STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL DIVISION
ENVIRONMENTAL TECHNICAL STUDIES OFFICE
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 741-3655

Will Reed
COMMISSIONER OF TRANSPORTATION

BILL LEE
GOVERNOR

MEMORANDUM

To: Steve Sellers, Manager
Region 4 Alternative Delivery

From: Rita Thompson
Tech Studies Office, Ecology Unit *Rita M. Thompson*

Date: 7/24/2025

Subject: Environmental Boundaries Report for:
PIN 136185.02 (Old PIN 134873.00); SR-180 Bridge Replacement (Bridge #29)
and
PIN 136185.03 (Old PIN 134874.00); SR-180 Bridge Replacement (Bridge #30)
Haywood County, TN

An ecological evaluation of the subject projects has been conducted in response to a request for initial feature identification with the following results:

STREAMS: PIN 136185.02: Two (2) streams one (1) wet weather conveyance/ephemeral stream and one (1) wet weather conveyance/upland drainage features were noted within the project limits.

PIN 136185.03: Two (2) streams and one (1) wet weather conveyance/ephemeral stream were noted within the project limits

WETLANDS: PIN 136185.02: Two (2) wetlands were noted within the project limits.

PIN 136185.03: One (1) wetland were noted within the project limits.

OTHER FEATURES: No other features were noted in the project limits.

SPECIES:

- *USFWS:* USFWS coordination was completed for both PINs on May 22, 2025. USFWS did not have concerns for listed species. TDOT has determined there will be no effect to listed species as a result of this project.

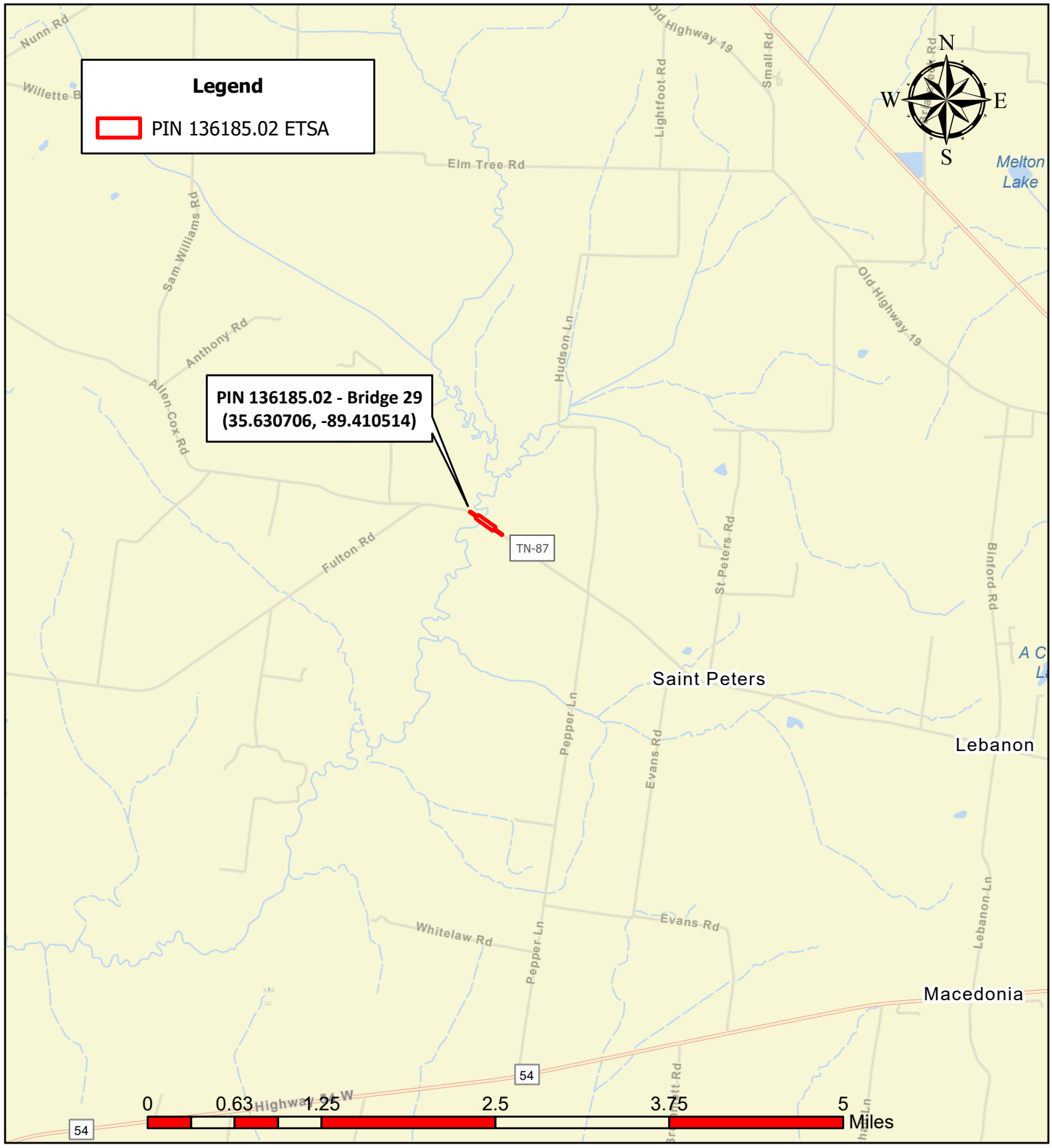
- *TWRA:* TWRA coordination was completed for both PINs on May 21, 2025. TWRA did not have species concerns.

