL	Gwinnett	SW- Inert Landfill	Operating
David Boland Inert Landfill	PBR-067-205IL	Gwinnett	SW- Inert Landfill	Operating
Davis Croy Inert Landfill	PBR-067-135IL	Gwinnett	SW- Inert Landfill	Operating
Detail Home Inc.	PBR-067-167IL	Gwinnett	SW- Inert Landfill	Operating
Detail Home Inc. Inert Landfill	PBR-067-169IL	Gwinnett	SW- Inert Landfill	Operating
Disposal Solutions L.L.C.	067-038P	Gwinnett	SW-Liquid Solidification Facility	Operating
Diversified Shelter Group	PBR-067-489OSP	Gwinnett	SW- Other-PBR	Operating
Doug Hinton Doug Hinton	PBR-067-162IL	Gwinnett	SW- Inert Landfill	Operating
E.R. Snell Contractor, Inc.	PBR-067-040IL	Gwinnett	SW- Inert Landfill	Operating
Eastside Hospital-Isolyser	PBR-067-262OSP	Gwinnett	SW- Other-PBR	Operating
Emory Eastside Medical Center	PBR-067-001OSTT	Gwinnett	SW- Other-PBR	Closed
Finlon Grading	PBR-067-023IL	Gwinnett	SW- Inert Landfill	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Frank Chandler Inert Landfill	PBR-067-178IL	Gwinnett	SW- Inert Landfill	Operating
Frank Tate Inert Landfill	PBR-067-206IL	Gwinnett	SW- Inert Landfill	Operating
Gables Residential	PBR-067-759OSP	Gwinnett	SW- Other-PBR	Operating
Gables Residential	PBR-067-757IL	Gwinnett	SW- Inert Landfill	Operating
Gdot - Old Norcross Road Property	PBR-067-756IL	Gwinnett	SW- Inert Landfill	Operating
Georgia Moulding Corp.	PBR-067-014IL	Gwinnett	SW- Inert Landfill	Closed
Gwinnett Co - Yellow River Water Reclamation Faciity Inert Landfills	PBR-067-801IL	Gwinnett	SW- Inert Landfill	Closed
Gwinnett Co - Yellow River Water Reclamation Faciity Inert Landfills	PBR-067-801IL	Gwinnett	SW- Inert Landfill	Closed
Gwinnett Co- Beaver Ruin Water Reclamation Facility	PBR-067-802IL	Gwinnett	SW- Inert Landfill	Closed
Gwinnett Co. Board Of Education Inert Landfill	PBR-067-269IL	Gwinnett	SW- Inert Landfill	In-Closure
Gwinnett Co. Board Of Education Inert Landfill	PBR-067-268IL	Gwinnett	SW- Inert Landfill	In-Closure
Gwinnett County Construction	067-024D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Gwinnett Hospital System-Isolyser Osp	PBR-067-261OSP	Gwinnett	SW- Other-PBR	Operating
Gwinnett Medical Center	PBR-067-002OSTT	Gwinnett	SW- Other-PBR	Operating
Gwinnettt Co - Firestar Inc Biomedical Waste Transfer Station	PBR-067-805TS	Gwinnett	SW- Transfer Station	Operating
Heavenly Paws Pet Aquamation, Inc.	PBR-067-809COL-BIO	Gwinnett	SW- Collection	Operating
Hedgewood Properties	PBR-067-633IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-634IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-638IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-637IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-663IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-661IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties	PBR-067-636IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-408IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-462IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-455IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-411IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-393IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-409IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-397IL	Gwinnett	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
Hedgewood Properties Inert Landfill	PBR-067-399IL	Gwinnett	SW- Inert Landfill	Closed
Hedgewood Properties Inert Landfill	PBR-067-412IL	Gwinnett	SW- Inert Landfill	Closed
Helen Spanhous Inert Landfill	PBR-067-430IL	Gwinnett	SW- Inert Landfill	Operating
Highland Lake Parnters, L.L.C.	PBR-067-690IL	Gwinnett	SW- Inert Landfill	Operating
Highland Lake Parnters, L.L.C.	PBR-067-684IL	Gwinnett	SW- Inert Landfill	Operating
Howard Grading & Landscaping Lk.Lucerne Rd. Inert LF	PBR-067-009IL	Gwinnett	SW- Inert Landfill	Operating
Jack Hall Builders, Inc.--Inert Landfill	PBR-067-020IL	Gwinnett	SW- Inert Landfill	Closed
Jackson Farms Assoc. LP Inert Landfill	PBR-067-133IL	Gwinnett	SW- Inert Landfill	Operating
Jay Bullock - Builder, Inc.	PBR-067-481IL	Gwinnett	SW- Inert Landfill	Operating
Jdb Investors, Inc. Inert Landfill	PBR-067-024IL	Gwinnett	SW- Inert Landfill	Operating
Jerome Parker Inert Landfill	PBR-067-278IL	Gwinnett	SW- Inert Landfill	Operating
John Fleitz	PBR-067-491IL	Gwinnett	SW- Inert Landfill	Operating
John Weiland Homes, Inc. Inert Landfill Edgewater S/D, Lot 23l, Hidden Wood Lane	PBR-067-139IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Edgewater S/D, Lot 10n, 455 Silverthorne Point	PBR-067-128IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill	PBR-067-179IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill	PBR-067-163IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill	PBR-067-233IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill	PBR-067-181IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill 2570 Lockemeade Way - Edgewater S/D	PBR-067-098IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Edgewater S/D, 405 Silverthorne Point Lot 6n	PBR-067-149IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Edgewater S/D, 415 Silver Thorne Point	PBR-067-143IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Edgewater S/D, 492 Forrest Gate Circle Lot 16l	PBR-067-150IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Edgewater Sd Lot 10n	PBR-067-111IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Edgewater Sd Lot 28k	PBR-067-132IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfill Lot 6g, 2555 Lockmeade Way, Edgewater S/D	PBR-067-081IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfills Edgewater S/D-Lot 29k, 570 Woodbrook Way	PBR-067-112IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc. Inert Landfills Edgewater S/D-Lot 9n, 435 Silver Thorne Point	PBR-067-119IL	Gwinnett	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
John Wieland Homes, Inc.Inert Landfill	PBR-067-198IL	Gwinnett	SW- Inert Landfill	Closed
John Wieland Homes, Inc.Inert Landfill	PBR-067-185IL	Gwinnett	SW- Inert Landfill	Closed
Jsw Construction, Inc. Inert Landfill	PBR-067-142IL	Gwinnett	SW- Inert Landfill	Operating
Junk Patrol Hauling And Waste Removal, LLC	PBR-067-813COL	Gwinnett	SW- Collection	Operating
K R Y Investments, Inc.	PBR-067-719IL	Gwinnett	SW- Inert Landfill	Operating
Lasalle Company-Inert LF	PBR-067-007IL	Gwinnett	SW- Inert Landfill	Operating
Lawrenceville Transfer Center	PBR-067-780TS	Gwinnett	SW- Transfer Station	Operating
Meadow Trace, Inc.	PBR-067-691IL	Gwinnett	SW- Inert Landfill	Operating
Metro Green, LLC	067-039P(MRF)	Gwinnett	SW- Material Recovery Facility	Operating
Michael L. Yearty Inert Landfill	PBR-067-277IL	Gwinnett	SW- Inert Landfill	Operating
Mike Young Designs Inert Landfill	PBR-067-279IL	Gwinnett	SW- Inert Landfill	Operating
Minear Group, Inc. Inert Landfill	PBR-067-144IL	Gwinnett	SW- Inert Landfill	Operating
Morgan Inert Landfill	PBR-067-004IL	Gwinnett	SW- Inert Landfill	Operating
Nolen Carter	PBR-067-483IL	Gwinnett	SW- Inert Landfill	Operating
Phillips State Prison	PBR-067-753OSP	Gwinnett	SW- Other-PBR	Operating
Randy F. Riser Inert Landfill	PBR-067-230IL	Gwinnett	SW- Inert Landfill	Operating
Rest Haven Transfer Station	PBR-067-059TS	Gwinnett	SW- Transfer Station	Operating
Richland Creek Road Sanitary Landfill	067-032D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Operating
River Of Life Family Church	PBR-067-762IL	Gwinnett	SW- Inert Landfill	Operating
Robert D. Matthews Inert Landfill	PBR-067-354IL	Gwinnett	SW- Inert Landfill	Closed
Rts Lawrenceville Transfer Station	PBR-067-784TS	Gwinnett	SW- Transfer Station	Operating
Russ Watson Builders, Inc. Inert Landfill	PBR-067-076IL	Gwinnett	SW- Inert Landfill	Operating
Ryland Homes Inert Landfill	PBR-067-312IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-310IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-421IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-414IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-314IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-413IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-313IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-419IL	Gwinnett	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
Ryland Homes Inert Landfill	PBR-067-418IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-415IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-424IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-229IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-311IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-315IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-417IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-422IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-425IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-423IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-420IL	Gwinnett	SW- Inert Landfill	Closed
Ryland Homes Inert Landfill	PBR-067-416IL	Gwinnett	SW- Inert Landfill	Closed
S & W Inert Landfill, Inc.	PBR-067-761IL	Gwinnett	SW- Inert Landfill	Operating
S & W Inert Landfill, Inc.	PBR-067-761IL	Gwinnett	SW- Inert Landfill	Operating
Sanifill Of Georgia, Inc.	PBR-067-593TS	Gwinnett	SW- Transfer Station	Operating
Simpro Homes Inc	PBR-067-664IL	Gwinnett	SW- Inert Landfill	Operating
Ssm Enterprises, Inc.	PBR-067-032IL	Gwinnett	SW- Inert Landfill	Operating
Sugar Hill - Appling Rd Ph 1 (SL)	067-016D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Travis Pruitt	PBR-067-748IL	Gwinnett	SW- Inert Landfill	Operating
Vulcan Materials Company Bioremediation Of Pcs	PBR-067-101OSP	Gwinnett	SW- Other-PBR	Operating
W J Enterprises, Inc	PBR-067-011IL	Gwinnett	SW- Inert Landfill	Operating
W.J. Enterprises, Inc.	PBR-067-042IL	Gwinnett	SW- Inert Landfill	Operating
Waste Tire Management LP On Site Processing	PBR-067-264OSP	Gwinnett	SW- Other-PBR	Operating
Waterford Homes Inert Landfill	PBR-067-242IL	Gwinnett	SW- Inert Landfill	Operating
William R. Hess	PBR-067-482IL	Gwinnett	SW- Inert Landfill	Operating
Wj Enterprises, Inc.-Lot 88 & 89 Inert LF	PBR-067-015IL	Gwinnett	SW- Inert Landfill	Operating
Wmi - B J Landfill Expansion (SL)	067-025D(SL)	Gwinnett	SW- Municipal Solid Waste Landfill	Closed/PCC
Bio Chem	PBR-069-41COL	Hall	SW- Collection	Operating
Boyd's Cleaning Service	PBR-069-40COL	Hall	SW- Collection	Operating
Carp's Rolloff	PBR-069-24COL	Hall	SW- Collection	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Crystal Creek Inert Landfill	PBR-069-09IL	Hall	SW- Inert Landfill	Operating
David Kelley Inert Landfill	PBR-069-55IL	Hall	SW- Inert Landfill	Operating
Doug Allen Inert Landfill	PBR-069-19IL	Hall	SW- Inert Landfill	Operating
Eagle Waste And Recycling	PBR-069-29COL	Hall	SW- Collection	Operating
Eddie Rundles Jay Mountain Road Inert LF	PBR-069-10IL	Hall	SW- Inert Landfill	Operating
Environmental Solutions	PBR-069-25COL	Hall	SW- Collection	Operating
Gainesville Lodging Associates (LLC) Inert Landfill	PBR-069-20IL	Hall	SW- Inert Landfill	Operating
Gainesville Public Utilities - Hall County Landfill	PBR-069-03IL	Hall	SW- Inert Landfill	In-Closure
Gainesville Waste And Recycling, LLC	069-017D(C&D)	Hall	SW- Construction & Demolition Landfill	Operating
Genesis Enterprises Group LLC D/B/A Sluddge Busters	PBR-069-17COL-A	Hall	SW- Collection	Operating
Gwinn-Hall Inert Landfill	PBR-069-42IL	Hall	SW- Inert Landfill	Operating
H. T. Waste Removal	PBR-069-34COL	Hall	SW- Collection	Operating
Hall Co - Allen Creek Ph A (SL)	069-008D(SL)	Hall	SW- Municipal Solid Waste Landfill	In-Closure
Hall Co - Candler Rd (SR60)	069-015D(MSWL)	Hall	SW- Municipal Solid Waste Landfill	Operating
Hall County Board Of Commissioners	PBR-069-11COL	Hall	SW- Collection	Operating
Hall Sanitation, Inc.	PBR-069-31COL	Hall	SW- Collection	Operating
Harold L. Martin Washington St. Inert LF	PBR-069-08IL	Hall	SW- Inert Landfill	Operating
Hulsey Environmental Services Company, Inc.	PBR-069-30COL	Hall	SW- Collection	Operating
Jerome V. Kuchenmeister, Sr. Collection Operation	PBR-069-14COL	Hall	SW- Collection	Operating
Jerome V. Kuchenmeister, Sr. Inert Landfill	PBR-069-13IL	Hall	SW- Inert Landfill	Operating
Ksl Lake Lanier Inc.	PBR-069-28IL	Hall	SW- Inert Landfill	Closed
Lakewood Baptist Church	PBR-069-26IL	Hall	SW- Inert Landfill	Operating
Lula Farms	PBR-069-38OSP	Hall	SW- Other-PBR	Operating
Meaders Grading	PBR-069-37COL	Hall	SW- Collection	Operating
Memoral Park Funeral Home And Crematory	PBR-069-35OSTT	Hall	SW- Other-PBR	Operating
Merritt Contracting, Inc	PBR-069-43COL	Hall	SW- Collection	Operating
Mincey Marble Manufacturing,Inc. Hwy 369 Inert LF	PBR-069-07IL	Hall	SW- Inert Landfill	Closed/PCC
Nix Septic Tank Co.	PBR-069-23COL	Hall	SW- Collection	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Northeast Georgia Medical Center Autoclave	PBR-069-15OSP	Hall	SW- Other-PBR	Operating
Pentee Inc Monroe Dr (Inert)	PBR-069-05IL	Hall	SW- Inert Landfill	Operating
Ravan Disposal Service	PBR-069-12COL	Hall	SW- Collection	Operating
Ravan Disposal Service, Inc. Collection Operation	PBR-069-17COL	Hall	SW- Collection	Operating
Rts Landfill	069-014D(C&D)	Hall	SW- Construction & Demolition Landfill	In-Closure
Select Laboratoies, Inc. On Site Processing	PBR-069-16OSP	Hall	SW- Other-PBR	Operating
Simpson Trucking & Grading, Inc.	PBR-069-36COL	Hall	SW- Collection	Operating
Suntrust Bank, Northeast Georgia, N.A. Inert Landfill	PBR-069-21IL	Hall	SW- Inert Landfill	Closed
Wilbur F. Ramsey Inert Landfill	PBR-069-18IL	Hall	SW- Inert Landfill	Operating
Derek A. Hill Inert Landfill	PBR-070-01IL	Hancock	SW- Inert Landfill	Operating
Dixie Recycling Inc. - Cr144 SLF	070-003D(SL)	Hancock	SW- Municipal Solid Waste Landfill	Permit Appealed
Sparta - Fairmont/Stockade Rds (SL)	070-002D(SL)	Hancock	SW- Municipal Solid Waste Landfill	Closed/PCC
B.L. Williamson-Curry Creek Road Inert LF	PBR-078-05IL	Jackson	SW- Inert Landfill	Operating
Bolton Enterprises Inc.	PBR-078-011COL	Jackson	SW- Collection	Operating
City Of Jefferson	PBR-078-20YTL	Jackson	SW- Yard Trimming Landfill	Operating
Commerce - Pigeon St (L)	078-007D(L)	Jackson	SW- Construction & Demolition Landfill	Archived
D & E Removal	PBR-078-13COL	Jackson	SW- Collection	Operating
Dwight Brooks	PBR-078-014COL	Jackson	SW- Collection	Operating
Garbage Hound Sanitation	PBR-078-019TS	Jackson	SW- Transfer Station	Operating
Hwy 129 North Of I-85 Inert Landfill	PBR-078-01IL	Jackson	SW- Inert Landfill	Operating
J M Huber Solid Waste Collection	PBR-078-03COL	Jackson	SW- Collection	Operating
J.M. Huber Corporation	PBR-078-08IL	Jackson	SW- Inert Landfill	Closed
J.M. Huber Corporation Ga Highway 334 Inert LF	PBR-078-02IL	Jackson	SW- Inert Landfill	Closed
Jackson Co - SR82 Prison Farm Ph 2 (SL)	078-009D(SL)	Jackson	SW- Municipal Solid Waste Landfill	Closed/PCC
Jackson Co. Bd. Of Commissioners Transfer Station	PBR-078-09TS	Jackson	SW- Transfer Station	Operating
Lanier Palett Recycling, Inc.	PBR-078-15OSTT	Jackson	SW- Other-PBR	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Louisiana - Pacific Corporation Athens OSB	PBR-078-11 OSP	Jackson	SW- Other-PBR	Operating
Phillips And Associates Collection Operation	PBR-078-10COL	Jackson	SW- Collection	Operating
Richard Stanley Lewis Air Curtain Destructor	PBR-078-10OSTT	Jackson	SW- Other-PBR	Operating
Wayne Farms, Division Of Continental Grain Co. Wayne Poultry Rd.	PBR-078-07IL	Jackson	SW- Inert Landfill	Closed
Wendell Gee-Highway 129 Inert LF	PBR-078-04IL	Jackson	SW- Inert Landfill	Operating
J. & T. Solid Waste Collection	PBR-083-01COL	Johnson	SW- Collection	Operating
Johnson Co - SR15 Wrightsville Ph 1 (SL)	083-002D(SL)	Johnson	SW- Municipal Solid Waste Landfill	Archived
Johnson Co - SR15 Wrightsville Ph 2 (SL)	083-004D(SL)	Johnson	SW- Municipal Solid Waste Landfill	Closed/PCC
Sinclair Disposal Service Collection	PBR-083-02COL	Johnson	SW- Collection	Operating
Allen C. Loyd, Inc.	PBR-084-05IL	Jones	SW- Inert Landfill	Operating
Andrews Paving Company	PBR-084-02IL	Jones	SW- Inert Landfill	Closed
Bill (William H. Cecil Inert Landfill	PBR-085-08IL	Jones	SW- Inert Landfill	Operating
Gibson Garbage Services	PBR-084-06COL	Jones	SW- Collection	Operating
Jones Co - Cumslo Rd Ph 2 (SL)	084-006D(SL)	Jones	SW- Municipal Solid Waste Landfill	Closed/PCC
Jones Co - Cumslo Rd, Cr S1079, Gray	084-002D(SL)	Jones	SW- Municipal Solid Waste Landfill	Archived
Jones Co - Honeycutt Inert Landfill	PBR-084-01IL	Jones	SW- Inert Landfill	Closed
K7e's Trash Service	PBR-084-07COL	Jones	SW- Collection	Operating
Southern Aggregates Company	PBR-084-03IL	Jones	SW- Inert Landfill	Operating
Southern Aggregates Company	PBR-084-04COL	Jones	SW- Collection	Operating
City Of East Dublin Holmes Road Inert LF	PBR-087-02IL	Laurens	SW- Inert Landfill	Closed
Dublin Construction Co. Inert Land	PBR-087-03IL	Laurens	SW- Inert Landfill	Closed
Dublin Motels Inert Landfill	PBR-087-09IL	Laurens	SW- Inert Landfill	Closed
East Dublin - Nathaniel Dr Rows 1&2 (SL)	087-009D(SL)	Laurens	SW- Municipal Solid Waste Landfill	Closed/PCC
Evans Disposal Service, Inc.	PBR-087-10COL	Laurens	SW- Collection	Operating
Jackie Rawls Inert Landfill	PBR-087-12IL	Laurens	SW- Inert Landfill	Closed
Laurens Co - Bethsaida Church Rd Inert Landfill	PBR-087-04IL	Laurens	SW- Inert Landfill	Closed
Laurens Co- Ryland Environmental, Inc	PBR-087-14COL	Laurens	SW- Collection	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
Laurens County	087-008D(SL)	Laurens	SW- Municipal Solid Waste Landfill	Closed/PCC
Laurens County Inert Landfill	PBR-087-06IL	Laurens	SW- Inert Landfill	Operating
Laurens County Old Macon Rd. Landfill	087-015D(MSWL)	Laurens	SW- Municipal Solid Waste Landfill	Operating
Mclendon Enterrprises, Inc. Cr328 Inert LF	PBR-087-01IL	Laurens	SW- Inert Landfill	Closed
Melvin Hester Collection Operation	PBR-087-11COL	Laurens	SW- Collection	Operating
Paul R. Hamrick Inert Landfill	PBR-087-07IL	Laurens	SW- Inert Landfill	Closed
Se Paper Mfg-Shad Crk Rd Const 2 (LI)		Laurens	SW- Private Industrial Landfill	
Sks Enterprises, Inc. Collection Operation	PBR-087-05COL	Laurens	SW- Collection	Operating
Timothy P. & Leslie L. Lentile, Property	PBR-087-08IL	Laurens	SW- Inert Landfill	Closed
Westrock Southeast - Shad Crk Rd Indl Ph #1 (LI)		Laurens	SW- Private Industrial Landfill	
Westrock Southeast, LLC Papermill Road Private Industry Solid Waste Disposal Facility		Laurens	SW- Private Industrial Landfill	
Alewine Waste Management	PBR-095-06COL	Madison	SW- Collection	Operating
Alewine Waste Management, Inc.	PBR-095-03COL	Madison	SW- Collection	Operating
Highway 106 Inert Landfill	PBR-095-08IL	Madison	SW- Inert Landfill	Operating
Madison Co - Colbert Rd S (L)	095-008D(L)	Madison	SW- Construction & Demolition Landfill	Archived
Madison County Board Of Commissioners	095-006D(SL)	Madison	SW- Municipal Solid Waste Landfill	Closed/PCC
Madison County Landfill Colbert/Danielsville Rd. Inert LF	PBR-095-01IL	Madison	SW- Inert Landfill	Operating
Robert Jennings	PBR-095-02IL	Madison	SW- Inert Landfill	Operating
Tom Compton Trucking	PBR-095-07COL	Madison	SW- Collection	Operating
Twin W Transport	PBR-095-04IL	Madison	SW- Inert Landfill	Operating
Wood Trucking	PBR-095-05COL	Madison	SW- Collection	Operating
A. M. Tuck, Inc SR15 Inert Landfill	PBR-103-01IL	Montgomery	SW- Inert Landfill	Closed
Hwy 280 Processing Center	PBR-103-08COL	Montgomery	SW- Collection	Operating
Montgomery Co - Us 221 Ailey Ph 1 (SL)	103-001D(SL)	Montgomery	SW- Municipal Solid Waste Landfill	Closed/PCC
Montgomery County Highway 56 Inert LF	PBR-103-03IL	Montgomery	SW- Inert Landfill	Closed
Philip Pittman	PBR-103-04IL	Montgomery	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
Union Camp Corp.-Higgston Woodyard Inert LF	PBR-103-02IL	Montgomery	SW- Inert Landfill	Closed
A Class Containers Inc Dba A Class Sanitation	PBR-107-19COL	Newton	SW- Collection	Operating
Achundris	PBR-107-20COL	Newton	SW- Collection	Operating
Caleb Waste, Inc	PBR-107-05COL	Newton	SW- Collection	Operating
Dean Smith	PBR-107-14COL	Newton	SW- Collection	Operating
Dixie Waste Systems, Inc.	PBR-107-10COL	Newton	SW- Collection	Operating
Farmer Oil, Inc.	PBR-107-07OSP	Newton	SW- Other-PBR	Operating
Gilbert Southern Corp.	PBR-107-11IL	Newton	SW- Inert Landfill	Operating
Harris Transfer Station	PBR-107-17TS	Newton	SW- Transfer Station	Operating
J. Wayne Maddox Inert Landfill	PBR-107-06IL	Newton	SW- Inert Landfill	Operating
Jimmy Harris Trucking Inc	PBR-107-18COL	Newton	SW- Collection	Operating
Newton Co - Forest Tower/Lwr Rvr Rds (SL)	107-015D(MSWL)	Newton	SW- Municipal Solid Waste Landfill	Operating
Newton Co - Forest Tower/Lwr Rvr Rds C&D Landfill	107-013D(SL)	Newton	SW- Construction & Demolition Landfill	In-Closure
Newton Co - Lackey Rd Ph 3 (SL)	107-011D(SL)	Newton	SW- Municipal Solid Waste Landfill	Archived
Newton Medical Center	PBR-107-04OSTT	Newton	SW- Other-PBR	Closed
Porterdale - SR 81 (L)	107-010D(L)	Newton	SW- Construction & Demolition Landfill	Closed/PCC
Ram Waste	PBR-107-12COL	Newton	SW- Collection	Operating
Robert I. Day Highway 162 Inert LF	PBR-107-01IL	Newton	SW- Inert Landfill	Operating
Ronnie Owens Highway 212. Inert LF	PBR-107-03IL	Newton	SW- Inert Landfill	Operating
Waste Disposal, Inc.	PBR-107-09COL	Newton	SW- Collection	Operating
Bill M. Rosser Inert Landfill	PBR-108-09IL	Oconee	SW- Inert Landfill	Operating
Bulldog Disposal Services LLC	PBR-108-13COL	Oconee	SW- Collection	Operating
Curbside Services Inc	PBR-108-12COL	Oconee	SW- Collection	Operating
David Hayes-Highway 15 Inert LF	PBR-108-03IL	Oconee	SW- Inert Landfill	Operating
F4 Sanitation, Inc.	PBR-108-07COL	Oconee	SW- Collection	Operating
Fred & Evelyn Brown-Flat Rock Loop/Oliver Bridge Rd.	PBR-108-02IL	Oconee	SW- Inert Landfill	Operating
Oconee Co - Mayne Mill Rd Frmgtn (SL)	108-002D(SL)	Oconee	SW- Municipal Solid Waste Landfill	Closed/PCC

