Final
Total Maximum Daily Load (TMDL)
for
Inman Creek

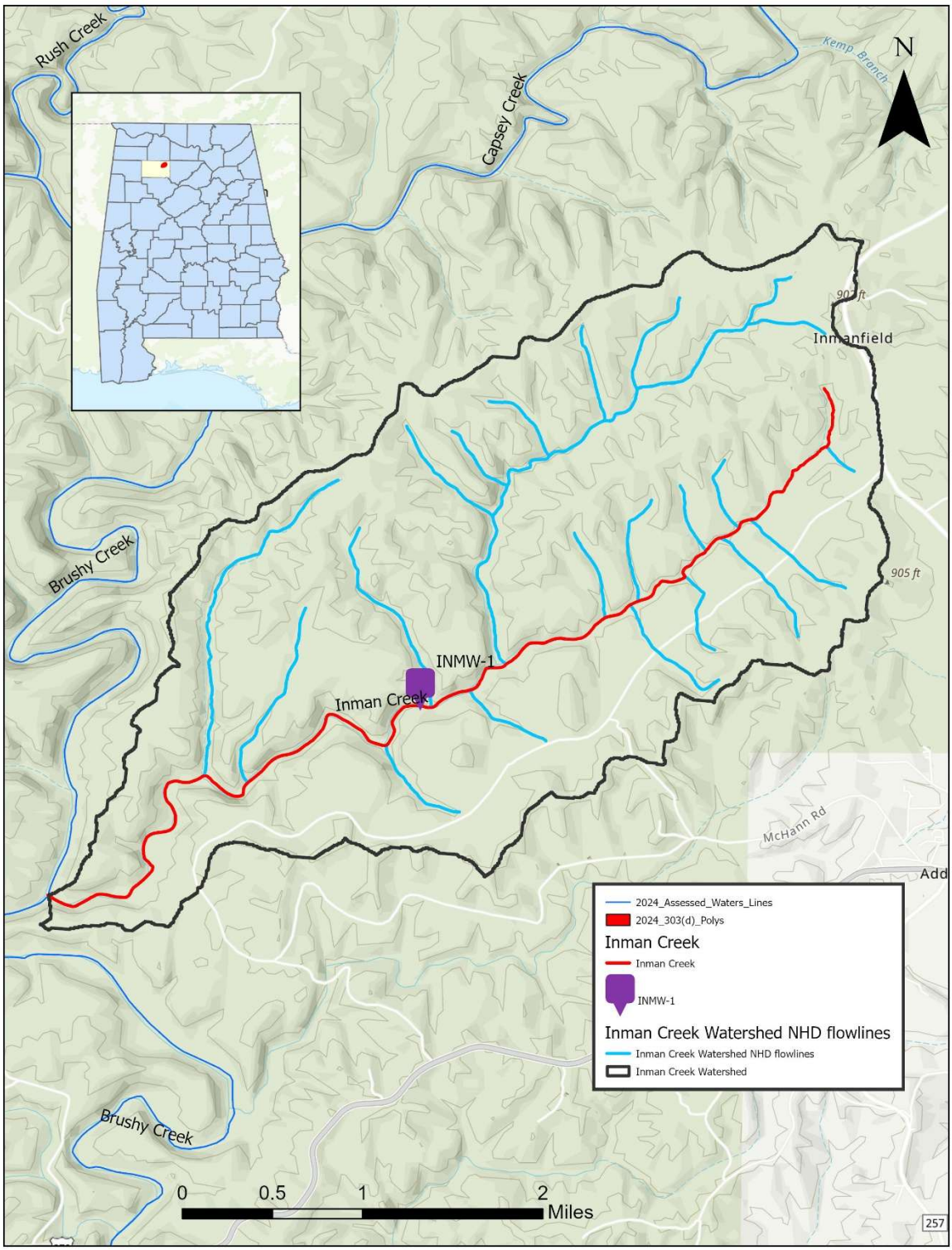
Assessment Unit ID Number
AL03160110-0203-110

Winston County

Pathogens (*E. coli*)

Alabama Department of Environmental Management
Water Quality Branch
Water Division
July 2026

Figure 1.1 Map of Inman Creek Watershed and ADEM Sampling Station



Contents

List of Figures

List of Tables

List of Photos

1.0 Executive Summary

Section 303(d) of the Clean Water Act and the Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations (40 CFR Part 130) require states to identify waterbodies which are not meeting their designated uses and to determine the total maximum daily load (TMDL) for pollutants causing the use impairment. A TMDL is the sum of individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources including natural background levels, and a margin of safety (MOS).

Inman Creek, part of the Black Warrior River basin, is currently included on Alabama's §303(d) list for pathogens (*E. coli*) from its source to its confluence with Brushy Creek in Winston County, Alabama. The total length for the impaired segment of Inman Creek is 5.79 miles, and the total drainage area of the Inman Creek watershed is 7.9 square miles. The impaired segment has a use classification of Fish & Wildlife (F&W).

Inman Creek was first included on the §303(d) list for pathogens in 2020 based on ADEM monitoring data collected in 2017 at station INMW-1. Inman Creek has subsequently been listed for pathogens on the 2022 and 2024 §303(d) lists of impaired waterbodies.