- *TDEC DNA:* This project fits Condition #1 of the TDEC DNA MOA

COMMITMENTS: There are no project commitments.

Please note the fieldwork and coordination for the project was completed under the old PINs referenced above. If you have any questions or comments, please contact me at (615) 253-2459 or *rita.m.thompson@tn.gov.*

xc: TDOT.Env.Ecology@tn.gov
TDOT.Env.Permits@tn.gov
TDOT.ENV.Mitigation@tn.gov
TDOT.ENV.NEPA@tn.gov
R4.EnvTechOffice@tn.gov



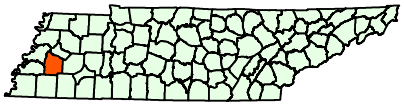
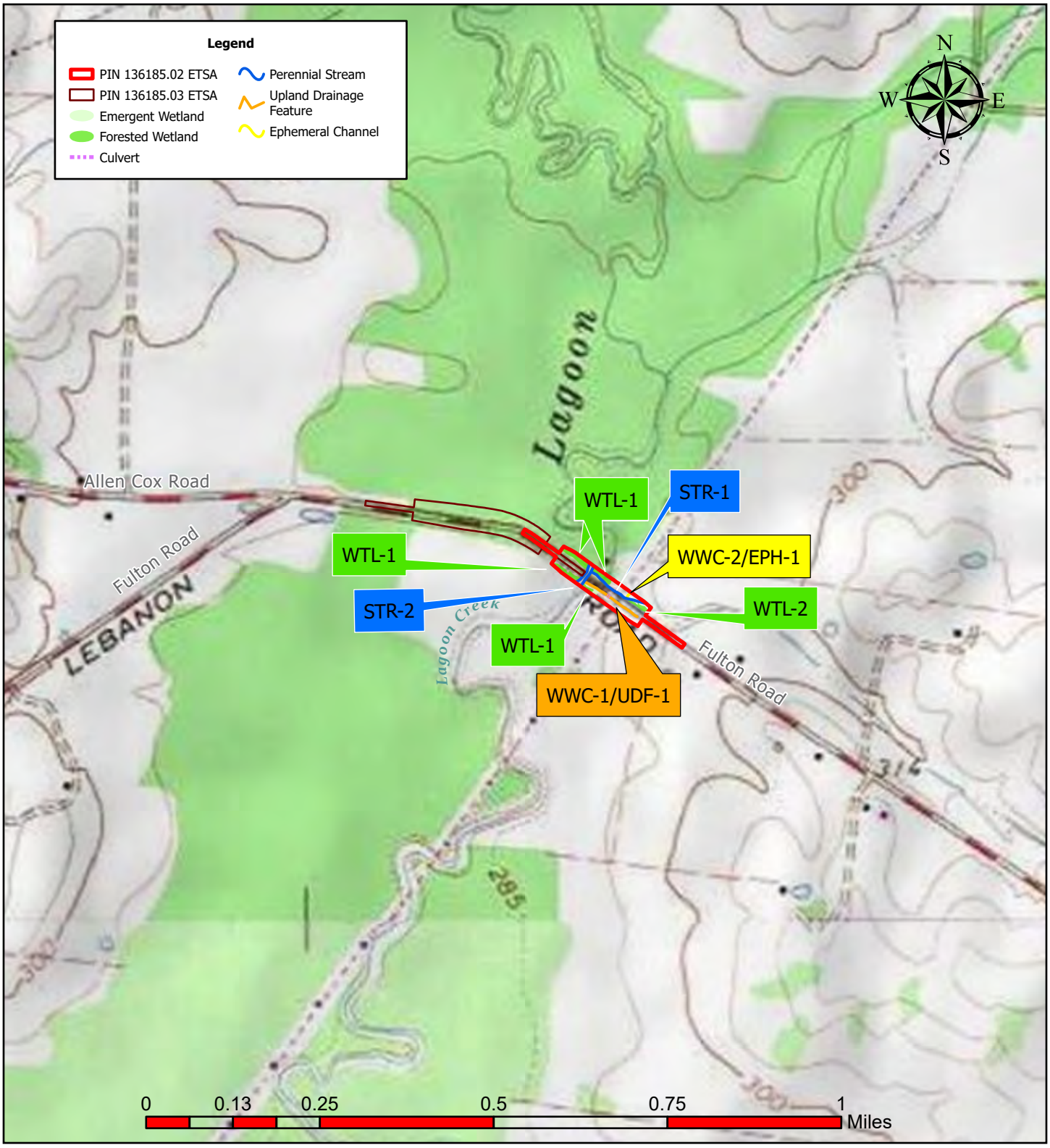