Facility Name	Permit Number	County	Interest Type	Operating Status
Oconee Co - Us 441/Cr 109 (SL)	108-007D(SL)	Oconee	SW- Municipal Solid Waste Landfill	Closed/PCC
Oconee Co - Us 441/Cr 109 (SL)	108-008P(INC)	Oconee	SW- Thermal Treatment	Closed/PCC
Oconee County Board Of Commissioners Collection System	PBR-108-06COL	Oconee	SW- Collection	Operating
Oconee County Board Of Commissioners Inert Landfill	PBR-108-05IL	Oconee	SW- Inert Landfill	Permit Applied For
Roll-Off Systems	PBR-108-10COL	Oconee	SW- Collection	Operating
Steve Brown	PBR-108-04IL	Oconee	SW- Inert Landfill	Operating
University Of Georgia Plant Science Farm Inert Landfil	PBR-108-08IL	Oconee	SW- Inert Landfill	Closed
Ag Center, Inc. (Formerly Jean Pahl) Inert Landfill	PBR-109-06IL	Oglethorpe	SW- Inert Landfill	Operating
American Stadium Services Transfer Station	PBR-109-10TS	Oglethorpe	SW- Transfer Station	Operating
Horace E. Hudson Inert Landfill	PBR-109-07IL	Oglethorpe	SW- Inert Landfill	Closed
Oglethorpe C&D Recycling	PBR-109-09IL	Oglethorpe	SW- Inert Landfill	Operating
Oglethorpe County Board Of Commissioners	PBR-109-05IL	Oglethorpe	SW- Inert Landfill	Operating
Oglethorpe County Board Of Commissioners Us78 Inert LF	PBR-109-04IL	Oglethorpe	SW- Inert Landfill	Operating
Oglethorpe County Construction & Demolition Landfill	109-003D(C&D)	Oglethorpe	SW- Construction & Demolition Landfill	Operating
Olgethorpe Co - Us 78 C/D Landfill	109-002D(SL)	Oglethorpe	SW- Construction & Demolition Landfill	In-Closure
Olgethorpe Co - Us 78 Ph 1 (SL)	109-002D(SL-1)	Oglethorpe	SW- Municipal Solid Waste Landfill	Closed/PCC
Stephanie Arwood Inert Landfill	PBR-109-08IL	Oglethorpe	SW- Inert Landfill	Operating
Tim Graham-Highway78 Inert LF	PBR-109-03IL	Oglethorpe	SW- Inert Landfill	Operating
Aalto Scientific, Ltd.	PBR-117-12OSTT-BIO	Putnam	SW- Other-PBR	Operating
Advanced Disposal Services CDW Waste Disposal	PBR-117-08COL	Putnam	SW- Collection	Operating
Advanced Disposal Services CWD Transfer Station	PBR-117-09TS	Putnam	SW- Transfer Station	Operating
City Of Eatonton Highway 441s Inert LF	PBR-117-03IL	Putnam	SW- Inert Landfill	Closed
City Of Eatonton West Church Street Inert LF	PBR-117-01IL	Putnam	SW- Inert Landfill	Closed
Ga Power - Plant Branch (LI)		Putnam	SW- Private Industrial Landfill	
Ga Power Co. Plant Branch Inert LF	PBR-117-02IL	Putnam	SW- Inert Landfill	Closed

Facility Name	Permit Number	County	Interest Type	Operating Status
Georgia Power Plant Branch Ash Ponds A, B, C, D, And E	PBR-117-011OSP	Putnam	SW- Other-PBR	Operating
Gregory Bridge Co	PBR-117-04IL	Putnam	SW- Inert Landfill	Operating
Horton Homes, Inc. Acd	PBR-117-07OSTT	Putnam	SW- Other-PBR	Closed
Mclendon Enterprises Inert Landfill	PBR-117-06IL	Putnam	SW- Inert Landfill	Operating
Putnam Co - Cr 29 (L) & (SL)	117-007D(SL)	Putnam	SW- Municipal Solid Waste Landfill	Closed/PCC
Putnam Co - Martin Mill Rd Ph 1 (SL)	117-004D(SL)	Putnam	SW- Municipal Solid Waste Landfill	Closed/PCC
Putnam County Board Of Commissioners Inert Landfill	PBR-117-05IL	Putnam	SW- Inert Landfill	In-Closure
City Of Soperton	PBR-140-03IL	Treutlen	SW- Inert Landfill	Closed
City Of Soperton COLLECTION, INERT LANDFILL	PBR-140-02IL	Treutlen	SW- Collection	Closed
Reeves Construction Co., S. 3rd St. Inert LF	PBR-140-01IL	Treutlen	SW- Inert Landfill	Closed
Billy And Diane Neal Inert Landfill	PBR-143-02IL	Twiggs	SW- Inert Landfill	Operating
Imerys Clay - Dry Branch (LI)		Twiggs	SW- Private Industrial Landfill	
Imerys Clay - Jeffersonville - Allfarm Rd (LI)		Twiggs	SW- Private Industrial Landfill	
Imerys Pigments & Additives		Twiggs	SW- Private Industrial Landfill	
James Emory, Inc.	PBR-143-01IL	Twiggs	SW- Inert Landfill	Operating
Kamin (LI)		Twiggs	SW- Private Industrial Landfill	
Price Disposal	PBR-143-04COL	Twiggs	SW- Collection	Operating
Riggins Mill Rd Inert Landfill	PBR-143-ADIL	Twiggs	SW- Inert Landfill	Closed
Twiggs Co - Old Mccallum Pond Rd Ph 1&2(SL)	143-005D(SL)	Twiggs	SW- Municipal Solid Waste Landfill	Closed/PCC
Wolf Creek Landfill, LLC	143-008D(SL)	Twiggs	SW- Municipal Solid Waste Landfill	Operating
81 Inert & Disposal Inc.	PBR-147-14IL	Walton	SW- Inert Landfill	Operating
Adair Hauling	PBR-147-33COL	Walton	SW- Collection	Operating
Brent N. Venable	PBR-147-01IL	Walton	SW- Inert Landfill	Operating
Caruthers Mill C&D Landfill	147-014D(C&D)	Walton	SW- Construction & Demolition Landfill	Operating
Chris Hudgins Collection	PBR-147-12COL	Walton	SW- Collection	Operating
City Of Loganville Municipal Solid Waste Transfer Station	PBR-147-55TS	Walton	SW- Transfer Station	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
City Of Loganville Municipal Solid Waste Transfer Station	PBR-147-55COL	Walton	SW- Collection	Operating
City Of Monroe Inert Landfill	PBR-147-24IL	Walton	SW- Inert Landfill	In-Closure
City Of Monroe Transfer Station	PBR-147-39TS	Walton	SW- Transfer Station	Operating
Cody Lewis Trucking Company	PBR-147-10COL	Walton	SW- Collection	Operating
David Bruce Collection	PBR-147-11COL	Walton	SW- Collection	Operating
Donald Allgood	PBR-147-02IL	Walton	SW- Inert Landfill	Closed
Donald Allgood-Ozoru Road Inert LF	PBR-147-07IL	Walton	SW- Inert Landfill	Closed
Doug Clack	PBR-147-28IL	Walton	SW- Inert Landfill	Operating
Gene A. Ross, Jr. Collection	PBR-147-19COL	Walton	SW- Collection	Operating
George Russell Collection	PBR-147-18COL	Walton	SW- Collection	Operating
Georgia Waste And Recycling Service Collection	PBR-147-17COL	Walton	SW- Collection	Operating
Henry Marchell Inert Landfill	PBR-147-15IL	Walton	SW- Inert Landfill	Operating
Highway 78 C&D Landfill	147-012D(C&D)	Walton	SW- Construction & Demolition Landfill	Operating
Holder Inert Landfills (Triple H Enterprises)	PBR-147-37IL	Walton	SW- Inert Landfill	Operating
Holder's Logging Equipment	PBR-147-36COL	Walton	SW- Collection	Operating
Kent Rock Road Inert LF	PBR-147-05IL	Walton	SW- Inert Landfill	In-Closure
L. C. Chriswell Inert Landfill	PBR-147-25IL	Walton	SW- Inert Landfill	Operating
L.L.J. Williams Properties Inert Landfill	PBR-147-21IL	Walton	SW- Inert Landfill	Operating
Leggett & Platt, Inc.	PBR-147-27OSTT	Walton	SW- Other-PBR	Operating
Melba J. Lindsey Inert Landfill	PBR-147-23IL	Walton	SW- Inert Landfill	Operating
Morris Disposal Service	PBR-147-32COL	Walton	SW- Collection	Operating
Preston Road Inert (Holder Inert Waste Landfill) - Good Hope	PBR-147-35IL	Walton	SW- Inert Landfill	Operating
Randall T.Lark Hauling, Inc. Collection Operation	PBR-147-16COL	Walton	SW- Collection	Operating
Sims Landfill Dba Walton County Landfill	PBR-147-42IL	Walton	SW- Inert Landfill	Operating
Smith And Company Restoration, Inc.	PBR-147-56COL	Walton	SW- Collection	Operating
Southern Sanitation, Inc.	PBR-147-40COL	Walton	SW- Collection	Operating
Superior Waste Disposal, Inc.	PBR-147-34COL	Walton	SW- Collection	Operating
Tara Club Estates Inert Landfill	PBR-147-22IL	Walton	SW- Inert Landfill	Operating
Thomas D. Moreland Alcovy River Inert LF	PBR-147-03IL	Walton	SW- Inert Landfill	Operating
Universal - Rundle Piswlf		Walton	SW- Private Industrial Landfill	