In 2024, sampling studies were performed by ADEM to further assess the water quality of the impaired stream. For the purposes of this TMDL, the 2024 data will be used to assess the water quality of Inman Creek because it provides the best picture of the current water quality of the stream. The 2026 edition of *Alabama's Water Quality Assessment and Listing Methodology*, prepared by ADEM, provides the rationale for the Department to use the most recent data to prepare a TMDL for an impaired waterbody. This TMDL will be developed from *E. coli* data collected at station INMW-1. The collective bacterial data is listed in Appendix 7.2, Tables 7.1 and 7.2 for reference.

ADEM collected 16 *E. coli* samples at station INMW-1 in 2024. Two geometric mean studies were also conducted at this station on Inman Creek in 2024. According to the data, Inman Creek was not meeting the pathogen criteria applicable to its use classification of F&W. Therefore, this TMDL has been developed for pathogens (*E. coli*) for the listed reach.

A mass balance approach was used for calculating the pathogen TMDL for Inman Creek. The mass balance approach utilizes the conservation of mass principle. The TMDL was calculated using the single sample or geometric mean sample exceedance event which resulted in the highest percent reduction. Existing loads were calculated by multiplying the *E. coli* concentrations times the respective in-stream flows and a conversion factor. In the same manner as existing loads were calculated, allowable loads were calculated for the single sample *E. coli* target of 268.2 colonies/100 ml (298 colonies/100 ml – 10% Margin of Safety) and geometric mean *E. coli* target of 113.4 colonies/100 ml (126 colonies/100 ml – 10% Margin of Safety).

Table 1.1 is a summary of the TMDL, defined as the maximum allowable *E. coli* loading under critical conditions for Inman Creek.

Table 1.1 *E. coli* TMDL for Inman Creek

TMDL[a]	Margin of Safety (MOS)	Waste Load Allocation (WLA)[b]			Load Allocation (LA)	
		WWTPs[c]	Stormwater (MS4s and other NPDES sources)[d]	Leaking Collection Systems[e]		
(col/day)	(col/day)	(col/day)	(% reduction)	(col/day)	(col/day)	(% reduction)
3.67E+10	3.67E+09	NA	NA	0	3.31E+10	97%

Note: NA = not applicable
a. TMDL was established using the single sample criterion of 298 colonies/100ml.
b. Future CAFOs will be assigned a wasteload allocation (WLA) of zero.
c. Future WWTPs must meet the applicable instream water quality criteria for pathogens at the point of discharge.
d. Future MS4 areas and other NPDES-permitted stormwater sources will demonstrate consistency with the requirements of this TMDL through implementation and maintenance of BMPs on a case-by-case basis.
e. The objective for leaking collection systems is a WLA of zero. It is recognized, however, that a WLA of 0 colonies/day may not be practical. For these sources, the WLA is interpreted to mean a reduction in *E. coli* loading to the maximum extent practicable, consistent with the requirement that these sources not contribute to a violation of the water quality criteria for *E. coli*.

Compliance with the terms and conditions of future National Pollutant Discharge Elimination System (NPDES) permits will effectively implement the WLA and demonstrate consistency with the assumptions and requirements of the TMDL. Required load reductions in the load allocation (LA) portion of this TMDL can be implemented through voluntary measures and may be eligible for CWA §319 grants.

The Department recognizes that adaptive implementation of this TMDL will be needed to achieve applicable water quality criteria and we are committed to targeting load reductions to improve water quality in the Inman Creek watershed. As additional data and/or information becomes available, it may become necessary to revise and/or modify the TMDL accordingly.

2.0 Basis for §303(d) Listing

2.1 Introduction

Section 303(d) of the Clean Water Act and EPA's Water Quality Planning and Management Regulations (40 CFR Part 130) require states to identify waterbodies which are not meeting their designated uses and to determine the TMDL for pollutants causing use impairment. The TMDL process establishes the allowable loading of pollutants for a waterbody based on the relationship between pollution sources and instream water quality conditions, so that states can establish water-quality based controls to reduce pollution and restore and maintain the quality of their water resources (USEPA, 1991).

The State of Alabama has identified 5.79 miles of Inman Creek as impaired for pathogens. The §303(d) listing for pathogens was originally reported on Alabama's 2020 List of Impaired Waters based on 2017 ADEM monitoring data from station INMW-1. Inman Creek has subsequently been listed for pathogens on the 2022 and 2024 §303(d) lists of impaired waterbodies.

2.2 Problem Definition

Waterbody Impaired:	Inman Creek – from its source to Brushy Creek
Impaired Reach Length:	5.79 miles
Impaired Drainage Area:	7.9 square miles
Water Quality Standard Violation:	Pathogens (single sample, geometric mean)
Pollutant of Concern:	Pathogens (*E. coli*)
Water Use Classification:	Fish & Wildlife (F&W)

Usage Related to Classification:
Usage of waters in the F&W classification is described in ADEM Admin. Code r. 335-6-10-.09(5)(a), (b), (c) and (d).

(a) Best usage of waters: fishing, propagation of fish, aquatic life, and wildlife.

(b) Conditions related to best usage: the waters will be suitable for fish, aquatic life and wildlife propagation. The quality of salt and estuarine waters to which this classification is assigned will also be suitable for the propagation of shrimp and crabs.

(c) Other usage of waters: it is recognized that the waters may be used for incidental water contact year-round and whole body water-contact recreation during the months of May through October, except that water contact is strongly discouraged in the vicinity of discharges or other conditions beyond the control of the Department or the Alabama Department of Public Health.

(d) Conditions related to other usage: the waters, under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor swimming areas and will be considered satisfactory for swimming and other whole body water-contact sports.

E. coli Criteria:
Criteria for acceptable bacteria levels for the F&W use classification are described in ADEM Admin. Code R. 335-6-10-.09(5)(e)7(i) and (ii) as follows:

(i) In non-coastal waters, bacteria of the E. coli group shall not exceed a geometric mean of 548 colonies/100 ml; nor exceed a maximum of 2,507 colonies/100 ml in any sample. In coastal waters, bacteria of the enterococci group shall not exceed a maximum of 275 colonies/100 ml in any sample. The geometric mean shall be calculated from no less than five samples collected at a given station over a 30-day period at intervals not less than 24 hours.

(ii) For incidental water contact and whole body water-contact recreation during the months of May through October, the bacterial quality of water is acceptable when a sanitary survey by the controlling health authorities reveals no source of dangerous pollution and when the geometric mean E. coli organism density does not exceed 126 colonies/100 ml nor exceed a maximum of 298 colonies/100 ml in any sample in non-coastal waters. In coastal waters, bacteria of the enterococci group shall not exceed a geometric mean of 35 colonies/100 ml nor exceed a maximum of 158 colonies/100 ml in any sample. The geometric mean shall be

> *calculated from no less than five samples collected at a given station over a 30-day period at intervals not less than 24 hours. When the geometric bacterial coliform organism density exceeds these levels, the bacterial water quality shall be considered acceptable only if a second detailed sanitary survey and evaluation discloses no significant public health risk in the use of the waters. Waters in the immediate vicinity of discharges of sewage or other wastes likely to contain bacteria harmful to humans, regardless of the degree of treatment afforded these wastes, are not acceptable for swimming or other whole body water-contact sports.*

Criteria Exceeded:
Inman Creek was first included on the §303(d) list for pathogens in 2020 based on ADEM's 2017 *E. coli* data collected at station INMW-1. Of the eight *E. coli* samples collected at station INMW-1, two exceeded the applicable single sample criterion. The listing data can be found in Appendix 7.2, Table 7.1.

3.0 Technical Basis for TMDL Development

3.1 Water Quality Target Identification

For the purpose of this TMDL, a single sample *E. coli* target of 268.2 colonies/100 ml will be used for Inman Creek. This target was derived by using a 10% explicit margin of safety from the single sample maximum criterion of 298 colonies/100 ml. This target is considered protective of water quality standards and should not allow the single sample maximum criterion to be exceeded. In addition, a geometric mean target of 113.4 colonies/100 ml will be used for a series of at least five samples taken no less than 24 hours apart over the course of 30 days. This geometric mean target was also derived by using a 10% explicit margin of safety from the geometric mean criterion of 126 colonies/100 ml. This target is considered protective of water quality standards and should not allow the geometric mean criterion to be exceeded.

3.2 Source Assessment

3.2.1 Point Sources in the Inman Creek Watershed

A point source can be defined as a discernable, confined, and discrete conveyance from which pollutants are or may be discharged to surface waters. Point source contributions can typically be attributed to municipal wastewater facilities, illicit discharges, and leaking sewer systems in urban areas. Municipal wastewater treatment facilities are permitted through the NPDES process administered by ADEM. In urban settings, sewer lines typically run parallel to streams in the floodplain. If a leaking sewer line is present, high concentrations of bacteria can flow into the stream or leach into the groundwater. Illicit discharges are found at facilities that are discharging bacteria when not permitted, or when the pathogens criterion established in the issued NPDES permit is not being upheld.

There are currently no NPDES-regulated point sources in the Inman Creek watershed. In addition, the Inman Creek watershed does not presently qualify as a municipal separate storm sewer system (MS4) area. Any future NPDES-regulated discharger that is considered by the Department to be a pathogen source will be required to demonstrate consistency with the assumptions and requirements of this TMDL.

There are currently no Concentrated Animal Feeding Operations (CAFOs) or Voluntary Animal Feeding Operations (AFOs) in the Inman Creek watershed. AFOs/CAFOs are required to implement and maintain effective best management practices (BMPs) that meet or exceed Natural Resources Conservation Service (NRCS) technical standards and guidelines, and the ADEM AFO/CAFO rules currently prohibit point

source discharges of pollutants from these facilities and their associated land application activities. As a result, future AFOs/CAFOs will receive a wasteload allocation of zero.

There are currently no registered sites in the Inman Creek watershed where land application of by-products for beneficial use is present. Beneficial use sites are regulated by ADEM's Land Division and are required to implement appropriate BMPs and agronomic application rates to protect the environment.