Facility Name	Permit Number	County	Interest Type	Operating Status
Walton C&D Landfill	147-013D(C&D)	Walton	SW- Construction & Demolition Landfill	Operating
Walton Co - SR11/Roscoe Davis Rd Ph 3 (SL)	147-010D(SL)	Walton	SW- Municipal Solid Waste Landfill	Closed/PCC
Walton Co- 81 Inert & Disposal, Inc	PBR-147-53COL	Walton	SW- Collection	Operating
Walton Co. Board Of Comm. - Sanitation & Recycling (Il)	PBR-147-30IL	Walton	SW- Inert Landfill	Closed
Walton County Board Of Commissioners-Inert LF	PBR-147-06IL	Walton	SW- Inert Landfill	Operating
Bussell Road Landfill	PBR-150-07IL	Washington	SW- Inert Landfill	Closed
City Of Davisboro - Old School Property	PBR-150-03IL	Washington	SW- Inert Landfill	Closed
English China Clay Plt #2		Washington	SW- Private Industrial Landfill	
Five Star Waste Inc	PBR-150-04TS PBR-150-04TS	Washington	SW- Transfer Station	Closed
Holly Springs Baptist Church Holly Springs Baptist Church	PBR-150-05IL	Washington	SW- Inert Landfill	Closed
Imerys Clays, Inc. - Deepstep Road		Washington	SW- Private Industrial Landfill	
IMERYS Clays, Inc. (DBA ECC International)		Washington	SW- Private Industrial Landfill	
Thiele/Anglo/Burgess-Kaolin Rd (LI)		Washington	SW- Private Industrial Landfill	
Washington Co - Kaolin Rd Acd	150-012P(INC)	Washington	SW- Thermal Treatment	Closed/PCC
Washington Co - Kaolin Rd S #2 (SL)	150-009D(SL)	Washington	SW- Municipal Solid Waste Landfill	Closed/PCC
Washington Co - Kaolin Rd S Ph 1 (SL)	150-006D(SL)	Washington	SW- Municipal Solid Waste Landfill	Closed/PCC
Washington Co- Junk And Waste Disposal	PBR-150-08COL	Washington	SW- Collection	Operating
Washington Co-Kaolin Rd S #3 (SL)	150-010D(MSWL)	Washington	SW- Municipal Solid Waste Landfill	In-Closure
Washington County Board Of Commissioners	PBR-150-01IL	Washington	SW- Inert Landfill	Closed
Washington State Prison	PBR-150-02OSP	Washington	SW- Other-PBR	Operating
Cravey & Sons, Inc Inert Landfill	PBR-153-02IL	Wheeler	SW- Inert Landfill	Closed
Treutlen & Wheeler Cos - SR46 Ph 2&3 (SL)	153-005D(SL)	Wheeler	SW- Municipal Solid Waste Landfill	Closed/PCC
Treutlen-Wheeler Counties Inert Landfill	PBR-153-03IL	Wheeler	SW- Inert Landfill	Closed
Wheeler County Hospital	PBR-153-01OSTT	Wheeler	SW- Other-PBR	Operating

Facility Name	Permit Number	County	Interest Type	Operating Status
BASF Corporation - Gordon #2 (LI)		Wilkinson	SW- Private Industrial Landfill	
BASF Corporation - Mcintyre #2 (LI)		Wilkinson	SW- Private Industrial Landfill	
Blue Ridge Energy Development, LLC (Pt) Power Company (LLC)	158-017P(TT)	Wilkinson	SW- Thermal Treatment	Permit Revoked
Brooks Equipment Contractors, Inc.	PBR-158-04IL	Wilkinson	SW- Inert Landfill	Closed
Covia Holdings Corporation - Mcintyre Facility	PBR-158-06IL	Wilkinson	SW- Inert Landfill	Operating
Elite Labs - Porter Crk/Cr 173 (LI)		Wilkinson	SW- Private Industrial Landfill	
Engelhard - Gordon #1 (LI)		Wilkinson	SW- Private Industrial Landfill	
Engelhard - Mcintyre #1 (LI)		Wilkinson	SW- Private Industrial Landfill	
Engelhard Corp		Wilkinson	SW- Private Industrial Landfill	
Engelhard Corporation Inert Landfill	PBR-158-01IL	Wilkinson	SW- Inert Landfill	Closed
Ford's Body Shop	PBR-158-05IL	Wilkinson	SW- Inert Landfill	Closed
H.F. Bloodworth, Inc. Air Curtain Destructor-Ostt	PBR-158-03OSTT	Wilkinson	SW- Other-PBR	Closed
Old Hickory Clay (M & M Clays, Inc.) Inert LF	PBR-158-02IL	Wilkinson	SW- Inert Landfill	Closed
Old Hickory Clay Company		Wilkinson	SW- Private Industrial Landfill	
Unimin Corporation Mcintyre Plant		Wilkinson	SW- Private Industrial Landfill	
Wilkinson Co - SR57 Pblc Wrks Camp (SL)	158-010D(SL)	Wilkinson	SW- Municipal Solid Waste Landfill	Closed/PCC

Source: Land Protection Branch, GA EPD, 2022

4.0 ANALYTICAL APPROACH

The process of developing bacteria TMDLs for the Oconee River Basin listed segments includes the determination of the following:

- The current critical bacteria load to the stream under existing conditions;
- The TMDL for similar conditions under which the current load was determined; and
- The percent reduction in the current critical bacteria load necessary to achieve the TMDL.

The calculation of the bacteria load at any point in a stream requires the bacteria concentration and stream flow. The Loading Curve Approach was used to determine the current bacteria load and the TMDL. For the listed segments, fecal coliform sampling data were sufficient to calculate at least one 30-day geometric mean to compare with the regulatory criteria (see Appendix A).

4.1 Loading Curve Approach

For segments with revised TMDLs, original 303(d) listings of certain segments were based on spill data that is no longer available. Therefore, a current critical load and percent reduction cannot be determined. However, the annual average flow determined using USGS StreamStats, (USGS, 2017) was used to calculate the TMDL. The StreamStats annual average flow for each stream with a revised TMDL is given in Table A-1 in Appendix A.

For those segments in which sufficient water quality data were collected to calculate at least one 30-day geometric mean above the regulatory standard, the loading curve approach was used to calculate the current critical load.

The TMDLs for this document were calculated using data from nearby USGS gages and the applicable water quality criterion. These nearby stream gages have relatively similar watershed characteristics, including land use, slope, and drainage area. The stream flows were estimated by multiplying the measured stream flow by the ratio of the listed stream drainage area to the gaged stream drainage area. Table 15 provides the USGS stream gages used to estimate the flow for the listed stream segments. For each listed segment, the drainage areas and USGS gages used to estimate stream flow are given in Table A-2 in Appendix A. The current critical load was compared to summer and winter seasonal TMDL curves to determine the required percent reduction.

Table 15: USGS Flow Gages Used to Estimate Stream Flow in the 303(d) Listed Segments in the Oconee River Basin

Waterbody Name	Location	USGS Station No.	USGS Station Name	Flow Gage Drainage Area (sq miles)
East Bear Creek	33.50725, -83.77025	02209360	East Bear Creek at Poplar Road, near Mansfield, GA	6.89
Mulberry Creek	34.04594, -83.71156	02217297	Mulberry Creek near Winder, GA	109

Waterbody Name	Location	USGS Station No.	USGS Station Name	Flow Gage Drainage Area (sq miles)
Apalachee River	33.78817, -83.47405	02219000	Apalachee River near Bostwick, GA	176
Big Sandy Creek	32.76654, -83.16793	02223360	Big Sandy Creek at US 441 near Irwinton, GA	184
Little River	33.55636, -83.66653	02220788	Little River at Newborn Road near Newborn, GA	571
Oconee River	32.54461, -82.89459	02223500	Oconee River at Dublin, GA	4400

The current critical loads were determined using fecal coliform data collected within a 30-day period to calculate the geometric means and multiplying these values by the arithmetic means of the flows measured at the time the water quality samples were collected. Georgia's instream bacteria standards are based on a geometric mean of samples collected over a 30-day period, with samples collected at least 24 hours apart. To reflect this in the load calculation, the bacteria loads are expressed as 30-day accumulated loads with units of counts per 30 days. This is described by the equation below:

$$L_{critical} = C_{geomean} \times Q_{mean}$$

Where:

$L_{critical}$ = current critical bacteria load
$C_{geomean}$ = bacteria concentration as a 30-day geometric mean
Q_{mean} = stream flow as an arithmetic mean

The current estimated critical load is dependent on the fecal coliform concentrations and stream flows measured during the sampling events. The number of events sampled is usually 16 per year. Thus, these loads do not represent the full range of flow conditions or loading rates that can occur. Therefore, it must be kept in mind that the current critical loads used only represent the worst-case scenario that occurred during the sampling period.

The maximum bacteria load at which the instream bacteria criteria will be met can be determined using a variation of the equation above. By setting C equal to the seasonal, instream bacteria standard, the load will equal the TMDL. However, the TMDL is dependent on stream flow. Figures in Appendix A graphically illustrate that the TMDL is a continuum for the range of flows (Q) that can occur in the stream over time. There are two TMDL curves shown in these figures. One represents the summer TMDL for the period May through October when the 30-day geometric mean standard is 200 counts/100 mL. The second curve represents the winter TMDL for the period November through April when the 30-day geometric mean standard is 1,000 counts/100 mL. The equations for these two TMDL curves are:

$$TMDL_{summer} = 200 \text{ counts/100 mL (as a 30-day geometric mean)} \times Q$$

$$TMDL_{winter} = 1{,}000 \text{ counts/100 mL (as a 30-day geometric mean)} \times Q$$

The graphs show the relationship between the current critical load ($L_{critical}$) and the TMDL. The TMDL for a given stream segment is the load for the mean flow corresponding to the current critical load. This is the point where the current load exceeds the TMDL curve by the greatest amount. This critical TMDL can be represented by the following equation:

$$TMDL_{critical} = C_{standard} \times Q_{mean}$$

Where:

$TMDL_{critical}$ = critical bacteria TMDL load
$C_{standard}$ = seasonal bacteria standard (as a 30-day geometric mean)
summer - 200 counts/100 mL as fecal coliform
winter - 1,000 counts/ 100 mL as fecal coliform
Q_{mean} = stream flow as an arithmetic mean

A 30-day geometric mean load that plots above the respective seasonal TMDL curve represents an exceedance of the instream bacteria standard. The difference between the current critical load and the TMDL curve represents the load reduction required for the stream segment to meet the appropriate instream bacteria standard. There is also a single sample maximum criterion of 4,000 counts per 100 mL for fecal coliform. If a single sample exceeds the maximum criterion, and the seasonal geometric mean criteria is also exceeded, then the TMDL is based on the criteria exceedance requiring the largest load reduction.

For future *E. coli* TMDLs, one curve will represent the summer TMDL for the period May through October when the 30-day geometric mean standard is 126 counts/100 mL. The second curve will represent the winter TMDL for the period November through April when the 30-day geometric mean standard is 265 counts/100 mL. The equations for these two TMDL curves are:

$$TMDL_{summer} = 126 \text{ counts/100 mL (as a 30-day geometric mean)} \times Q$$

$$TMDL_{winter} = 265 \text{ counts/100 mL (as a 30-day geometric mean)} \times Q$$

The TMDL for a given stream segment is the load for the mean flow corresponding to the current critical fecal coliform load. This is the point where the current fecal coliform load exceeds the fecal coliform TMDL curve by the greatest amount. This critical TMDL can be represented by the following equation:

$$TMDL_{critical} = C_{standard} \times Q_{mean}$$

Where:

$TMDL_{critical}$ = critical bacteria TMDL load
$C_{standard}$ = seasonal bacteria standard (as a 30-day geometric mean)
summer – 126 counts/100 mL as *E. coli*
winter – 265 counts/ 100 mL as *E. coli*
Q_{mean} = stream flow as an arithmetic mean

There is also a statistical threshold value (STV) maximum criterion for the months of May through October (410 counts per 100 mL for *E. coli)* and November through April (861 counts per 100 mL for *E. coli*). If a single sample exceeds the STV maximum criterion, and the seasonal geometric mean criteria is also exceeded, then the TMDL is based on the criteria exceedance requiring the largest load reduction.

For a TMDL, the percent load reduction can be expressed as follows:

$$\text{Percent Load Reduction} = \frac{L_{critical} - TMDL_{critical}}{L_{critical}} \times 100$$

The current critical loads and the TMDLs are expressed as equations that show the loads as a function of the total flow at any given time. The general equations for the critical load and the TMDL are:

$$L_{critical} = Q_{total} \times C_{geomean}$$

Where:

$L_{critical}$ = current critical bacteria load
$C_{geomean}$ = bacteria concentration as a 30-day geometric mean
Q_{total} = stream flow

$$TMDL = C_{criterion} \times Q_{total}$$

Where:

TMDL = total maximum daily load
$C_{criterion}$ = criterion
Q_{total} = estimated instantaneous flow

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, it is the seasonal bacterial standard. A TMDL is the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAS) for nonpoint sources, as well as natural background (40 CFR 130.2) for a given waterbody. 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 waterbody. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measures. For bacteria, the TMDLs are expressed as counts per 30 days as a geometric mean.

A TMDL is expressed as follows:

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

The TMDL calculates the WLAs and LAs with a margin of safety to meet the stream's water quality standards. The allocations are based on estimates that use the best available data and provide the basis to establish or modify existing controls so that water quality standards can be achieved. In developing a TMDL, it is important to consider whether adequate data are available to identify the sources, and to understand the fate and transport of the pollutant(s) to be controlled.

TMDLs may be developed using a phased approach. Under a phased approach, the TMDL includes: 1 WLAs that confirm existing limits and controls or lead to new limits, and 2 LAs that confirm existing controls or include implementing new controls (USEPA, 1991). A phased TMDL requires additional data be collected to determine if load reductions required by the TMDL are leading to the attainment of water quality standards.

Watershed-based plans may be developed to address and assess both point and nonpoint sources. These plans establish a schedule or timetable for the installation and evaluation of source control measures, data collection, and assessment of water quality standard attainment. Future monitoring of the listed segments water quality may be used to evaluate this phase of the TMDL, and if necessary, to reallocate the loads.

The existing fecal coliform loads calculated for each listed stream segment are based on sampling data and measured or estimated flows and represent the sum of the total loads from all point and nonpoint sources for the segment. In situations where two or more adjacent segments are listed, the fecal coliform loads to each segment are individually evaluated on a localized watershed basis. The following sections describe the various bacteria TMDL components.

5.1 Wasteload Allocations

5.1.1 Wastewater Treatment Facilities

The wasteload allocation (WLA) is the portion of the receiving water's loading capacity that is allocated to existing or future point sources. WLAs are provided to the point sources from POTW and Non-POTW wastewater treatment systems with NPDES end-of-pipe effluent limits established to meet the applicable water quality standard. In addition, the permits include routine monitoring and reporting requirements.

For facilities that currently have a bacteria effluent limit, the permit information, receiving stream, impaired stream and WLAs are provided in Table 16. This information is provided for facilities that discharge into or within 25 miles upstream of the listed segment. In most cases, the WLAs are calculated based on permitted or design flow and permitted bacteria concentration. However, for those facilities whose wastewater is reused, the bacteria limit to discharge into surface waters may be overly restrictive and for these facilities the WLA is calculated using the permitted flow and permitted bacteria concentration. This was expressed as an accumulated load over a 30-day period and presented in units of counts per 30 days. If there is a new facility or a facility expands its capacity and the permitted flow increases, the wasteload allocation for the facility will be the permitted flow times the appropriate water quality criteria, either 200 counts/100 mL for fecal coliform or 126 counts/100 mL for E. coli as a 30-day geometric mean.

Table 16: WLAs for the Facilities that Currently have Bacteria Limits in the Oconee River Basin

Facility Name	NPDES Permit No.	Receiving Stream	Listed Stream Segment	Bacterial Indictor	WLA (counts/ 30 days)	30 Day Geometric Mean Concentration (counts/100mL)
West Laurens Middle/High School WPCP	GAG550156	Unnamed Tributary of Crooked Creek	Oconee River GAR030701021201	Fecal coliform	6.09E+08	200
				E. coli	3.84E+08	126
Monticello - Pearson Creek WPCP	GA0020141	Pearson Creek	Pearson Creek GAR030701011617	Fecal coliform	1.99E+09	200
				E. coli	1.25E+09	126
Monticello -White Oak Creek WPCP	GA0020150	Tributary to White Oak Creek	Tributary to White Oak Creek GAR030701011620	Fecal coliform	1.35E+09	200
				E. coli	8.49E+08	126
Gordon WPCP	GA0020397	Rocky Creek	Oconee River GAR030701021201	Fecal coliform	8.78E+09	200
				E. coli	5.53E+09	126
Dudley WPCP	GA0023957	Turkey Creek	Oconee River GAR030701021201	Fecal coliform	1.35E+09	200
				E. coli	8.49E+08	126
Dublin WPCP	GA0025569	Oconee River	Oconee River GAR030701021201	Fecal coliform	7.03E+10	200
				E. coli	4.43E+10	126
Rentz WPCP	GA0037630	Blue Water Creek	Oconee River GAR030701021201	Fecal coliform	1.41E+09	200
				E. coli	8.85E+08	126
Mansfield WPCP	GA0047759	Tributary to Pittman Branch	Tributary to Pittman Branch GAR030701011615	Fecal coliform	7.03E+08	200
				E. coli	4.43E+08	126
Dexter WPCP	GA0048682	Stitchihatchie Creek	Oconee River GAR030701021201	Fecal coliform	8.78E+08	200
				E. coli	5.53E+08	126

Non-POTW facilities that discharge sanitary wastewater directly or sanitary waste streams commingled with other waste streams will be given a bacteria effluent limit in their permit.

Potential WLAs for existing Non-POTW discharges without bacteria permit limits would be the facility design flow multiplied by the appropriate bacteria criterion, either 200 counts/100 mL for fecal coliform or 126 counts/100 mL for *E. coli* as a 30-day geometric mean. For these facilities, it is not known if their discharge contains any bacteria at levels that would exceed the instream water quality criteria because the type of treatment processes employed. Therefore, existing Non-POTW facilities may be required to submit bacteria data with their NPDES permit renewal application. Non-POTW discharges must collect, analyze, and submit appropriate bacteria data from at least 4 samples collected 24 hours apart within a 30-day period. GA EPD will evaluate these data and determine if a permit limit for bacteria is needed. There are currently three (3) known existing Non-POTW discharges without bacteria permit limits in the contributing watersheds, as noted in Table 7.

5.1.2 Regulated Stormwater Discharges

State and Federal Rules define stormwater discharges covered by NPDES permits as point sources. However, stormwater discharges are from diffuse sources and there are multiple stormwater outfalls. Stormwater 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 stormwater NPDES permits is not to treat the water after collection, but to reduce the exposure of stormwater to pollutants by implementing various controls. It would be infeasible and prohibitively expensive to control pollutant discharges from each stormwater outfall. Therefore, stormwater NPDES permits require the establishment of controls or BMPs to reduce the pollutants entering the environment.

The wasteload allocations from stormwater discharges (WLAsw) associated with MS4s are estimated based on the percentage of urban area in each watershed covered by the MS4 stormwater permit. At this time, the portion of each watershed that goes directly to a permitted storm sewer or is non-permitted sheet flow or diffuse runoff has not been clearly defined. Thus, it is assumed that approximately 70 percent of stormwater runoff from the regulated urban area is collected by the MS4s. This can be represented by the following equation:

$$WLA_{SW} = Q_{WLAsw} \times C_{standard}$$

where: WLA_{SW} = Wasteload Allocation for permitted storm water runoff from all MS4 urban areas

Q_{WLAsw} = Runoff from all MS4 urban areas conveyed through permitted storm water structures

$Q_{WLAsw} = \Sigma Q_{urban} \times 0.7$

ΣQ_{urban} = Sum of all storm water runoff from MS4 urban

$C_{standard}$ = seasonal fecal coliform standard (as a 30-day geometric mean)
summer – 200 counts/100 mL as fecal coliform
winter – 1000 counts/ 100 mL as fecal coliform

summer – 126 counts/100 mL as *E. coli*
winter – 265 counts/ 100 mL as *E. coli*

For stormwater permits, compliance with the terms and conditions of the permit is effective implementation of the WLA to the Maximum Extent Practicable (MEP), and demonstrates consistency with the assumptions and requirements of the TMDL. GA EPD acknowledges that progress with the assumptions and requirements of the TMDL by stormwater permittees may take one or more permit iterations. Achieving the TMDL reductions may constitute compliance with a SWMP or a SWPPP, provided the MEP definition is met, even where the numeric percent reduction may not be achieved so long as reasonable progress is made toward attainment of water quality standards using an iterative BMP process.