Sanitary sewer overflows (SSOs) have the potential to severely impact water quality and can often result in the violation of water quality standards. It is the responsibility of the NPDES wastewater discharger or collection system operator for non-permitted "collection only" systems to ensure that releases do not occur. Unfortunately, releases to surface waters from SSOs are not always preventable or reported. From review of ADEM files, there have been no recent SSOs reported in the Inman Creek watershed.

3.2.2 Nonpoint Sources in the Inman Creek Watershed

Nonpoint sources of *E. coli* bacteria do not have a defined discharge point but rather occur over the entire length of a stream or waterbody. On the land surface, *E. coli* bacteria can accumulate over time in the soil and then are washed off during rain events. As the runoff transports the sediment over the land surface, more *E. coli* bacteria are collected and carried to the stream or waterbody. Therefore, there is some net loading of *E. coli* bacteria into the stream as dictated by the watershed hydrology.

Agricultural land can be a source of *E. coli* bacteria. Runoff from pastures, animal feeding areas, improper land application of animal wastes, and animals with direct access to streams are all mechanisms that can contribute *E. coli* bacteria to waterbodies. To account for the potential influence from animals with direct access to stream reaches in the watershed, *E. coli* loads can be calculated as a direct source into the stream.

E. coli bacteria can also originate from forested areas due to the presence of wild animals such as deer, raccoons, turkey, waterfowl, etc. Wildlife deposit feces onto land surfaces where it can be transported during rainfall events to nearby streams. Control of these sources is usually limited to land management BMPs and may be impracticable in most cases. As a result, forested areas are not specifically targeted in this TMDL.

E. coli loading from urban areas is potentially attributable to multiple sources including storm water runoff, unpermitted discharges of wastewater, runoff from improper disposal of waste materials, failing septic tanks, and domestic animals. Septic systems may be direct or indirect sources of bacterial pollution via ground and surface waters. Onsite septic systems have the potential to deliver *E. coli* bacteria to surface waters due to system failure and malfunction.

3.3 Land Use Assessment

Land use for the Inman Creek watershed was determined using ArcMap with land use datasets derived from the 2021 National Land Cover Dataset (NLCD). Table 3.1, Figure 3.1, and Figure 3.2 display the land use areas for the Inman Creek watershed.

The majority of the Inman Creek watershed is forested/natural (88.7%). Other land uses include agriculture (7.99%), developed land (3.26%) and open water (0.05%). If not managed properly, agriculture can have significant nonpoint source impacts.

Table 3.1 Land Use Areas for the Inman Creek Watershed

Cumulative Land Use	Mi^2	Acres	Percent
Open Water	0.00	2.53	0.05%
Forested/Natural	7.01	4484.17	88.69%
Agriculture	0.63	403.97	7.99%
Developed (cumulative)	0.26	164.83	3.26%
Total	**7.90**	**5056.00**	**100.0%**