5.1.3 Concentrated Animal Feeding Operations

Wet manure facilities are either included under a State-issued LAS General Permit or an NPDES General Permit. A small number of wet manure operations have an individual NPDES permit. Dry manure facilities are not required to obtain permits. None of the wet manure or dry manure facilities have discharges. Presently, there are seventeen (17) wet or dry manure CAFOs located in the watersheds of the listed segments in the Oconee River Basin, but they were not provided an explicit WLA as they do not have a discharge.

5.2 Load Allocations

The load allocation is the portion of the receiving water's loading capacity that is attributed to existing or future nonpoint sources or to natural background sources. Nonpoint sources are identified in 40 CFR 130.6 as follows:

- Residual waste;
- Land disposal;
- Agricultural and silvicultural;
- Mines;
- Construction;
- Saltwater intrusion; and
- Urban stormwater (non-permitted).

The LA is calculated as the remaining portion of the TMDL load available, after allocating the WLA, WLAsw, and the MOS, using the following equation:

$$LA = TMDL - (\Sigma\ WLA + \Sigma\ WLAsw + MOS)$$

As described above, there are two types of load allocations: loads to the stream independent of precipitation, including sources such as failing septic systems, leachate from landfills, animals in the stream, leaking sewer system collection lines, and background loads; and loads associated with bacteria accumulation on land surfaces that is washed off during storm events, including runoff from saturated LAS fields. Currently, it is not possible to partition the various sources of load allocations. In the future, after additional data has been collected, it may be possible to partition the load allocation by source.

5.3 Seasonal Variation

The Georgia bacteria criteria are seasonal. One set of criteria applies to the summer season, while a different set applies to the winter season. To account for seasonal variations, the critical loads for each listed segment were determined from sampling data obtained during both summer and winter seasons, when possible. The TMDL and percent reduction for each listed segment is based on the season in which the critical load occurred. The TMDLs for each season, for any given flow, are presented as equations in Section 5.5.

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 modeling 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, an explicit MOS of 10 percent of the TMDL was used.

5.5 Total Bacteria Load

The bacteria TMDL for the listed stream segment is dependent on the time of year, the stream flow, and the applicable state water quality standard. In January 2022, the Georgia DNR Board adopted new bacteria criteria for “Fishing” and “Drinking Water” designated uses using the bacterial indicators *E. coli* and enterococci. These bacteria are better indicators for human health illnesses. The adopted criteria have the same estimated illness rate (8 per 1000 swimmers) as the previously established fecal coliform criteria. Since this TMDL is based on fecal coliform data, but the current bacteria criterion is *E. coli*, this TMDL will use both fecal coliform and *E. coli* as the bacterial indicators.

The total maximum daily seasonal fecal coliform loads for Georgia are given below:

$TMDL_{summer}$ = 200 counts/100 mL (as a 30-day geometric mean) x Q

$TMDL_{winter}$ = 1000 counts/100 mL (as a 30-day geometric mean) x Q

TMDL = 4000 counts/100 mL (instantaneous) x Q

The total maximum daily seasonal *E. coli* loads for Georgia are given below:

$TMDL_{summer}$ = 126 counts/100 mL (as a 30-day geometric mean) x Q

$TMDL_{winter}$ = 265 counts/100 mL (as a 30-day geometric mean) x Q

TMDL = 410 counts/100 mL (instantaneous) x Q

For purposes of determining necessary load reductions required to meet the instream water quality criteria, the current critical TMDL was determined. This load is the product of the applicable seasonal bacteria standard and the mean flow used to calculate the current fecal coliform critical load. It represents the sum of the allocated loads from point (WLA and WLA_{sw}) and nonpoint (LA) sources located within the immediate drainage area of the listed segment, and a margin of safety (MOS). For these calculations, the bacteria contributed by a permitted facility to the WLA was the product of the bacteria permitted limit and the monthly permitted discharge. The current critical

loads and corresponding TMDLs, WLAs (WLA and WLA_{sw}), LAs, MOSs, and percent load reductions for the Oconee River Basin listed stream segments are presented in Table 17.

The relationships of the current critical loads to the TMDLs are shown graphically in Appendix A. The vertical distance between the two values represents the load reductions necessary to achieve the TMDLs. Because of the localized nature of the load evaluations, the calculated bacterial load reductions pertain to point and nonpoint sources occurring within the immediate drainage area of the listed segment. The current critical values represent a worst-case scenario for the limited set of data. Thus, the load reductions required are conservative estimates, and should be sufficient to prevent exceedances of the instream bacteria standard for a wide range of conditions.

Evaluation of the relationship between instream water quality and the potential sources of pollutant loading is an important component of TMDL development and is the basis for later implementation of corrective measures and BMPs. For the current TMDLs, the association between bacterial loads and the potential sources occurring within the sub-watershed of each segment was examined on a qualitative basis.

Table 17: Bacteria Loads and Required Load Reductions

Assessment Unit ID	Stream Segment	Description	Bacterial Indicator	Current Load (counts/ 30 days)	TMDL Components					Reduction Required
					WLA (counts/ 30 days)[1]	WLAsw (counts/ 30 days)	LA (counts/ 30 days)	MOS (counts/ 30 days)	TMDL (counts/ 30 days)	
GAR030701010317	Calls Creek	Headwaters to Lampkin Branch	Fecal coliform	4.25E+10	--	2.88E+09	1.65E+10	2.16E+09	2.16E+10	49.3%
			E. coli	[2]	--	1.81E+09	1.04E+10	1.36E+09	1.36E+10	Undetermined [3]
GAR030701011210	Kimbro Creek	Headwaters to Hightower Creek	Fecal coliform	1.54E+11	--	--	4.09E+10	4.54E+09	4.54E+10	70.6%
			E. coli	[2]	--	--	2.57E+10	2.86E+09	2.86E+10	Undetermined [3]
GAR030701010318	Little Bear Creek	Headwaters to Bear Creek	Fecal coliform	1.07E+11	--	1.14E+09	1.90E+10	2.24E+09	2.24E+10	79.0%
			E. coli	[2]	--	7.17E+08	1.20E+10	1.41E+09	1.41E+10	Undetermined [3]
GAR030701010911	Little Sandy Creek	Ivy Branch to Turkey Creek	Fecal coliform	5.58E+10	--	--	8.19E+08	9.10E+07	9.10E+08	98.4%
			E. coli	[2]	--	--	5.16E+08	5.73E+07	5.73E+08	Undetermined [3]
GAR030701021201	Oconee River	Turkey Creek to Red Bluff Creek	Fecal coliform	2.12E+14	8.33E+10	--	1.43E+13	1.60E+12	1.60E+13	92.5%
			E. coli	[2]	5.25E+10	--	9.00E+12	1.01E+12	1.01E+13	Undetermined [3]
GAR030701011617	Pearson Creek	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	Fecal coliform	6.29E+11	1.99E+09	--	2.32E+10	2.80E+09	2.80E+10	95.5%
			E. coli	[2]	1.25E+09	--	1.46E+10	1.77E+09	1.77E+10	Undetermined [3]
GAR030701011619	Pearson Creek	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	Fecal coliform	2.00E+10	1.99E+09	--	1.26E+10	1.62E+09	1.62E+10	18.6%
			E. coli	[2]	1.25E+09	--	7.96E+09	1.02E+09	1.02E+10	Undetermined [3]
GAR030701010603	Rose Creek	Headwaters to the Oconee River	Fecal coliform	4.69E+11	--	--	1.38E+11	1.53E+10	1.53E+11	67.3%
			E. coli	[2]	--	--	8.69E+10	9.66E+09	9.66E+10	Undetermined [3]
GAR030701020803	Rum Creek	Hobbs Lake to the Oconee River	Fecal coliform	1.32E+10	--	--	9.93E+09	1.10E+09	1.10E+10	16.7%
			E. coli	[2]	--	--	6.25E+09	6.95E+08	6.95E+09	Undetermined [3]
GAR030701021405	Tributary to Limestone Creek	Headwaters to Limestone Creek	Fecal coliform	2.03E+10	--	--	2.94E+09	3.27E+08	3.27E+09	83.9%
			E. coli	[2]	--	--	1.85E+09	2.06E+08	2.06E+09	Undetermined [3]
GAR030701011615	Tributary to Pittman Branch	Headwaters to Pittman Branch	Fecal coliform	1.04E+11	7.03E+08	--	2.84E+09	3.94E+08	3.94E+09	96.2%
			E. coli	[2]	4.43E+08	--	1.79E+09	2.48E+08	2.48E+09	Undetermined [3]
GAR030701011620	Tributary to White Oak Creek	Monticello White Oak WPCP to White Oak Creek	Fecal coliform	1.59E+10	1.35E+09	--	1.38E+09	3.03E+08	3.03E+09	81.0%
			E. coli	[2]	8.49E+08	--	8.70E+08	1.91E+08	1.91E+09	Undetermined [3]

Assessment Unit ID	Stream Segment	Description	Bacterial Indicator	Current Load (counts/ 30 days)	TMDL Components					Reduction Required
					WLA (counts/ 30 days)(1)	WLAsw (counts/ 30 days)	LA (counts/ 30 days)	MOS (counts/ 30 days)	TMDL (counts/ 30 days)	
GAR030701011621	Tributary to White Oak Creek	Headwaters to Monticello White Oak WPCP	Fecal coliform	2.27E+10	1.35E+09	--	1.95E+09	3.66E+08	3.66E+09	83.9%
			E. coli	(2)	8.49E+08	--	1.23E+09	2.31E+08	2.31E+09	Undetermined (3)
GAR030701011812	Turkey Creek	Headwaters to Rooty Creek	Fecal coliform	1.86E+12	--	--	1.25E+11	1.39E+10	1.39E+11	92.5%
			E. coli	(2)	--	--	7.87E+10	8.75E+09	8.75E+10	Undetermined (3)
GAR030701011209	Whitten Creek	Hancock County	Fecal coliform	1.50E+13	--	--	7.75E+11	8.61E+10	8.61E+11	94.2%
			E. coli	(2)	--	--	4.88E+11	5.43E+10	5.43E+11	Undetermined (3)
Revised TMDLs										
GAR030701010301	Anne Court Branch	Headwaters to Middle Oconee River, Athens	Fecal coliform	(4)	--	2.56E+09	2.02E+09	5.10E+08	5.10E+09	Undetermined (3)
			E. coli	(4)	--	1.61E+09	1.27E+09	3.21E+08	3.21E+09	Undetermined (3)
GAR030701010704	Greenbrier Creek	Salem Scull Shoals Road to Lake Oconee	Fecal coliform	(4)	--	9.38E+07	1.81E+11	2.01E+10	2.01E+11	Undetermined (3)
			E. coli	(4)	--	5.91E+07	1.14E+11	1.27E+10	1.27E+11	Undetermined (3)
GAR030701020206	Town Creek	Peavy Branch to Oconee River	Fecal coliform	(4)	--	--	3.43E+11	3.82E+10	3.82E+11	Undetermined (3)
			E. coli	(4)	--	--	2.16E+11	2.40E+10	2.40E+11	Undetermined (3)
GAR030701010108	Tributary 2 to Allen Creek	Gainesville - Downstream Old Landfill	Fecal coliform	(4)	--	2.02E+08	7.23E+09	8.25E+08	8.25E+09	Undetermined (3)
			E. coli	(4)	--	1.27E+08	4.55E+09	5.20E+08	5.20E+09	Undetermined (3)
GAR030701010115	Tributary 5 to Allen Creek	Gainesville	Fecal coliform	(4)	--	1.26E+09	3.50E+09	5.28E+08	5.28E+09	Undetermined (3)
			E. coli	(4)	--	7.93E+08	2.20E+09	3.33E+08	3.33E+09	Undetermined (3)
GAR030701010101	Tributary 7 to Allen Creek	Gainesville	Fecal coliform	(4)	--	--	4.20E+09	4.67E+08	4.67E+09	Undetermined (3)
			E. coli	(4)	--	--	2.65E+09	2.94E+08	2.94E+09	Undetermined (3)
GAR030701010102	Tributary 8 to Allen Creek	Gainesville	Fecal coliform	(4)	--	1.99E+08	1.11E+10	1.26E+09	1.26E+10	Undetermined (3)
			E. coli	(4)	--	1.26E+08	7.00E+09	7.92E+08	7.92E+09	Undetermined (3)

Notes:

(1) The assigned bacterial load from the NPDES permitted facility for WLA was determined as the product of the permitted flow and bacteria permit limit.
(2) Sample was not analyzed for *E. coli*, therefore critical load calculation not possible.
(3) Percent reduction could not be determined due to absence of current load calculation.
(4) Critical loading could not be determined due to no samples collected.

6.0 RECOMMENDATIONS

The TMDL process consists of an evaluation of the sub-watersheds for each 303(d) listed stream segment to identify, as best as possible, the sources of the bacteria loads causing the stream to exceed instream standards. The TMDL analysis was performed using the best available data to specify WLAs and LAs that will meet bacteria water quality criteria to support the use classification specified for the listed segment.

This TMDL represents part of a long-term process to reduce bacteria loading to meet water quality standards in the Oconee River Basin. Implementation strategies will be reviewed and the TMDL will be refined, as necessary, in the next phase (next five-year cycle). The phased approach will support progress toward water quality standards attainment in the future. In accordance with USEPA TMDL guidance, the TMDL may be revised based on the results of future monitoring and source characterization data efforts. The following recommendations emphasize further source identification and involve the collection of data to support the current allocations and subsequent source reductions.

6.1 Monitoring

Water quality monitoring is conducted at several locations across the State each year. Sampling is conducted statewide by GA EPD personnel in Atlanta, Augusta, Brunswick, Cartersville, and Tifton. Additional monitoring sites are added as necessary.

In the case where a watershed-based plan has been developed for a listed stream segment, an appropriate water quality monitoring program will be outlined. The monitoring program will be developed to help identify the various bacteria sources. The monitoring program may be used to verify the 303(d) stream segment listings. This will be especially valuable for those segments where limited data resulted in the listing.

6.2 Bacteria Management Practices

Based on the findings of the source assessment, NPDES point source bacteria loads from wastewater treatment facilities usually do not significantly contribute to the impairment of the listed stream segments. This is because most facilities are required to treat to levels corresponding to instream water quality criteria. Sources of bacteria in urban areas include wastes that are attributable to domestic animals, leaks and overflows from sanitary sewer systems, illicit discharges of sanitary waste, leaking septic systems, runoff from improper disposal of waste materials, and leachate from both operational and closed landfills. In agricultural areas, potential sources of bacteria may include CAFOs, animals grazing in pastures, dry manure storage facilities and lagoons, chicken litter storage areas, and direct access of livestock to streams. Wildlife, especially waterfowl and mammals living close to or in water environments, can be a significant source of bacteria.

Management practices are recommended to reduce bacteria source loads to the listed 303(d) stream segments, with the result of achieving the instream bacteria standard criteria. These recommended management practices include:

- Compliance with NPDES (wastewater, construction, industrial stormwater, and/or MS4) permit limits and requirements;

- Ensure storm water management plans are in place and being implemented by the local governments located in the watershed;
- Implementation of Georgia's *Statewide Nonpoint Source Management Plan* (GA EPD, 2019)
- Implementation of recommended Water Quality management practices in the *Upper Oconee Water Planning Region*;
- Implementation of *Georgia's Best Management Practices for Forestry* (GFC, 2009);
- Implementation of *Best Management Practices for Georgia Agriculture* (GSWCC, 2013) and Adoption of National Resource Conservation Service (NRCS) Conservation Practices for agriculture;
- Adoption and implementation of the *Georgia Stormwater Management Manual* (ARC, 2016) and the *Coastal Stormwater Supplement to the Georgia Stormwater Management Manual* (CWP, 2009) to facilitate water quality treatment of stormwater runoff, including bacteria removal, through structural stormwater BMP installation.

6.2.1 Point Source Approaches

The NPDES permit program provides a basis for municipal, industrial, and stormwater permits, monitoring and compliance with permit limitations, and appropriate enforcement actions for violations. In accordance with GA EPD rules and regulations, all discharges from point source facilities are required to follow the conditions of their NPDES permit at all times. Wastewater treatment plants with the potential for bacteria in their discharge are given end-of-pipe limits to meet the applicable water quality standard. In addition, the permits include routine monitoring and reporting requirements.

Achieving the TMDL reductions may constitute compliance with a SWMP or SWPPP, provided the MEP definition is met, even where the numeric percent reduction may not be achieved so long as reasonable progress is made toward attainment of water quality standards using an iterative BMP process.

6.2.2 Nonpoint Source Approaches

GA EPD is the lead agency for implementing the State's Nonpoint Source Management Program, as described in Georgia's *Statewide Nonpoint Source Management Plan* (GA EPD, 2019). GA EPD will continue to work with local governments, agricultural, and forestry agencies such as the Natural Resources Conservation Service (NRCS), the Georgia Soil and Water Conservation Commission (GSWCC), and the Georgia Forestry Commission (GFC) to foster the implementation of BMPs that address nonpoint source pollution. The following sections describe programs in place and recommendations which should result in reducing nonpoint source loads of bacteria in Georgia's surface waters.

6.2.2.1 Agricultural Sources

GA EPD should coordinate with other agencies that are responsible for agricultural activities in the state to address issues concerning bacteria loading from agricultural lands. It is recommended that information such as livestock populations by sub-watershed, animal access to streams, manure storage and application practices be periodically reviewed so that watershed evaluations can be updated to reflect current conditions. It is also recommended that BMPs be utilized to

reduce the number of bacteria transported to surface waters from agricultural sources to the maximum extent practicable.

The following three organizations have primary responsibility for working with farmers to promote soil and water conservation, and to protect water quality:

- University of Georgia (UGA - Cooperative Extension Service);
- Georgia Soil and Water Conservation Commission (GSWCC); and
- Natural Resources Conservation Service (NRCS).

UGA has faculty, County Cooperative Extension Agents, and technical specialists who provide services in several key areas relating to agricultural impacts on water quality. 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.

The NRCS works with federal, state, and local governments to provide financial and technical assistance to farmers. The NRCS develops standards and specifications for BMPs that are to be used to improve, protect, and/or maintain our state's natural resources. In addition, 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 that covers non-federal land in the United States.

The NRCS is also 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. 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.

6.2.2.2 Urban Sources

Both point and nonpoint sources of bacteria can be significant in the Oconee River Basin urban areas. Urban sources of bacteria can best be addressed using a strategy that involves stormwater management, public participation, and intergovernmental coordination to reduce the discharge of pollutants to the maximum extent practicable. Management practices, control techniques, public education, and other appropriate methods and provisions may be employed. The following activities and programs conducted by cities, counties, and state agencies are recommended:

- Implement stormwater BMPs that incorporate water quality treatment and/or pollutant removal

- Uphold requirements that all new and replacement sanitary sewerage systems be designed to minimize discharges into storm sewer systems;

- Further develop and streamline mechanisms for reporting and correcting illicit connections, breaks, surcharges, and general sanitary sewer system problems;

- Continue efforts to increase public awareness and education towards the impact of human activities in urban settings on water quality, ranging from the

consequences of industrial and municipal discharges to the activities of individuals in residential neighborhoods.

6.3 Reasonable Assurance

GA EPD is responsible for administering and enforcing laws to protect the waters of the State. Reasonable assurance ensures that a TMDL's wasteload and load allocations are properly distributed to meet the applicable water quality standards. Without such distribution, a TMDL's ability to serve as an effective guidepost for water quality improvement is significantly diminished. Federal regulations implementing the CWA require that effluent limits in permits be consistent with "the assumptions and requirements of any available [WLA]" in an approved TMDL [40 CFR 122.44(d)(1)(vii)(B)]. NPDES point source permits will be given effluent limits in the permit consistent with the individual WLAs specified in the TMDL.

The GA EPD is the lead agency for implementing the State's Nonpoint Source Management Program. Regulatory responsibilities that have a bearing on nonpoint source pollution include establishing water quality standards and use classifications, assessing and reporting water quality conditions, and regulating land use activities that may affect water quality. Georgia is working with local governments, agricultural and forestry agencies, such as the NRCS the GSWCC, and the GFC, to foster the implementation of BMPs to address nonpoint sources. In addition, public education efforts will be targeted to individual stakeholders to provide information regarding the use of BMPs to protect water quality.

6.4 Public Participation

A thirty-day public notice is being provided for this TMDL. During that time, the TMDL will be available on the GA EPD website, a copy of the TMDL will be provided on request, and the public will be invited to provide comments on the TMDL.

7.0 INITIAL TMDL IMPLEMENTATION PLAN

This plan identifies applicable State-wide programs and activities that may be employed to manage point and nonpoint sources of bacteria loads for the segment in the Oconee River Basin. Local watershed planning and management initiatives will be fostered, supported, or developed through a variety of mechanisms. Implementation may be addressed by Watershed-Based Plans or other assessments funded by Section 319(h) grants, the local development of watershed protection plans, or "Targeted Outreach" initiated by GA EPD. These initiatives will supplement or possibly replace this initial implementation plan. Implementation actions should also be guided by the recommended management practices and actions contained within each applicable Regional Water Plan developed as part of *Georgia's Comprehensive State-wide Water Management Plan* implementation (Georgia Water Council, 2008).

7.1 Impaired Segments

This initial plan is applicable to the following waterbody that was added to Georgia's 2022 Integrated 305(b)/303(d) List of not supporting waters in *Water Quality in Georgia 2020-2021* (GA EPD, 2022) available on the GA EPD website. The following tables summarize the descriptive information provided in the 303(d) list.

Table 18: Stream Segments Listed on the 2022 303(d) List for Bacteria in the Oconee River Basin

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use
Calls Creek	Headwaters to Lampkin Branch	GAR030701010317	2.7	Fishing
Kimbro Creek	Headwaters to Hightower Creek	GAR030701011210	5.3	Fishing
Little Bear Creek	Headwaters to Bear Creek	GAR030701010318	6.3	Fishing
Little Sandy Creek	Ivy Branch to Turkey Creek	GAR030701010911	2	Fishing
Oconee River	Turkey Creek to Red Bluff Creek	GAR030701021201	25.2	Fishing
Pearson Creek	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	GAR030701011617	1.8	Fishing
Pearson Creek	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	GAR030701011619	4.5	Fishing
Rose Creek	Headwaters to the Oconee River	GAR030701010603	9	Fishing
Rum Creek	Hobbs Lake to the Oconee River	GAR030701020803	2.4	Fishing
Tributary to Limestone Creek	Headwaters to Limestone Creek	GAR030701021405	1	Fishing

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use
Tributary to Pittman Branch	Headwaters to Pittman Branch	GAR030701011615	1	Fishing
Tributary to White Oak Creek	Monticello White Oak WPCP to White Oak Creek	GAR030701011620	0.3	Fishing
Tributary to White Oak Creek	Headwaters to Monticello White Oak WPCP	GAR030701011621	1.4	Fishing
Turkey Creek	Headwaters to Rooty Creek	GAR030701011812	4.5	Fishing
Whitten Creek	Hancock County	GAR030701011209	2	Fishing

Table 19: Stream Segments with Revised TMDLs for Bacteria in the Oconee River Basin

Stream Segment	Location	Assessment Unit ID	Segment Length (miles)	Designated Use
Anne Court Branch	Headwaters to Middle Oconee River	GAR030701010301	0.8	Fishing
Greenbrier Creek	Salem Scull Shoals Road to Lake Oconee	GAR030701010704	8	Fishing
Town Creek	Peavy Branch to Oconee River	GAR030701020206	16	Fishing
Tributary 2 to Allen Creek	Gainesville – Downstream Old Landfill	GAR030701010108	1	Fishing
Tributary 5 to Allen Creek	Gainesville	GAR030701010115	1	Fishing
Tributary 7 to Allen Creek	Gainesville	GAR030701010101	1	Fishing
Tributary 8 to Allen Creek	Gainesville	GAR030701010102	1	Fishing

The water use classification for the listed stream segments in the Oconee River Basin is “Fishing.” The criterion violated is listed as fecal coliform. The potential causes listed include urban runoff and nonpoint sources. The “Fishing” bacteria water quality standards as approved by US EPA Region 4 on January 20, 2021, and applicable at the time of listing was as follows:

(c) Fishing: Propagation of Fish, Shellfish, Game and Other Aquatic Life; primary contact recreation in and on the water for the months of May – October, secondary contact recreation in and on the water for the months of November – April; or for any other use requiring water of a lower quality.

(i) Bacteria:

1. For the months of May through October, when water contact recreation activities are expected to occur, fecal coliform not to exceed a geometric mean of 200 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. Should water quality and sanitary studies show fecal coliform levels from non-human sources exceed 200 counts per 100 mL (geometric mean) occasionally, then the allowable geometric mean fecal coliform shall not exceed 300 counts per 100 mL in lakes and reservoirs and 500 counts per 100 mL in free flowing freshwater streams. For the months of November through April, fecal coliform not to exceed a geometric mean of 1,000 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours and not to exceed a maximum of 4,000 counts per 100 mL for any sample. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

2. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

In January 2022, the Georgia DNR Board adopted new bacteria criteria for "Fishing" and "Drinking Water" designated uses using the bacterial indicators *E. coli* and enterococci. These bacteria are better indicators for human health illnesses. The adopted criteria have the same estimated illness rate (8 per 1000 swimmers) as the previously established criteria. EPA approved the proposed standards August 31, 2022. Since this TMDL was written after EPA approved the new bacteria criteria, the TMDL will use both bacterial indicators. The use classification water quality standards for fecal coliform bacteria, as stated in the *State of Georgia's Rules and Regulations for Water Quality Control*, Chapter 391-3-6-.03(6)(c)(iii) (GA EPD, 2022), are:

(c) Fishing: Propagation of Fish, Shellfish, Game and Other Aquatic Life; primary contact recreation in and on the water for the months of May – October, secondary contact recreation in and on the water for the months of November – April; or for any other use requiring water of a lower quality.

(i) Bacteria:

1. Estuarine waters: For the months of May through October, when primary water contact recreation activities are expected to occur, culturable enterococci not to exceed a geometric mean of 35 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an enterococci statistical threshold value (STV) of 130 counts per 100 mL the same 30-day interval.

   For the months of November through April, culturable enterococci not to exceed a geometric mean of 74 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an enterococci statistical threshold value (STV) of 273 counts per 100 mL in the same 30-day interval.

2. All other fishing waters: For the months of May through October, when primary water contact recreation activities are expected to occur, culturable E. coli not to exceed a geometric mean of 126 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an E. coli statistical threshold value (STV) of 410 counts per 100 mL in the same 30-day interval.

   For the months of November through April, culturable E. coli not to exceed a geometric mean of 265 counts per 100 mL based on at least four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours. There shall be no greater than a ten percent excursion frequency of an E. coli statistical threshold value (STV) of 861 counts per 100 mL in the same 30-day interval.

3. The State does not encourage swimming in these surface waters since a number of factors which are beyond the control of any State regulatory agency contribute to elevated levels of bacteria.

4. For waters designated as shellfish growing areas by the Georgia DNR Coastal Resources Division, the requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program. The requirements are found in National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish, 2007 Revision (or most recent version), Interstate Shellfish Sanitation Conference, U.S. Food and Drug Administration.

7.2 Potential Sources

An important part of the TMDL analysis is the identification of potential source categories. A source assessment characterizes the known and suspected bacteria sources in the watershed. Sources are broadly classified as either point or nonpoint sources. A point source is defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. Point sources of bacteria include NPDES permittees discharging treated wastewater and storm water. Nonpoint sources of bacteria are diffuse sources that cannot be identified as entering the waterbody at a single location. These sources generally involve land use activities that contribute bacteria to streams during a rainfall runoff event.

NPDES point source bacteria loads from wastewater treatment facilities usually do not contribute to impairments. This is because these facilities are required to treat to levels corresponding to instream water quality criteria. However, point sources can and do fail, which may contribute to bacteria loads through leaks and overflows from sanitary sewer systems, CAFOs, or leachate from operational landfills.

Nonpoint sources of bacteria in urban areas include wastes that are attributable to domestic animals, illicit discharges of sanitary waste, leaking septic systems, runoff from improper disposal of waste materials, and leachate from closed landfills. In non-urban areas, potential sources of bacteria may include animals grazing in pastures, dry manure storage facilities and lagoons, chicken litter storage areas, and direct access of livestock to streams. Wildlife, especially waterfowl and mammals living close to or in water environments, can be a significant source of bacteria.

7.3 Management Practices and Activities

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

- Sustain compliance with NPDES treated wastewater permit requirements;
- Sustain compliance with NPDES MS4 permit requirements, where applicable;
- Compliance with future NPDES Industrial General Permit requirements, including where applicable, achieving benchmark levels for monitored constituents;
- Ensure storm water management plans are in place and being implemented by the local governments, and by the industrial facilities located in the watershed;

- Implementation of Georgia's *Statewide Nonpoint Source Management Plan* (GA EPD, 2019);
- Adoption and implementation of the *Georgia Stormwater Management Manual* (ARC, 2016) to facilitate water quality treatment of stormwater runoff, including bacteria removal, through structural stormwater BMP installation;
- Further develop and streamline mechanisms for reporting and correcting illicit discharges, breaks, surcharges, and general sanitary sewer system problems;
- Uphold requirements that all new and replacement sanitary sewage systems be designed to minimize discharges into storm sewer systems;
- Adoption of local ordinances (i.e., septic tanks, storm water, etc.) that address local water quality;
- Continue efforts to increase public awareness and education regarding the impact of human activities on water quality, ranging from industrial and municipal discharges to individual's activities in residential neighborhoods;
- Continue working with Federal, State, and local agencies and owners of sites where cleanup measures are necessary, and in developing control measures to prevent future releases of constituents of concern;
- Implementation of recommended Water Quality management practices in the *Upper Oconee Regional Water Plan* (GA EPD, 2017);
- Adoption of NRCS Conservation Practices for primarily agricultural lands;
- Application of BMPs appropriate to both urban and rural land uses, where applicable; and
- Ongoing public education efforts on the sources of bacteria and common-sense approaches to lessen the impact of this contaminant on surface waters.

7.4 Monitoring

GA EPD encourages local governments and municipalities to develop and continue water quality monitoring programs. These programs can help pinpoint various bacteria sources, as well as verify the 303(d) stream segment listings. This will be particularly valuable for those segments where listing was based on limited data. In addition, regularly scheduled sampling will determine if there has been some improvement in the water quality of the listed stream segments. GA EPD would like to particularly commend and encourage downgradient sampling on the LAS system and supports expanding monitoring to quarterly or monthly sampling schedules. GA EPD is available to assist in providing technical guidance regarding the preparation of monitoring plans and Sampling Quality Assurance Plans (SQAP).

7.5 Future Action

This Initial TMDL Implementation Plan includes a general approach to pollutant source identification, as well as management practices to address pollutants. In the future, GA EPD will continue to determine and assess the appropriate point and non-point source management measures needed to achieve the TMDLs and to protect and restore water quality in impaired waterbodies.

For point sources, any wasteload allocations for wastewater treatment plant facilities will be implemented in the form of water quality-based effluent limitations in NPDES permits. Any wasteload allocations for regulated stormwater will be implemented in the form of BMPs in the NPDES permits. Contributions of bacteria from regulated communities may also be managed using permit requirements such as watershed assessments, watershed protection plans, and long-

term monitoring. These measures will be directed through current point source management programs.

GA EPD will work to support watershed restoration, improvement and protection projects that address nonpoint source pollution. This is a process whereby GA EPD and/or Regional Commissions or other agencies or local governments, under a contract with GA EPD, will develop a Watershed Management Plan intended to address water quality at the small watershed level (HUC 10 or smaller). These plans will be developed as resources and willing partners become available. The development of these plans may be funded via several grant sources, including, but not limited to: CWA Section 319(h), Section 604(b), and/or Section 106 grant funds. These plans are intended for implementation upon completion.

Any Watershed Management Plan that specifically addresses a waterbody contained within this TMDL will supersede this Initial TMDL Implementation Plan for that waterbody once GA EPD accepts and/or approves the plan. Watershed Management Plans intended to address this TMDL and other water quality concerns, prepared for GA EPD, and for which GA EPD and/or the GA EPD Contractor are responsible, will contain at a minimum the US EPA's 9 Elements of Watershed Planning:

1) An identification of the sources or groups of similar sources contributing to nonpoint source pollution to be controlled to implement load allocations or achieve water quality standards. Sources should be identified at the subcategory level with estimates of the extent to which they are present in the watershed (e.g., X numbers of cattle feedlots needing upgrading, Y acres of row crops needing improved bacteria control, or Z linear miles of eroded streambank needing remediation);

2) An estimate of the load reductions expected for the management measures;

3) A description of the NPS management measures that will need to be implemented to achieve the load reductions established in the TMDL or to achieve water quality standards;

4) An estimate of the sources of funding needed, and/or authorities that will be relied upon, to implement the plan;

5) An information/education component that will be used to enhance public understanding of and participation in implementing the plan;

6) A schedule for implementing the management measures that is reasonably expeditious;

7) A description of interim, measurable milestones (e.g., amount of load reductions), improvement in biological or habitat parameters) for determining whether management measures or other control actions are being implemented;

8) A set of criteria that can be used to determine whether substantial progress is being made towards attaining water quality standards and, if not, the criteria for determining whether the plan needs to be revised; and;

9) A monitoring component to evaluate the effectiveness of the implementation efforts, measured against the criteria established under item 8.

The public will be provided an opportunity to participate in the development of Watershed Management Plans that address impaired waters and to comment on them before they are finalized.

GA EPD will continue to offer technical and financial assistance (when and where available) to complete Watershed Management Plans that address the impaired waterbodies listed in this and other TMDL documents. Assistance may include but will not be limited to:

- Assessments of pollutant sources within watersheds;
- Determinations of appropriate management practices to address impairments;
- Identification of potential stakeholders and other partners;
- Developing a plan for outreach to the public and other groups;
- Assessing the resources needed to implement the plan upon completion; and
- Other needs determined by the lead organization responsible for plan development.

GA EPD will also make this same assistance available, if needed, to proactively address water quality concerns. This assistance may be in the way of financial, technical, or other aid and may be requested and provided outside of the TMDL process or schedule.