Figure 3.1 Land Use Graph for the Inman Creek Watershed

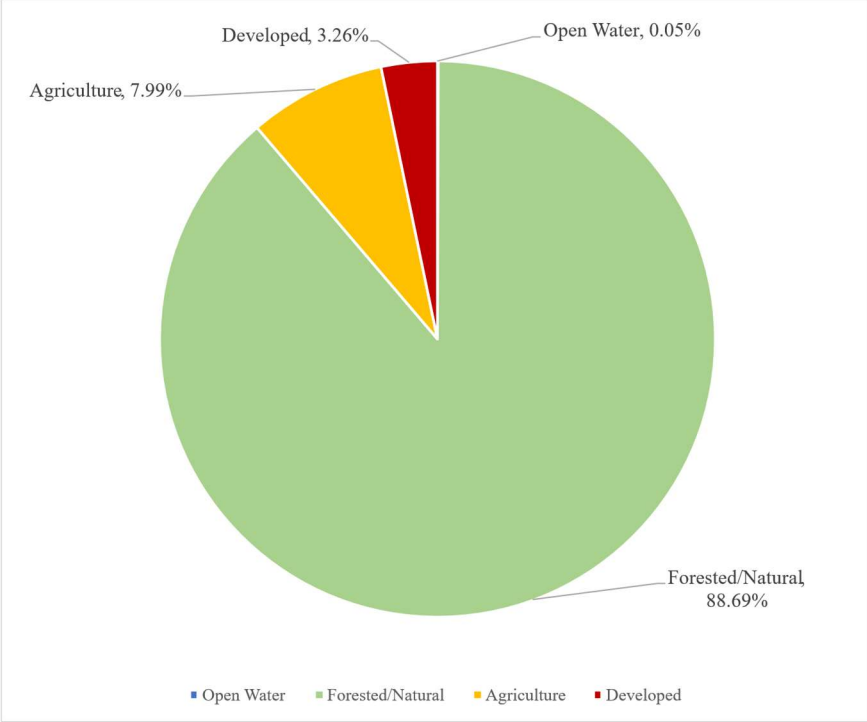
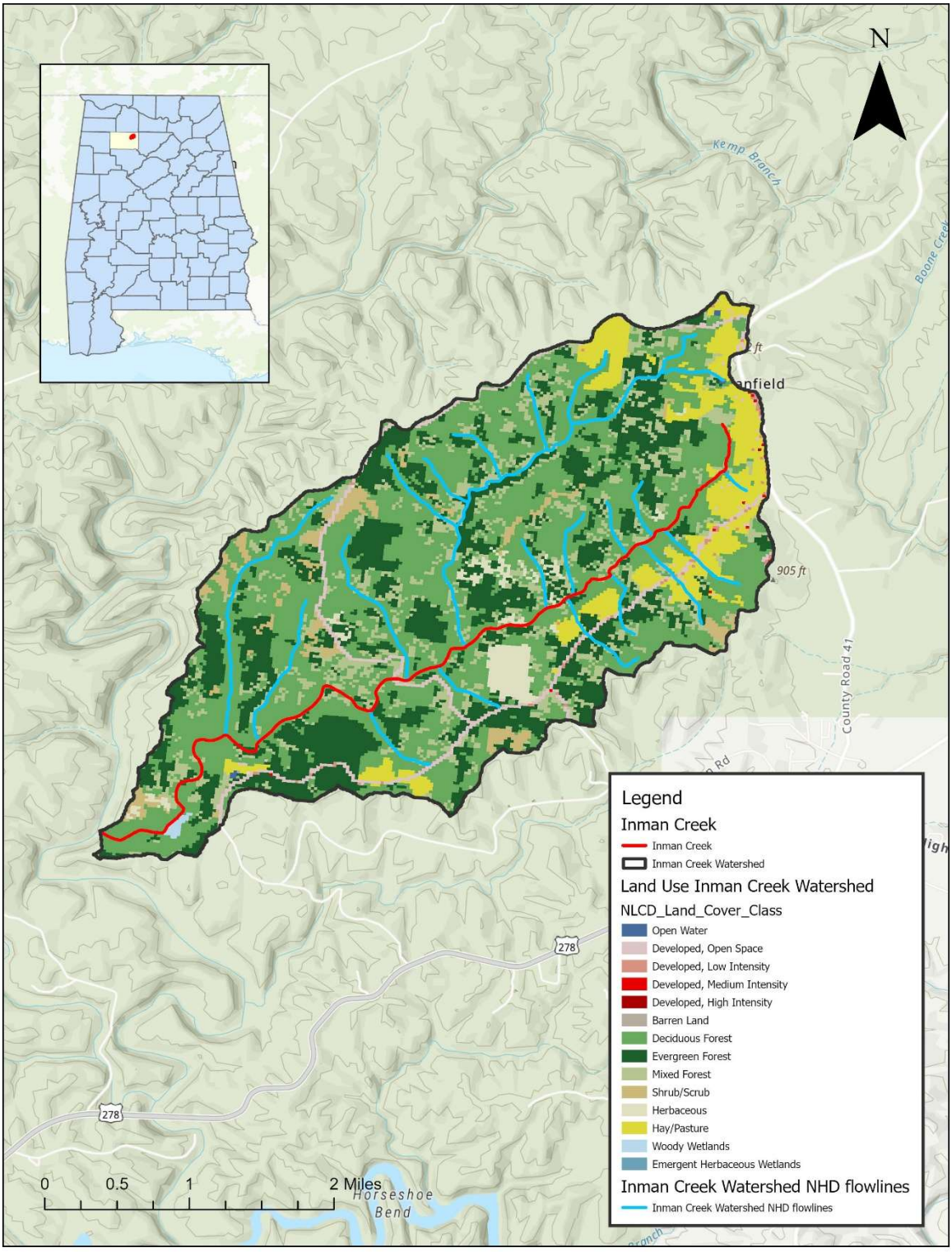


Figure 3.2 Land Use Map for the Inman Creek Watershed



3.4 Linkage Between Numeric Targets and Sources

The majority of the Inman Creek watershed's land use is forested/natural. Approximately eight percent of the watershed is agriculture. Pollutant loadings from forested areas tend to be low due to their filtering capabilities and will be considered as background conditions. The most likely sources of pathogen loadings in Inman Creek are from agricultural land uses. It is not considered a logical approach to calculate individual components for nonpoint source loadings. Hence, there will not be individual loads or reductions calculated for the various nonpoint sources. The loadings and reductions will only be calculated as a single total nonpoint source load and reduction.

3.5 Data Availability and Analysis

In 2024, ADEM collected water quality data on Inman Creek at station INMW-1. Figure 1.1 and Table 3.2 display the station location and description, respectively. The 2024 data, shown in Table 3.3, will be used for this TMDL. The January 2026 edition of *Alabama's Water Quality Assessment and Listing Methodology,* prepared by ADEM, provides the rationale for the Department to use the most recent data to prepare a TMDL for an impaired waterbody.

Table 3.2 ADEM Sampling Station in the Inman Creek Watershed

Station ID	Station Location	Latitude	Longitude
INMW-1	Unnamed service road in the Bankhead National Forest	34.2159	-87.224

Of the 16 *E. coli* samples collected in 2024, five violated the applicable single sample maximum criterion for the Fish and Wildlife use classification. In addition, the July and September/October 2024 geometric mean values exceeded the applicable geometric mean criterion. The 2024 data for INMW-1 is shown below in Table 3.3.