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Appendix A

30-day Geometric Mean Fecal Coliform Monitoring Data

Table A-1: Drainage Areas and Annual Average flow values for segments with revised TMDLs

Revised 303(d) Listed Stream Segment	Segment Location	Annual Average Stream Flow (ft^3/s)	Watershed Area (sq miles)
Anne Court Branch GAR030701010301	Headwaters to Middle Oconee River, Athens	0.673	0.71
Greenbrier Creek GAR030701010704	Salem Scull Shoals Road to Lake Oconee	26.6	27.8
Town Creek GAR030701020206	Peavy Branch to Oconee River	50.4	59.8
Tributary 2 to Allen Creek GAR030701010108	Gainesville - Downstream Old Landfill	1.09	0.77
Tributary 5 to Allen Creek GAR030701010115	Gainesville	0.698	0.49
Tributary 7 to Allen Creek GAR030701010101	Gainesville	0.617	0.44
Tributary 8 to Allen Creek GAR030701010102	Gainesville	1.66	1.2

Table A-2: Drainage Areas and USGS Flow Gages used to Estimate Stream Flow in 303(d) Listed Streams

303(d) Listed Stream Segment	Segment Location	Impaired Stream Drainage Area (sq miles)	USGS Station ID	USGS Description	USGS Drainage Area (sq miles)
Calls Creek GAR030701010317	Headwaters to Lampkin Branch	4.394	02219000	Apalachee River near Bostwick, GA	176
Kimbro Creek GAR030701011210	Headwaters to Hightower Creek	5.743			

303(d) Listed Stream Segment	Segment Location	Impaired Stream Drainage Area (sq miles)	USGS Station ID	USGS Description	USGS Drainage Area (sq miles)
Rose Creek GAR030701010603	Headwaters to the Oconee River	23.532			
Tributary to Limestone Creek GAR030701021405	Headwaters to Limestone Creek	0.614			
Little Bear Creek GAR030701010318	Headwaters to Bear Creek	6.077	02217297	Mulberry Creek near Winder, GA	109
Little Sandy Creek GAR030701010911	Ivy Branch to Turkey Creek	11.17	02220788	Little River at Newborn Road near Newborn, GA	571
Oconee River GAR030701021201	Turkey Creek to Red Bluff Creek	5000	02223500	Oconee River at Dublin, GA	4400
Rum Creek GAR030701020803	Hobbs Lake to the Oconee River	5.094	02223360	Big Sandy Creek at US 441 near Irwinton, GA	184
Pearson Creek GAR030701011617	Tributary 0.3 miles upstream Post Road/College Street to Popes Branch	9.862	02209360	East Bear Creek at Poplar Road, near Mansfield, GA	6.89
Pearson Creek GAR030701011619	Headwaters to Tributary 0.3 miles upstream Post Road/College Street	5.713			
Tributary to Pittman Branch GAR030701011615	Headwaters to Pittman Branch	1.039			
Tributary to White Oak Creek GAR030701011620	Monticello White Oak WPCP to White Oak Creek	1.287			
Tributary to White Oak Creek GAR030701011621	Headwaters to Monticello White Oak WPCP	1.066	02209360	East Bear Creek at Poplar Road, near Mansfield, GA	6.89
Turkey Creek GAR030701011812	Headwaters to Rooty Creek	4.639			
Whitten Creek GAR030701011209	Hancock County	17.377			

Table A-3: RV_03_ 16203: Calls Creek at State Hwy 441 near Watkinsville, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/09/2020	40	5.02	40	5.46	8.66E+11	1.34E+12
01/21/2020	80	7.27				
02/03/2020	20	4.89				
02/05/2020	40	4.67				
05/26/2020	800	4.19	**272**	3.74	3.85E+10	2.84E+10
05/28/2020	170	4.37				
06/03/2020	80	3.25				
06/08/2020	500	3.17				
08/18/2020	300	2.49	**394**	2.85	4.25E+10	2.16E+10
08/20/2020	500	2.45				
09/01/2020	700	4.47				
09/08/2020	230	1.99				

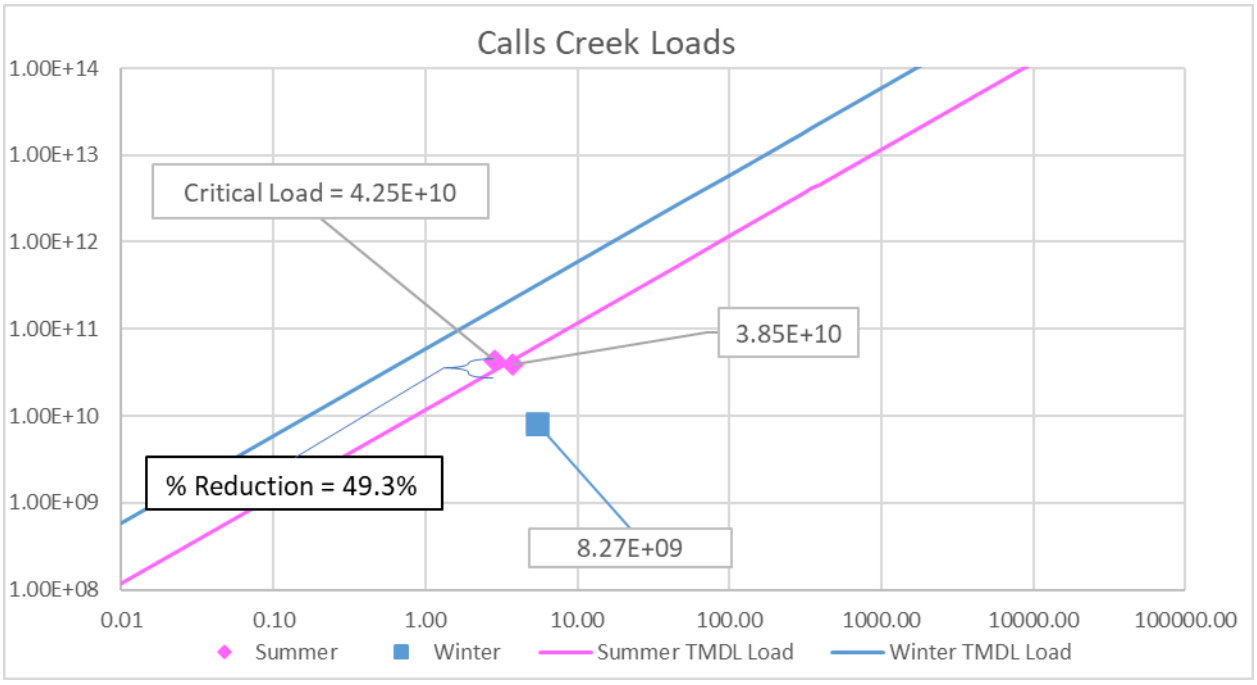

Figure A-1: Calls Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-4: RV_03_17705 – Calls Creek at SR 53 near Athens, GA
Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/09/2020	30	5.02	30	5.46	6.14E+09	4.13E+10
01/21/2020	10	7.27				
02/03/2020	130	4.89				
02/05/2020	20	4.67				
05/26/2020	800	4.19	**359**	3.74	5.09E+10	2.84E+10
05/28/2020	300	4.37				
06/03/2020	230	3.25				
06/08/2020	300	3.17				
08/18/2020	80	2.49	41	2.85	4.45E+09	2.16E+10
08/20/2020	90	2.45				
09/01/2020	40	4.47				
09/08/2020	10	1.99				

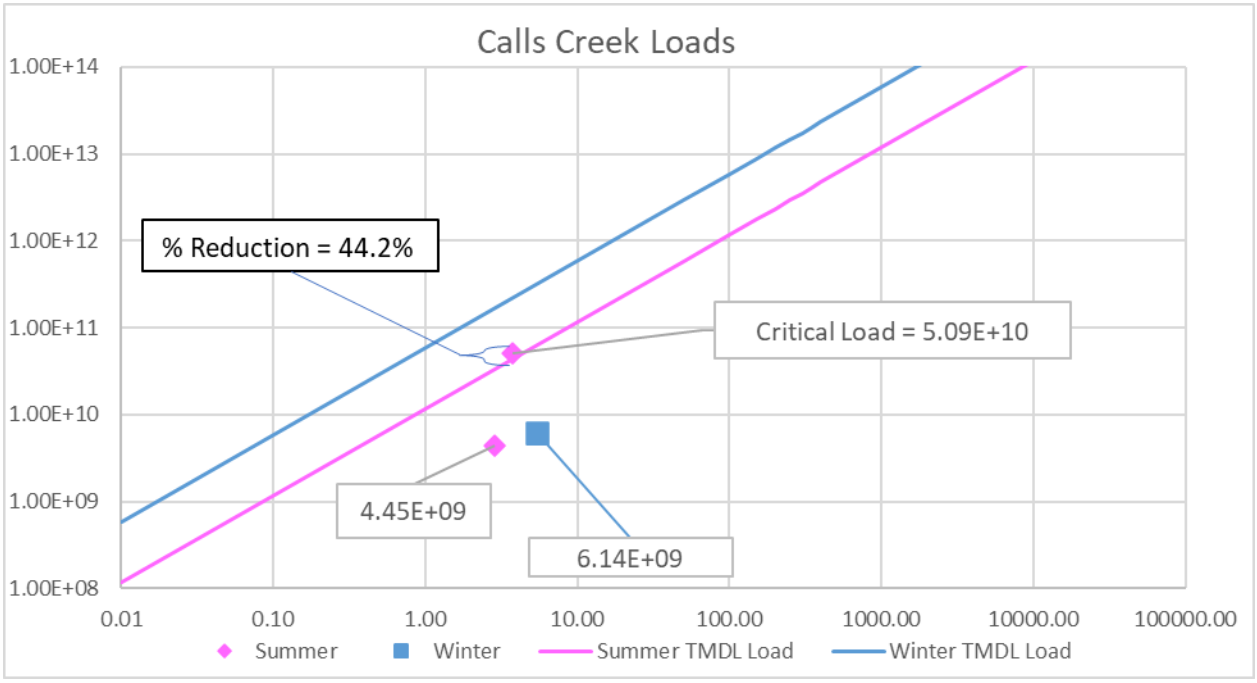

Figure A-2: Calls Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-5: RV_03_16356 – Kimbro Creek at Lanier Road
Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
03/26/2020	80	35.89	152	16.48	9.46E+10	1.25E+11
03/30/2020	75	11.00				
04/01/2020	110	11.03				
04/08/2020	800	7.99				
07/06/2020	700	3.43				
07/08/2020	260	5.32				
09/21/2020	300	9.98	**681**	6.00	1.54E+11	4.54E+10
09/28/2020	**1300**	5.78				
10/06/2020	500	4.11				
10/19/2020	**1100**	4.11				
11/09/2020	230	4.63	63	5.85	1.39E+10	4.43E+10
11/18/2020	20	4.86				
12/07/2020	85	7.60				
12/09/2020	40	6.30				

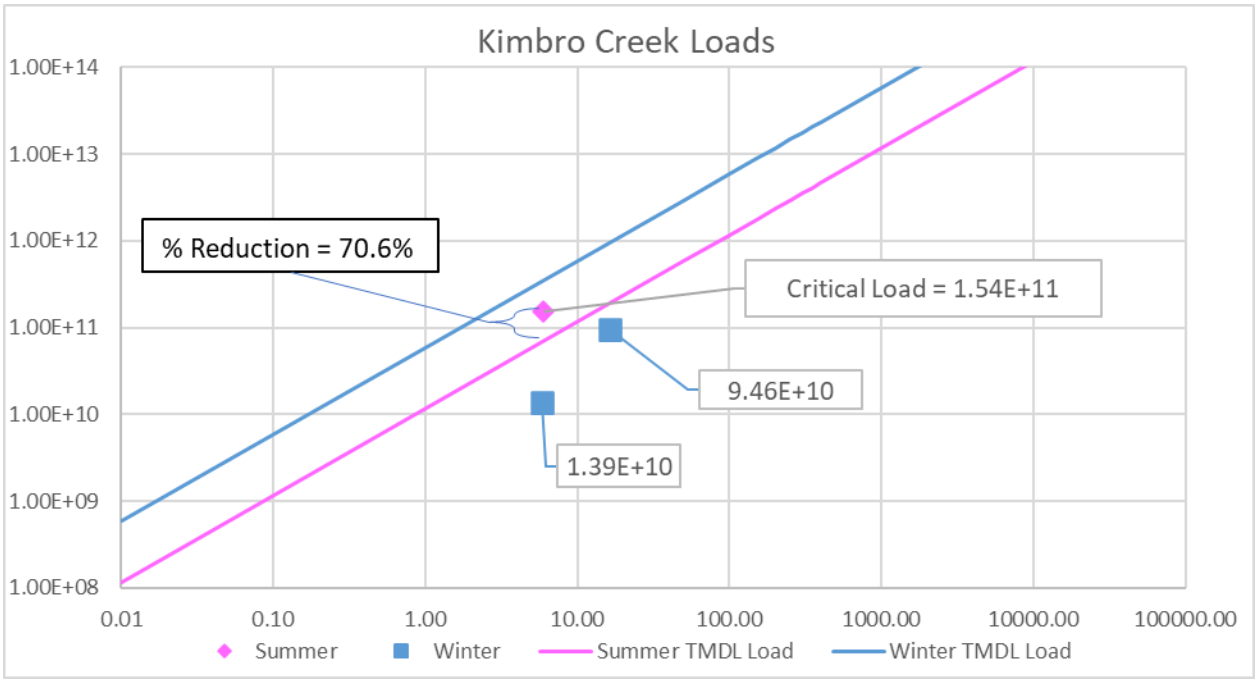

Figure A-3: Kimbro Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves for both Sampling Stations

Table A-6: RV_03_17706 – Little Bear Creek at Fowler Mill Road near Athens, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/09/2020	80	8.53	66	8.82	2.21E+10	6.68E+10
01/21/2020	70	10.54				
02/03/2020	20	8.03				
02/05/2020	170	8.20				
05/26/2020	800	7.81	**411**	7.05	1.10E+11	5.34E+10
05/28/2020	300	8.75				
06/03/2020	700	6.30				
06/08/2020	170	5.33				
08/18/2020	500	2.19	**953**	2.96	1.07E+11	2.24E+10
08/20/2020	**5000**	2.46				
09/01/2020	**1100**	5.12				
09/08/2020	300	2.06				

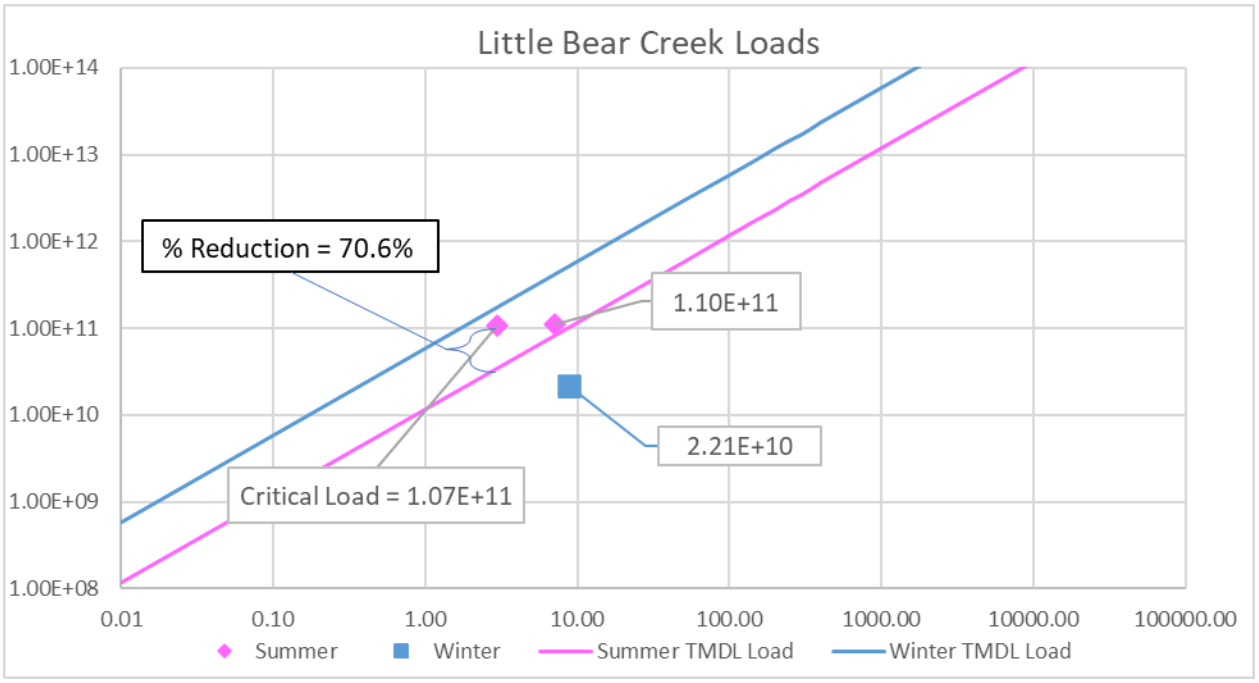

Figure A-4: Little Bear Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves for both Sampling Stations

Table A-7: RV_03_795 – Little Sandy Creek at Hardeman Mill Rd near Good Hope, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
02/17/2014	500	0.71	**1369**	0.76	3.96E+10	5.79E+09
02/27/2014	300	0.43				
03/05/2014	260	0.36				
03/17/2014	**90000**	1.55				
05/20/2014	**8000**	0.39	**12234**	0.30	1.41E+11	2.31E+09
05/28/2014	**40000**	0.32				
06/02/2014	**5000**	0.28				
06/16/2014	**14000**	0.23				
08/28/2014	**5000**	0.07	**12254**	0.12	5.58E+10	9.10E+08
09/04/2014	**2300**	0.18				
09/16/2014	**160000**	0.11				
12/09/2014	**13000**	0.17	**5229**	0.15	3.06E+10	1.17E+09
12/11/2014	**5000**	0.15				
12/15/2014	**5000**	0.15				
12/17/2014	**2300**	0.14				

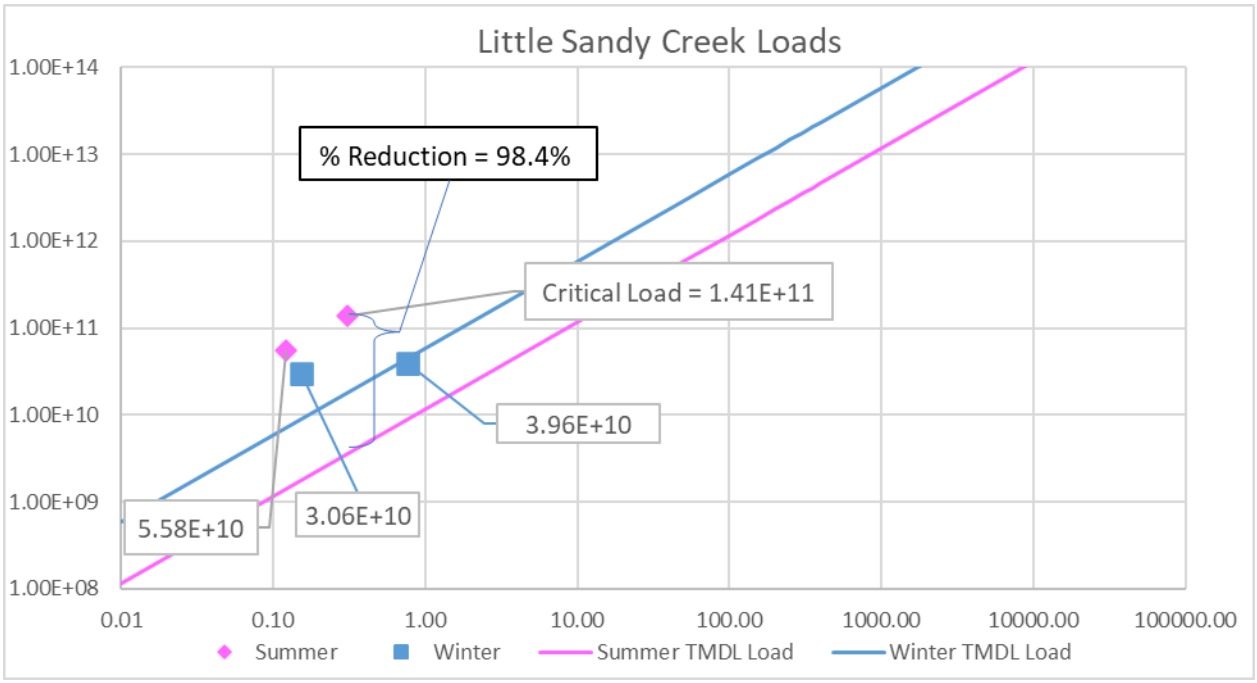

Figure A-5: Little Sandy Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves for both Sampling Stations