Table 3.3 2024 *E. coli* data at INMW-1

Station	Visit Date	*E. coli* (col/100ml)	*E. coli* dc*	*E. coli* Criterion (col/100ml)	Geometric Mean (col/100 ml)	Geometric Mean Criterion (col/100 ml)	Flow (cfs)
INMW-1	3/12/2024	43.2	H	2507			10.27
INMW-1	4/3/2024	44.3	H	2507			6.63
INMW-1	5/7/2024	125.9	H	298			3.03
INMW-1	6/5/2024	155.3	H	298			2.24
INMW-1	7/2/2024	59.4		298			-0.34
INMW-1	7/9/2024	1413.6		298			0.35
INMW-1	7/15/2024	48.7	H	298	470.0	126	0.1^
INMW-1	7/18/2024	579.4		298			1.07
INMW-1	7/23/2024	9678.4	G	298			5.04
INMW-1	8/14/2024	64.4	H	298			
INMW-1	9/24/2024	275.5		298			1.46
INMW-1	9/26/2024	307.6		298			8.58
INMW-1	10/1/2024	184.2		298	237.8	126	6.25
INMW-1	10/4/2024	344.4		298			2.89
INMW-1	10/8/2024	141.4		298			1.38
INMW-1	10/21/2024	42	H	298			

*H = The analytical holding times for analysis were exceeded.
*G = The actual number was probably greater than the number reported.
^Value is an estimate; flow was not visible at the time of sample collection.

3.6 Critical Conditions/Seasonal Variation

Critical conditions typically occur during the summer months (May-October). This can be explained by the nature of storm events in the summer versus the winter. In summer, periods of dry weather interspersed with thunderstorms allow for the accumulation and dispensing of *E. coli* bacteria into streams, resulting in spikes of *E. coli* bacteria counts. In winter, frequent low intensity rain events are more typical and do not allow for the build-up of *E. coli* bacteria on the land surface, resulting in a more uniform loading rate.

The Inman Creek watershed generally follows the trends described above for the summer months of May through October. The critical condition for this pathogen TMDL was taken to be the one with the highest *E. coli* single sample exceedance value, which was measured at 9678.4 colonies/100 ml. The exceedance occurred at station INMW-1 on July 23, 2024. The flow at the time the sample was collected was 5.04 cfs. The use of the highest exceedance to calculate the TMDL is expected to be protective of water quality in Inman Creek year-round.

3.7 Margin of Safety

There are two methods for incorporating a Margin of Safety (MOS) in the analysis: 1) by implicitly incorporating the MOS using conservative model assumptions to develop allocations, or 2) by explicitly specifying a portion of the TMDL as the MOS and using the remainder for allocations.

The MOS accounts for the uncertainty associated with the limited availability of *E. coli* data used in this analysis. An explicit MOS was applied to the TMDL by reducing the appropriate target criterion concentration by ten percent and calculating a mass loading target with measured flow data. For the F&W classification, the single sample *E. coli* maximum value of 298 colonies/100 ml was reduced by 10% to 268.2 colonies/100 ml. The geometric mean criterion of 126 colonies/ml was also reduced ten percent to 113.4 colonies/100 ml.

4.0 TMDL Development

4.1 Definition of a TMDL

A TMDL is the sum of individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources including natural background levels, and a margin of safety (MOS). The margin of safety can be included either explicitly or implicitly and accounts for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. As discussed earlier, the MOS is explicit in this TMDL. A TMDL can be denoted by the equation:

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

The TMDL is the total amount of pollutant that can be assimilated by the receiving waterbody while achieving water quality standards under critical conditions.

For some pollutants, TMDLs are expressed on a mass loading basis (e.g. pounds per day). However, for pathogens, TMDL loads are typically expressed in terms of organism counts per day (colonies/day), in accordance with 40 CFR 130.2(i).

4.2 Load Calculations

A mass balance approach was used to calculate the pathogen TMDL for Inman Creek. The mass balance approach utilizes the conservation of mass principle. Total mass loads can be calculated by multiplying the *E. coli* concentration, the instream flow, and a conversion factor. Existing loads were calculated for the highest single sample exceedance and the highest geometric mean sample exceedance. In the same manner, allowable loads were calculated for both the single sample criterion and the geometric mean criterion. There were both single sample and geometric mean violations; the TMDL was based on the violation that produced the highest calculated percent reduction to achieve applicable water quality criteria, whether it be the single sample or geometric mean.