Table A-8: RV_03_650 – Oconee River at Shady Field Boat Ramp / Riverbend WMA near Soperton, GA, Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
02/04/2019	70	5090.91	**216**	6326.7	5.18E+13	4.79E+13
02/07/2019	170	5079.55				
02/21/2019	800	5738.64				
02/25/2019	230	9397.73				
05/01/2019	**2200**	2693.18	**2654**	2109.85	2.12E+14	1.60E+13
05/20/2019	**17000**	2363.64				
05/28/2019	500	1272.73				
08/01/2019	110	787.50	**255**	985.61	9.50E+12	7.46E+12
08/19/2019	300	1047.73				
08/26/2019	500	1121.59				
11/07/2019	300	715.91	**298**	1485.8	1.68E+13	1.12E+13
11/14/2019	230	1261.36				
11/18/2019	230	2375.00				
11/21/2019	500	1590.91				

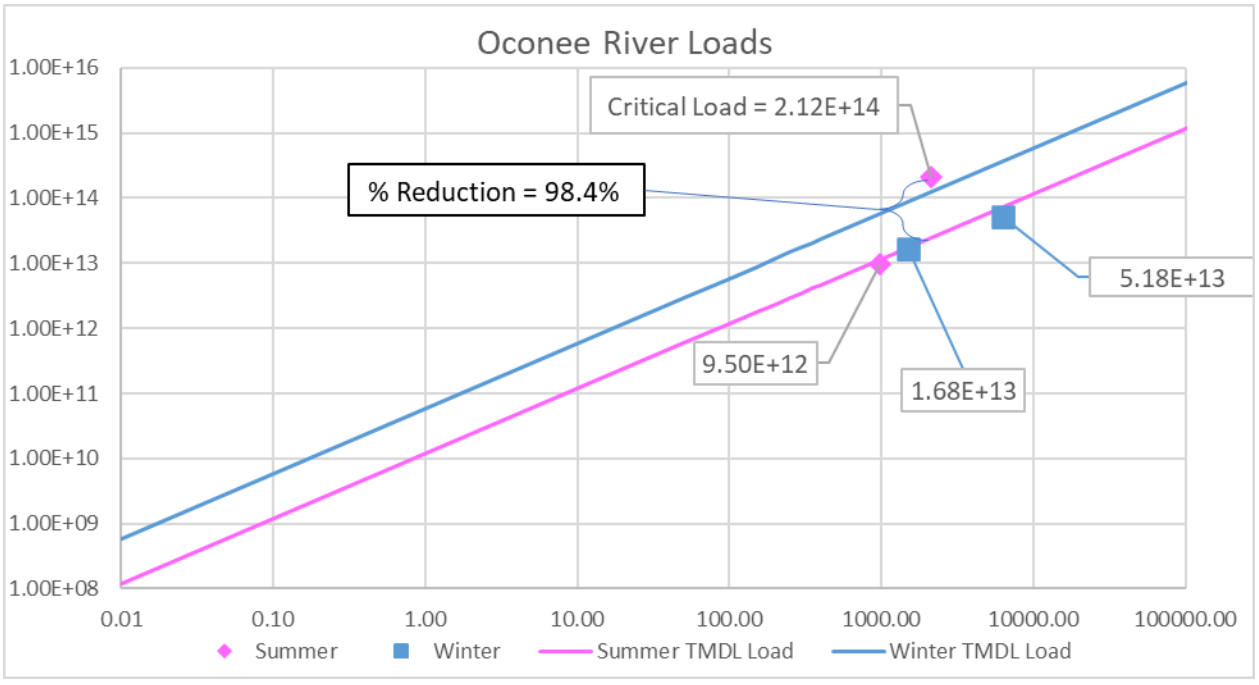

Figure A-6: Oconee River Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves for both Sampling Stations

Table A-9: RV_03_16783 – Pearson Creek at College Street near Monticello, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/07/2021	80	15.03				
02/24/2021	210	19.18				
03/10/2021	800	12.85				
05/17/2021	800	5.25				
05/26/2021	**13000**	3.45	**4488**	3.70	6.29E+11	2.80E+10
06/02/2021	**30000**	3.06				
06/07/2021	1300	3.05				

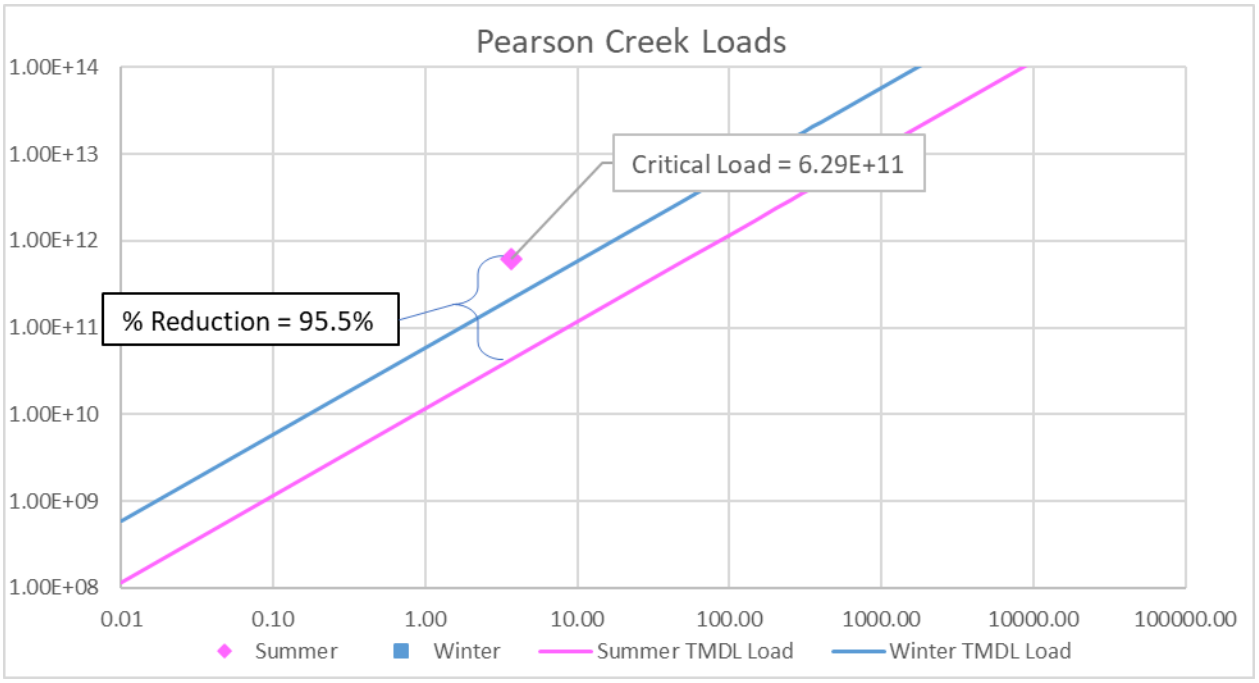

Figure A-7: Pearson Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-10: RV_03_ 17797 – Pearson Creek at Maddux Street near Monticello, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/07/2021	500	8.71				
02/24/2021	300	11.11				
03/10/2021	220	7.45				
05/17/2021	300	3.04	**246**	2.15	2.00E+10	1.62E+10
05/26/2021	230	2.00				
06/02/2021	230	1.77				
06/07/2021	230	1.77				

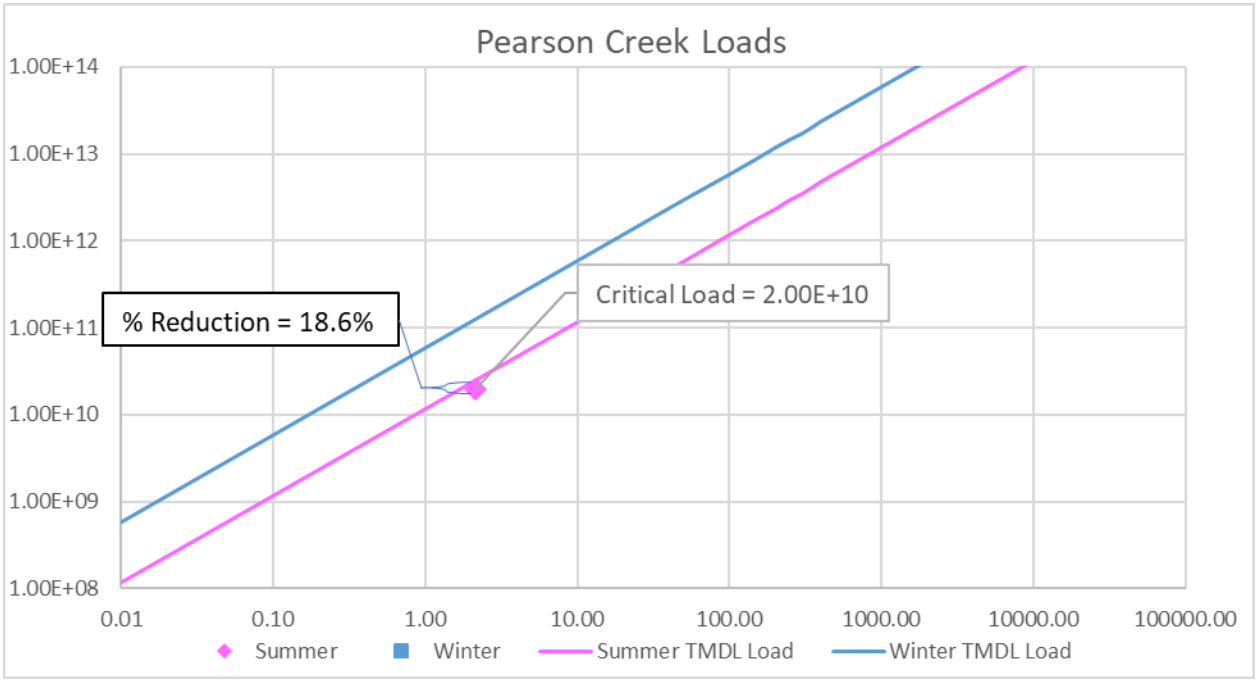

Figure A-8: Pearson Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-11: RV_03_668 – Rose Creek at Antioch Church Road
Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
02/17/2014	210	43.59	182	39.44	2.71E+11	2.99E+11
02/27/2014	80	30.62				
03/05/2014	130	25.27				
03/17/2014	500	58.30				
05/20/2014	800	31.96	**612**	20.25	4.69E+11	1.53E+11
05/28/2014	500	20.59				
06/02/2014	500	16.04				
06/16/2014	700	12.42				
08/28/2014	230	3.34	**443**	6.42	1.08E+11	4.86E+10
09/04/2014	210	8.00				
09/16/2014	**1800**	7.93				
12/09/2014	300	10.36	**333**	9.32	1.17E+11	7.06E+10
12/11/2014	300	8.16				
12/15/2014	170	8.93				
12/17/2014	800	9.84				

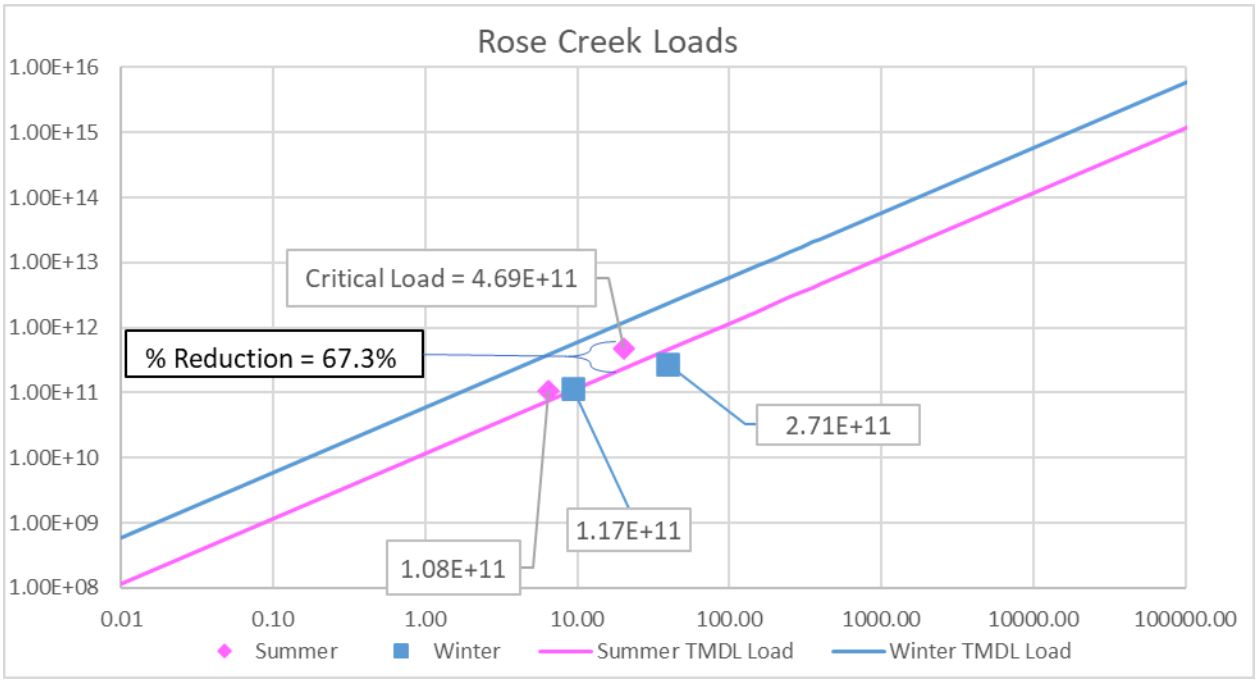

Figure A-9: Rose Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-12: RV_03_17786 – Rum Creek at Perry Dairy Road near Dublin, GA, Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
03/02/2021	80	3.68	51	4.32	8.32E+09	3.27E+10
03/09/2021	20	5.43				
03/11/2021	60	3.63				
03/22/2021	70	4.54				
06/14/2021	230	1.38	**240**	1.46	1.32E+10	1.10E+10
06/21/2021	500	2.24				
06/28/2021	170	1.17				
06/30/2021	170	1.04				

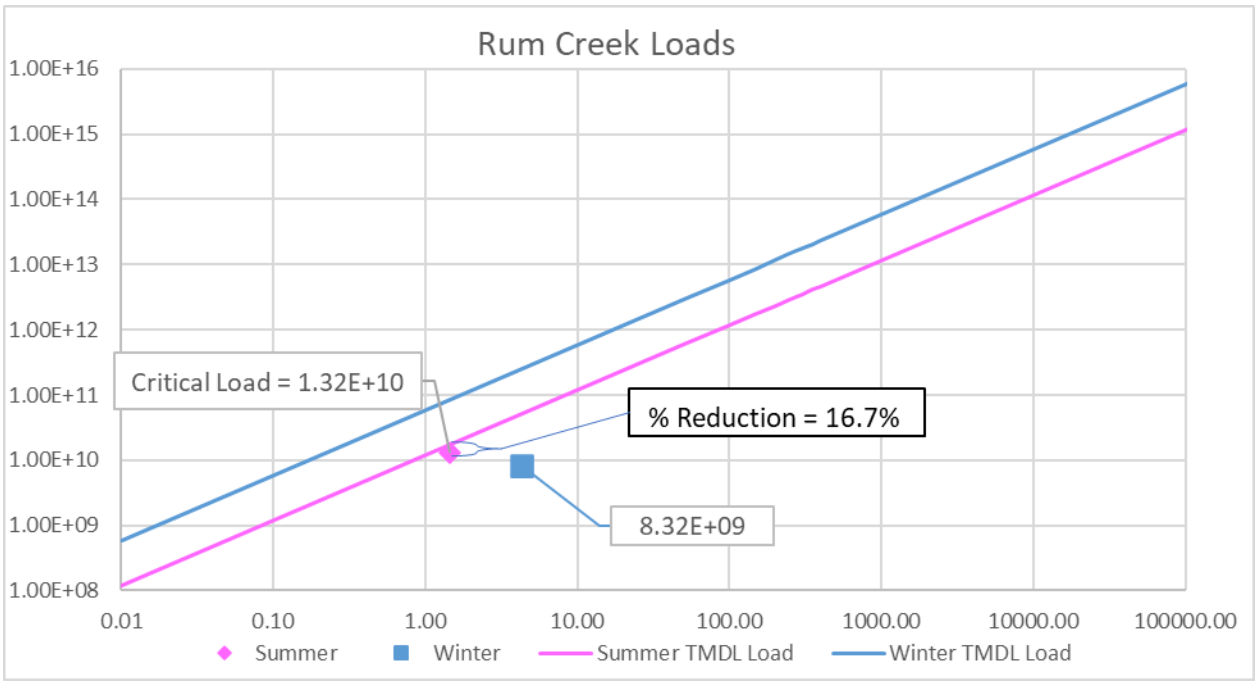

Figure A-10: Rum Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-13: RV_03_5061 – Tributary to Limestone Creek at State Road 56 near Mt. Vernon, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
03/09/2015	130	0.47	**287**	0.53	5.70E+09	3.97E+09
03/18/2015	80	0.49				
03/25/2015	130	0.67				
04/01/2015	**5000**	0.47				
05/11/2015	300	0.42	**1243**	0.43	2.03E+10	3.27E+09
05/14/2015	800	0.37				
06/01/2015	**8000**	0.51				
09/02/2015	**24000**	0.34				
11/18/2015	800	0.93	**688**	0.72	1.86E+10	5.42E+09
11/30/2015	800	0.71				
12/07/2015	500	0.62				
12/10/2015	700	0.59				