Existing Conditions

The **single sample** mass loading was calculated by multiplying the highest single sample exceedance concentration by the flow on the day of the exceedance. The highest exceedance occurred on July 23, 2024, at station INMW-1. The product of the concentration, flow, and the conversion factor gives the total mass loading (colonies per day) of *E. coli* to Inman Creek.

$$\frac{5.04\ \text{ft}^3}{s} \times \frac{9678.4\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{1.19 \times 10^{12}\text{colonies}}{\text{day}}$$

The **geometric mean** mass loading was calculated by multiplying the highest geometric mean exceedance concentration times the average of the stream flows over the geometric mean sampling period. This concentration was calculated based on measurements between July 2, 2024, and July 23, 2024, at station INMW-1. The average streamflow for this time was 1.24 cfs. The product of the average streamflow, the geometric mean value, and the conversion factor gives the total mass loading (colonies per day) of *E. coli* to Inman Creek under the geometric mean exceedance condition.

$$\frac{1.24\ \text{ft}^3}{s} \times \frac{470.0\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{1.43 \times 10^{10}\text{colonies}}{\text{day}}$$

Allowable Conditions

The **allowable load** to the watershed was calculated under the same physical conditions as discussed above for the single sample and geometric mean criteria. This was done by taking the product of the flow and the allowable concentration. This value was then multiplied by the conversion factor to calculate the allowable load. These calculations can be seen below.

For the **single sample** *E. coli* target concentration of 268.2 colonies/100 ml, the allowable *E. coli* loading is:

$$\frac{5.04\ \text{ft}^3}{s} \times \frac{268.2\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{3.31 \times 10^{10}\text{colonies}}{\text{day}}$$

The explicit margin of safety of 29.8 colonies/100 ml equals a daily loading of:

$$\frac{5.04\ \text{ft}^3}{s} \times \frac{29.8\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{3.67 \times 10^{9}\text{colonies}}{\text{day}}$$

For the **geometric mean** *E. coli* target concentration of 113.4 colonies/100 ml, the allowable *E. coli* loading is:

$$\frac{1.24\ \text{ft}^3}{s} \times \frac{113.4\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{3.45 \times 10^9 \text{colonies}}{\text{day}}$$

The explicit margin of safety of 12.6 colonies/100 ml equals a daily loading of:

$$\frac{1.24\ \text{ft}^3}{s} \times \frac{12.6\ \text{colonies}}{100\text{ml}} \times \frac{24{,}465{,}755\ 100\text{ml} * s}{\text{ft}^3 * \text{day}} = \frac{3.83 \times 10^8 \text{colonies}}{\text{day}}$$

The difference in the pathogen loading between the existing condition (violation event) and the allowable condition converted to a percent reduction represents the total load reduction needed to achieve the *E. coli* water quality criteria. The TMDL was calculated as the total daily *E. coli* load to Inman Creek as evaluated at station INMW-1. Table 4.1 shows the existing and allowable *E. coli* loads and required reductions for the Inman Creek watershed.

Table 4.1 *E. coli* Loads and Required Reductions for Inman Creek

Source	Existing Load (col/day)	Allowable Load (col/day)	Required Reduction (col/day)	% Reduction
Single Sample Load	1.19E+12	3.31E+10	1.16E+12	97%
Geometric Mean Load	1.43E+10	3.45E+09	1.09E+10	76%

From Table 4.1, compliance with the single sample criterion of 298 colonies/100 ml requires a reduction in the *E. coli* load of 97%. The TMDL, WLA, LA and MOS values necessary to achieve the applicable *E. coli* criterion are provided in Table 4.2 below.

Table 4.2 *E. coli* TMDL for Inman Creek

TMDL[a]	Margin of Safety (MOS)	Waste Load Allocation (WLA)[b]			Load Allocation (LA)	
		WWTPs[c]	Stormwater (MS4s and other NPDES sources)[d]	Leaking Collection Systems[e]		
(col/day)	(col/day)	(col/day)	(% reduction)	(col/day)	(col/day)	(% reduction)
3.67E+10	3.67E+09	NA	NA	0	3.31E+10	97%

Note: NA = not applicable
a. TMDL was established using the single sample criterion of 298 colonies/100ml.
b. Future CAFOs will be assigned a wasteload allocation (WLA) of zero.
c. Future WWTPs must meet the applicable instream water quality criteria for pathogens at the point of discharge.
d. Future MS4 areas and other NPDES-permitted stormwater sources will demonstrate consistency with the requirements of this TMDL through implementation and maintenance of BMPs on a case-by-case basis.
e. The objective for leaking collection systems is a WLA of zero. It is recognized, however, that a WLA of 0 colonies/day may not be practical. For these sources, the WLA is interpreted to mean a reduction in *E. coli* loading to the maximum extent practicable, consistent with the requirement that these sources not contribute to a violation of the water quality criteria for *E. coli*.

4.3 TMDL Summary

Inman Creek was first included on the §303(d) list for pathogens in 2020 based on ADEM's *E. coli* data collected at station INMW-1 in 2017. In 2024, ADEM collected water quality data at station INMW-1 that confirmed the pathogen impairment and provided the basis for TMDL development.

A mass balance approach was used to calculate the *E. coli* TMDL for Inman Creek. Based on the TMDL analysis, it was determined that a 97% reduction in the *E. coli* loading was necessary to achieve compliance with applicable water quality standards.

Compliance with the terms and conditions of future NPDES sanitary and stormwater permits will effectively implement the WLA and demonstrate consistency with the assumptions and requirements of the TMDL.

Required load reductions in the load allocation portion of this TMDL will be implemented through voluntary measures/best management practices (BMPs). Cooperation and active participation by the public and various other groups are critical to successful implementation of TMDLs. Local, citizen-led, and implemented management measures offer the most efficient and comprehensive avenue for reduction of loading rates from nonpoint sources. Therefore, TMDL implementation activities for nonpoint sources will be coordinated through interaction with local entities and may be eligible for CWA §319 grants through the Department's Nonpoint Source Unit.

The Department recognizes that adaptive implementation of this TMDL will be necessary to achieve applicable water quality criteria, and we are committed to targeting the load reductions to improve water quality in the Inman Creek watershed. As additional data and/or information becomes available, it may become necessary to revise and/or modify the TMDL accordingly.

5.0 Follow-up Monitoring

ADEM has adopted a basin approach to water quality monitoring, an approach that divides Alabama's sixteen major river basins into three groups. Each year, ADEM's water quality resources are concentrated in one of the three basin groups and are divided among multiple priorities including §303(d)-listed waterbodies, waterbodies with active TMDLs, and other waterbodies as determined by the Department. Monitoring will help further characterize water quality conditions resulting from the implementation of best management practices and load reductions in the watershed. This monitoring will occur in each basin according to the schedule shown in Table 5.1.

Table 5.1 Follow-up Monitoring Schedule

River Basin Group	Years to be Monitored
Alabama, Cahaba, Mobile, Tallapoosa, Tennessee (Pickwick and Wilson)	2026/2029
Black Warrior, Blackwater, Chattahoochee, Chipola, Choctawhatchee, Escambia, Perdido, Tennessee (Wheeler), Yellow	2027/2030
Coosa, Escatawpa, Tennessee (Guntersville), Tombigbee	2028/2031

6.0 Public Participation

As part of the public participation process, this TMDL was placed on public notice and made available for review and comment. The public notice and subject TMDL were made available on ADEM's website: www.adem.alabama.gov. In addition, the public notice was submitted to persons who requested to be on ADEM's postal and electronic mailing distributions. The public could also request paper or electronic copies of the TMDL by contacting Ms. Kimberly Minton at 334-271-7826 or kminton@adem.alabama.gov. The public was given an opportunity to review the TMDL and submit comments to the Department in writing. No written comments were received during the public notice period.

7.0 Appendix

7.1 References

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-10, Water Quality Criteria.

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-11, Use Classifications for Interstate and Intrastate Waters.

Alabama's Monitoring Program. 2017 and 2024. ADEM.

Alabama Department of Environmental Management (ADEM), *Alabama's Water Quality Assessment and Listing Methodology*, January 2026.

Alabama Department of Environmental Management, 2020, 2022 and 2024 §303(d) Lists and Fact Sheets. ADEM.

Alabama Department of Environmental Management (ADEM), *Laboratory Data Qualification SOP #4910 Revision 7.2*, 2022.

United States Environmental Protection Agency, 1991. *Guidance for Water Quality-Based Decisions: The TMDL Process*. Office of Water. EPA 440/4-91-001.

United States Environmental Protection Agency, 1986. *Quality Criteria for Water.* Office of Water. EPA 440/4-91-001.

7.2 Water Quality Data

Table 7.1 2017 *E. coli* Data Collected on Inman Creek

2017 Listing Data				
Station	**Visit Date**	**Flow (cfs)**	***E. coli* (col/100ml)**	***E. coli* dc***
INMW-1	3/15/2017	11.28	290.9	H
INMW-1	4/12/2017	6.2	146.7	H
INMW-1	5/10/2017	3.04	125.9	H
INMW-1	6/7/2017	1.33	108.1	H
INMW-1	7/12/2017	1.96	121.1	H
INMW-1	8/9/2017	3.25	307.6	H
INMW-1	9/20/2017	2.45	387.3	H
INMW-1	10/4/2017	0.44	139.6	H
*H = The analytical holding times for analysis were exceeded.				

Table 7.2 2024 *E. coli* Data Collected on Inman Creek

2024 Data				
Station	**Visit Date**	**Flow (cfs)**	***E. coli* (col/100ml)**	***E. coli* dc***
INMW-1	3/12/2024	10.27	43.2	H
INMW-1	4/3/2024	6.63	44.3	H
INMW-1	5/7/2024	3.03	125.9	H
INMW-1	6/5/2024	2.24	155.3	H
INMW-1	7/2/2024	-0.34	59.4	
INMW-1	7/9/2024	0.35	1413.6	
INMW-1	7/15/2024		48.7	H
INMW-1	7/18/2024	1.07	579.4	
INMW-1	7/23/2024	5.04	9678.4	G
INMW-1	8/14/2024		64.4	H
INMW-1	9/24/2024	1.46	275.5	
INMW-1	9/26/2024	8.58	307.6	
INMW-1	10/1/2024	6.25	184.2	
INMW-1	10/4/2024	2.89	344.4	
INMW-1	10/8/2024	1.38	141.4	
INMW-1	10/21/2024		42	H
*H = The analytical holding times for analysis are exceeded. *G = The actual number was probably greater than the number reported.				

7.3 Inman Creek Watershed Photos (July 23, 2024)

Photo 7.1 Station INMW-1 at unnamed Bankhead National Forest service road, upstream view.

Photo 7.2 Station INMW-1 at unnamed Bankhead National Forest service road, downstream view.