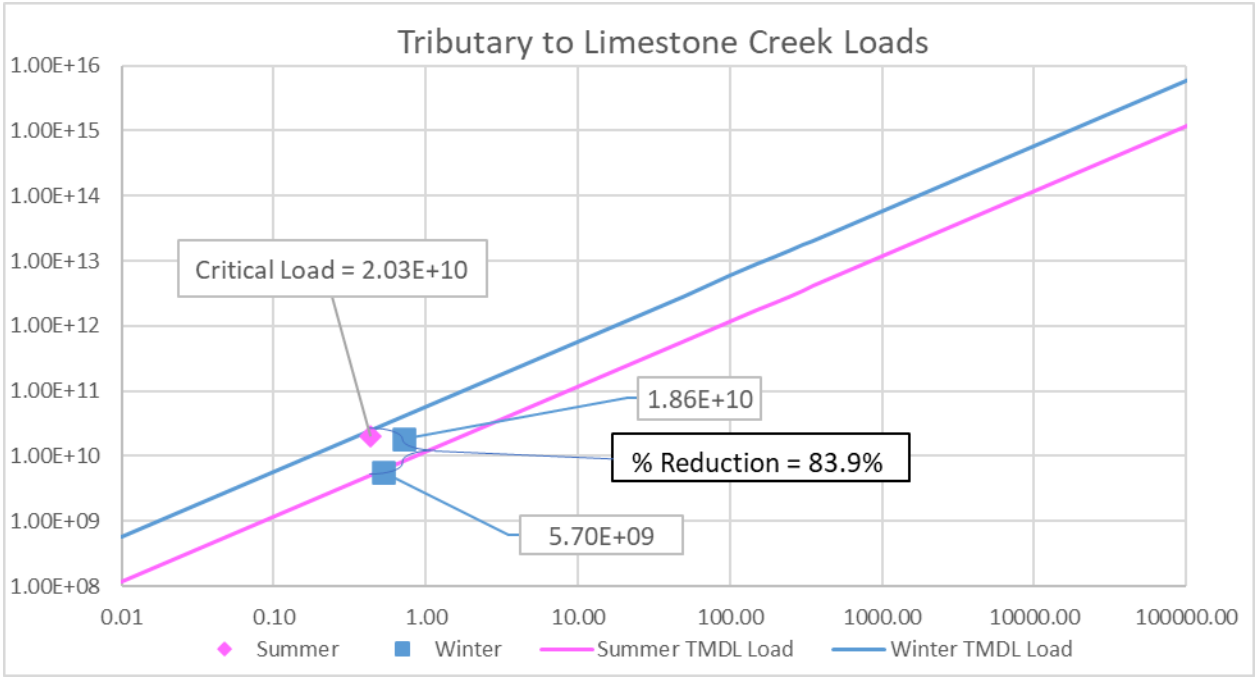

Figure A-11: Tributary to Limestone Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-14: RV_03_5121 – Tributary to Pittman Branch at Brook Hollow Way near Mansfield, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/22/2015	230	0.65	74	0.91	2.54E+09	6.90E+09
01/28/2015	80	0.89				
02/03/2015	20	0.99				
02/11/2015	80	1.12				
05/20/2015	500	0.40	**5264**	0.52	1.04E+11	3.94E+09
05/27/2015	**24000**	0.49				
06/02/2015	**8000**	0.87				
06/08/2015	**8000**	0.32				
08/20/2015	300	0.23	**332**	0.24	2.96E+09	1.78E+09
08/31/2015	270	0.29				
09/14/2015	500	0.22				
09/16/2015	300	0.21				
11/02/2015	**50000**	17.49	**2153**	6.52	5.31E+11	4.94E+10
11/09/2015	**1100**	5.75				
11/18/2015	230	1.73				
11/23/2015	**1700**	1.10				

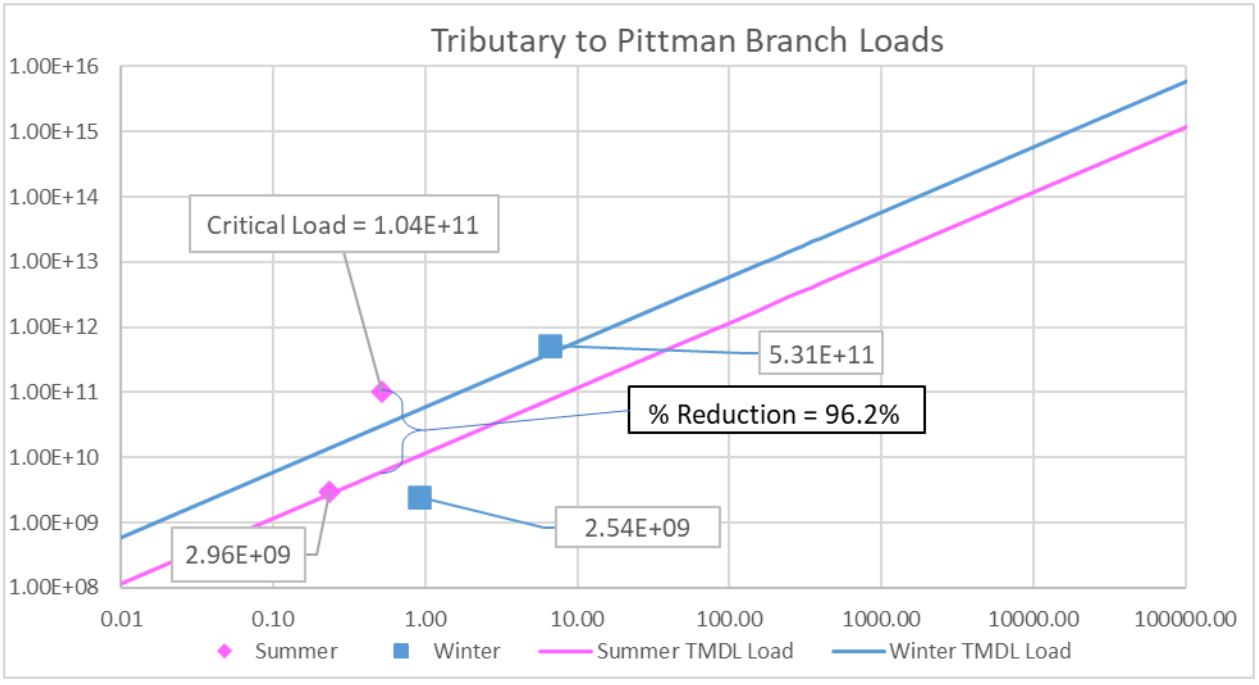

Figure A-12: Tributary to Pittman Branch Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-15: RV_03_17818 – Tributary to White Oak Creek at Bonner Street near Monticello, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/07/2021	300	1.62				
02/24/2021	300	2.07				
03/10/2021	300	1.39				
05/17/2021	300	0.57	**1052**	0.40	1.59E+10	3.03E+09
05/26/2021	300	0.37				
06/02/2021	**1700**	0.33				
06/07/2021	**8000**	0.33				

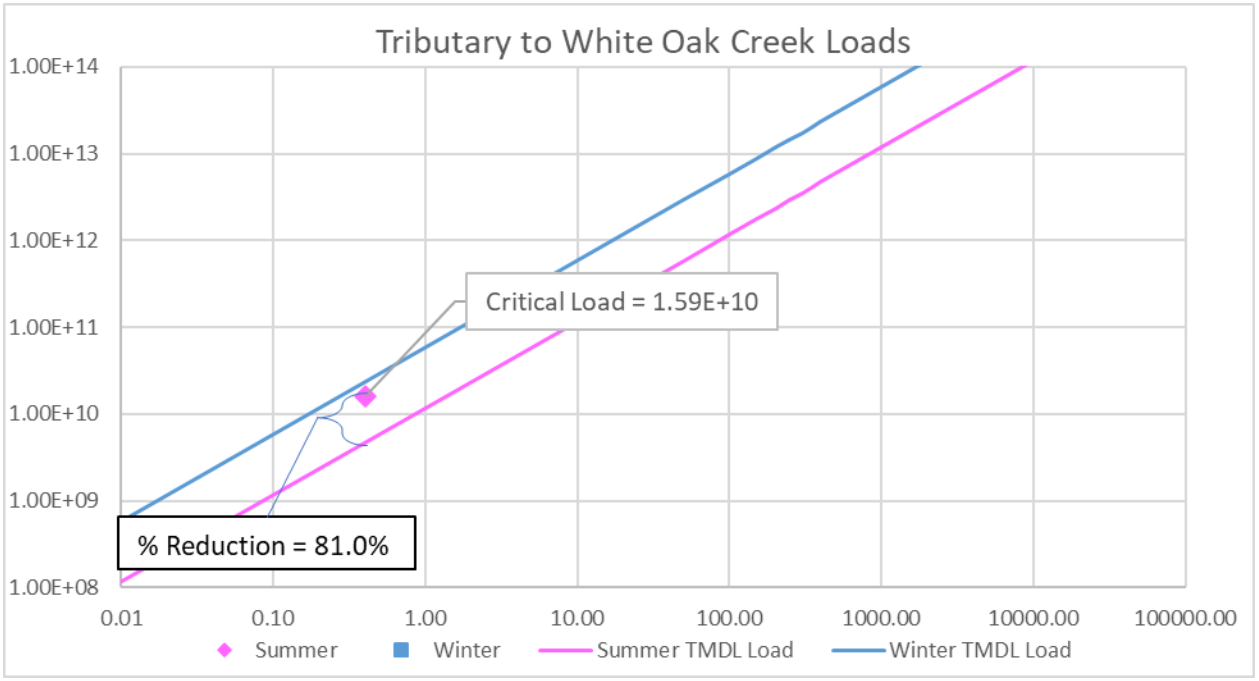

Figure A-13: Tributary to White Oak Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-16: RV_03_17817 – Tributary to White Oak Creek at Jordan Street near Monticello, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
01/07/2021	10	1.96				
02/24/2021	800	2.50				
03/10/2021	**1100**	1.68				
05/17/2021	**5000**	0.69	**1242**	0.48	2.27E+10	3.66E+09
05/26/2021	170	0.45				
06/02/2021	800	0.40				
06/07/2021	**3500**	0.40				

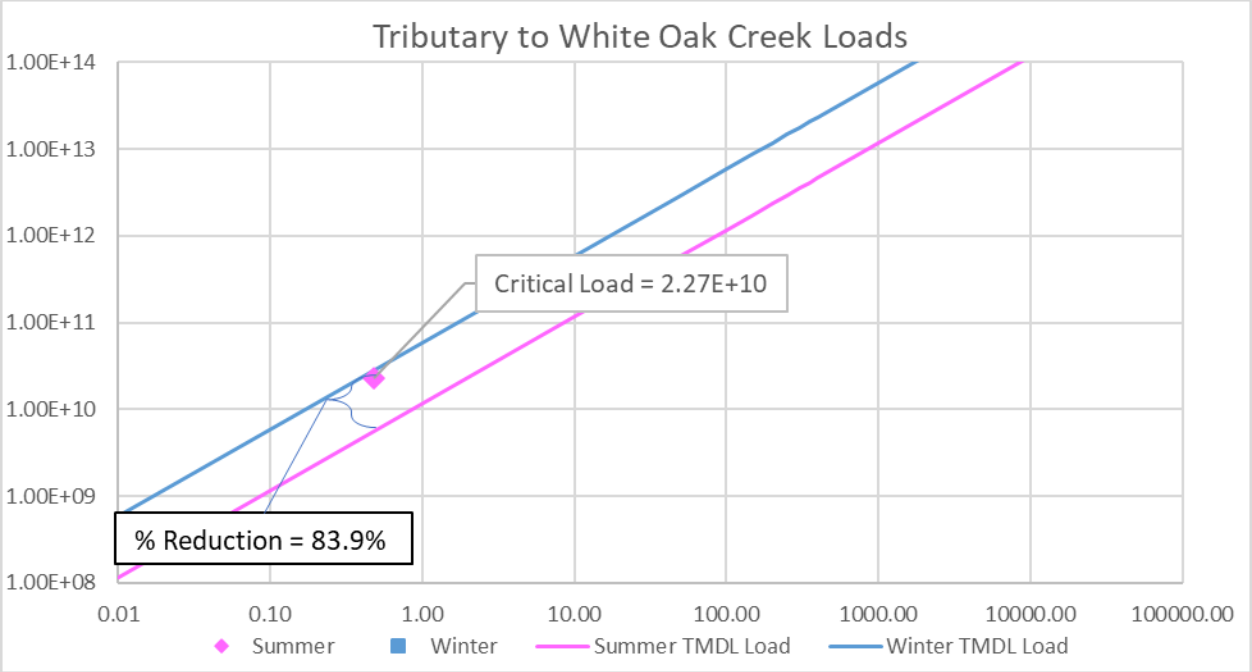

Figure A-14: Tributary to White Oak Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-17: RV_03_17813 – Turkey Creek at MLK Jr Drive near Eatonton, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
02/08/2021	210	4.89	**2673**	18.34	1.86E+12	1.39E+11
02/15/2021	**11000**	39.52				
02/17/2021	**13000**	17.77				
02/22/2021	**1700**	11.18				
05/03/2021	**1300**	6.19	**341**	4.62	5.96E+10	3.50E+10
05/06/2021	500	5.80				
05/10/2021	260	4.01				
05/17/2021	80	2.47				
08/02/2021	500	0.67				

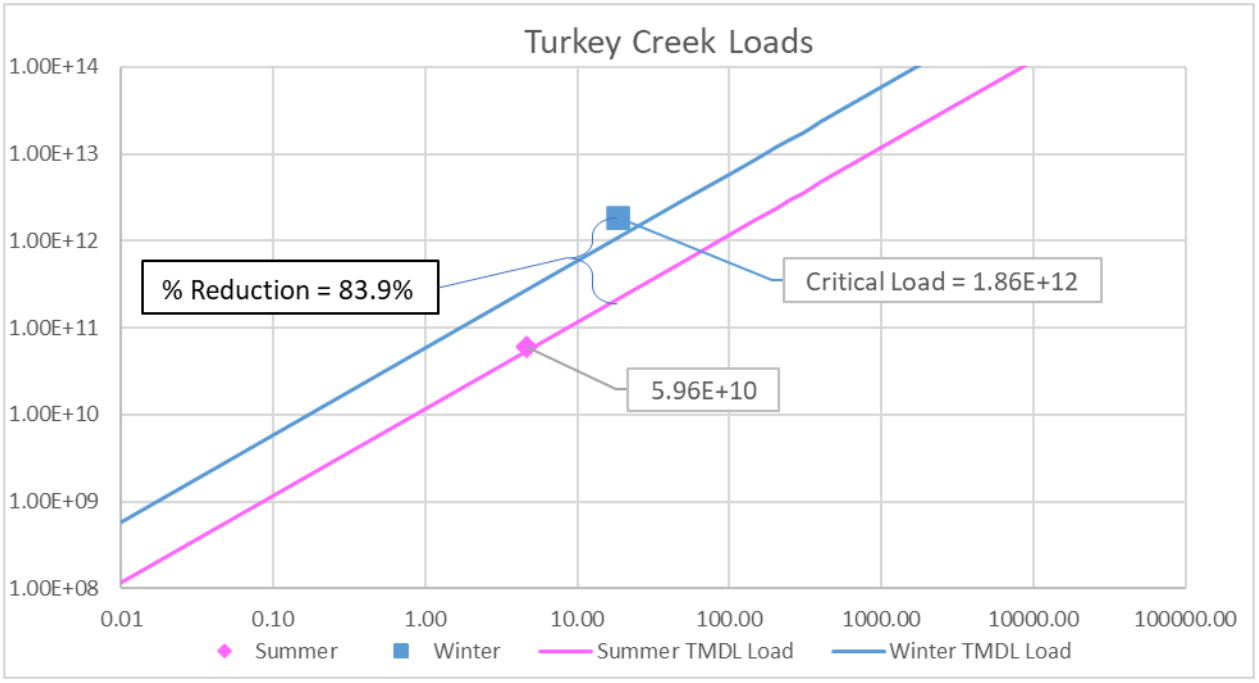

Figure A-15: Turkey Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves

Table A-18: RV_03_17292 – Whitten Creek at SR 15 near White Plains, GA Water Quality Monitoring Data

Date	Observed Fecal coliform (Count/100 mL)	Estimated Instantaneous Flow on Sample Day (cfs)	Geometric Mean (counts/100 mL)	Mean Flow (cfs)	Geometric Mean Fecal Coliform Loading (counts/30 days)	Geometric Mean TMDL Fecal Coliform Loading (counts/30 days)
03/05/2018	230	17.23				
08/13/2018	20	8.15				
10/16/2018	500	9.33	**3476**	113.74	1.50E+13	8.61E+11
11/13/2018	**24000**	165.95				
11/13/2018	**3500**	165.95				

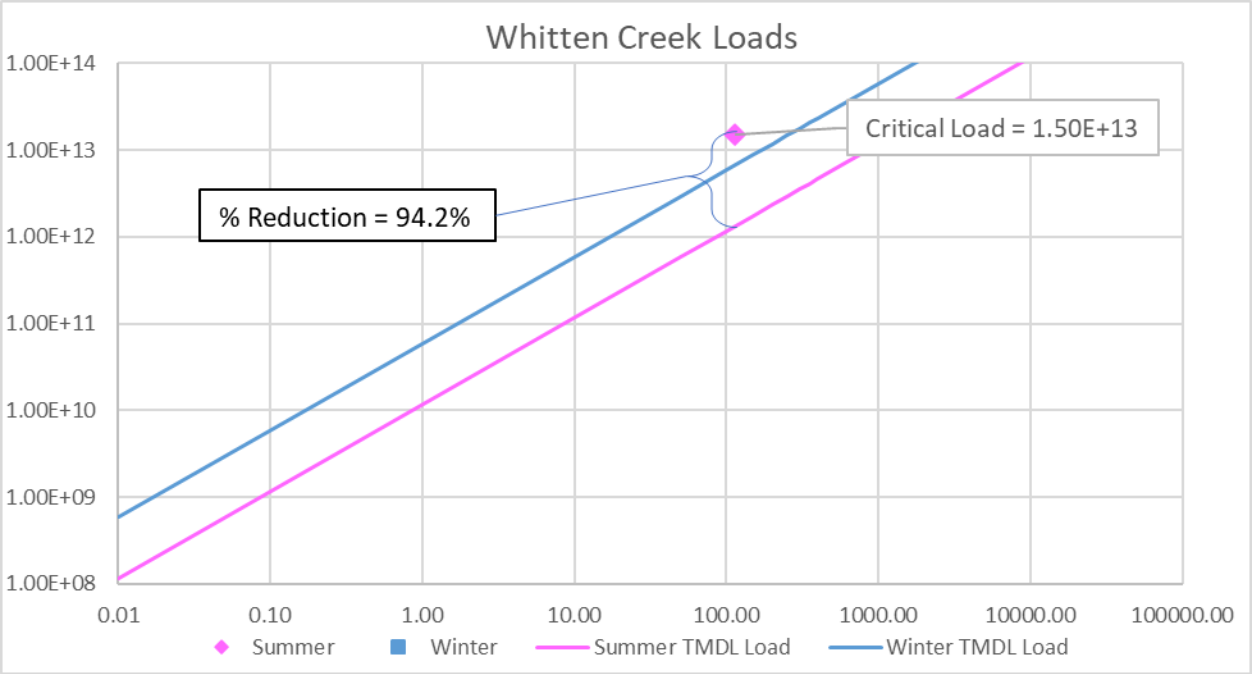

Figure A-16: Whitten Creek Fecal Coliform Geometric Mean Loads and Summer and Winter TMDL Curves