Figure 1: Vicinity Map
Haywood County, R4 Timber Bridge Bundle - Bridge 29

ESRI World Street Map Basemap
July 9, 2025

PIN 136185.02

TN TDOT Department of Transportation



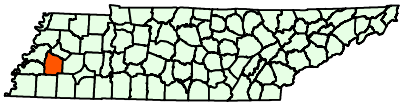
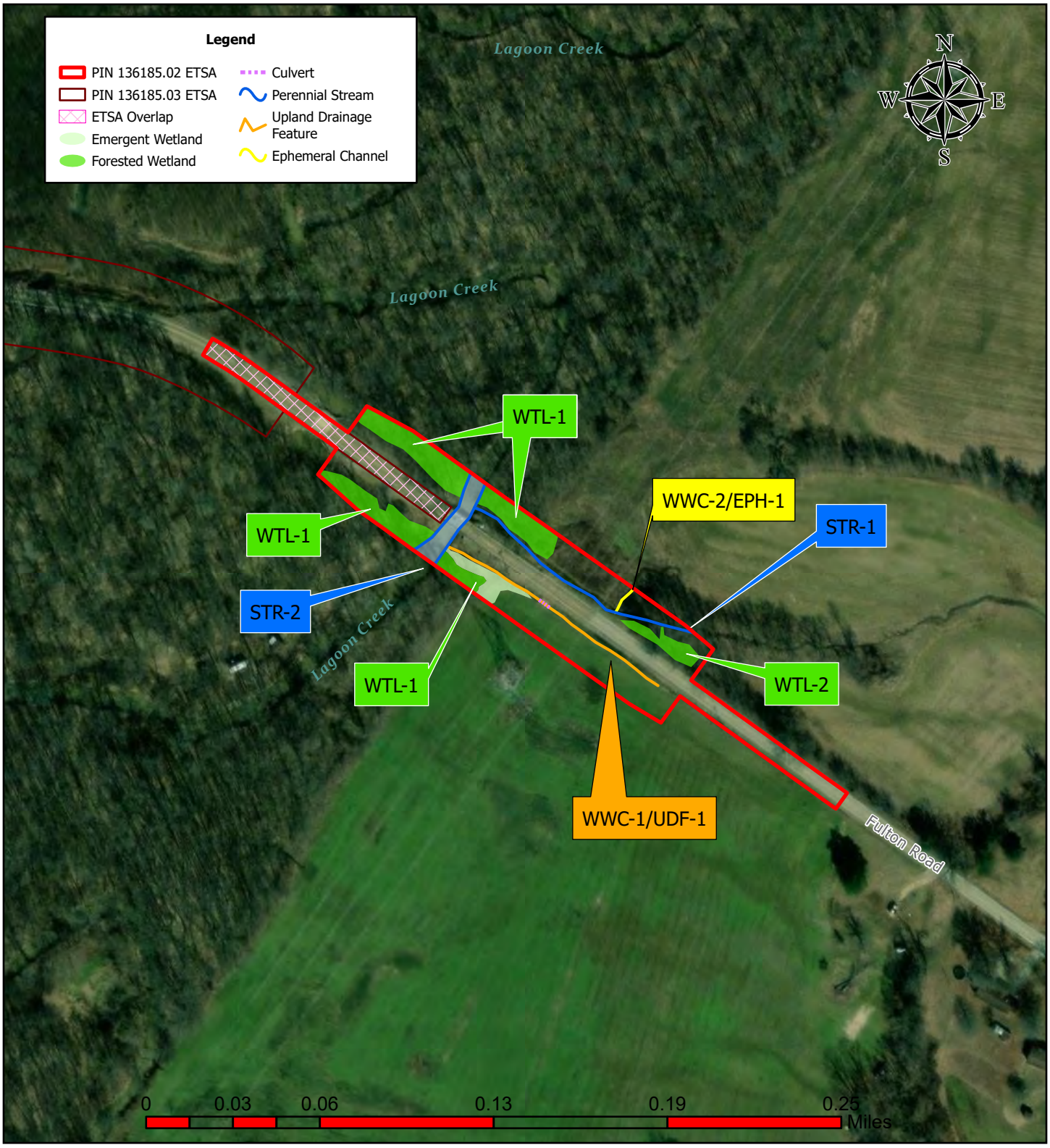


Figure 2: Water Resources Topographic Map
Haywood County, R4 Timber Bridge Bundle - Bridge 29

Gates, TN USGS Quadrangle
July 9, 2025

PIN 136185.02

TN TDOT Department of Transportation



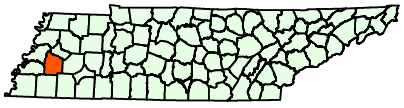
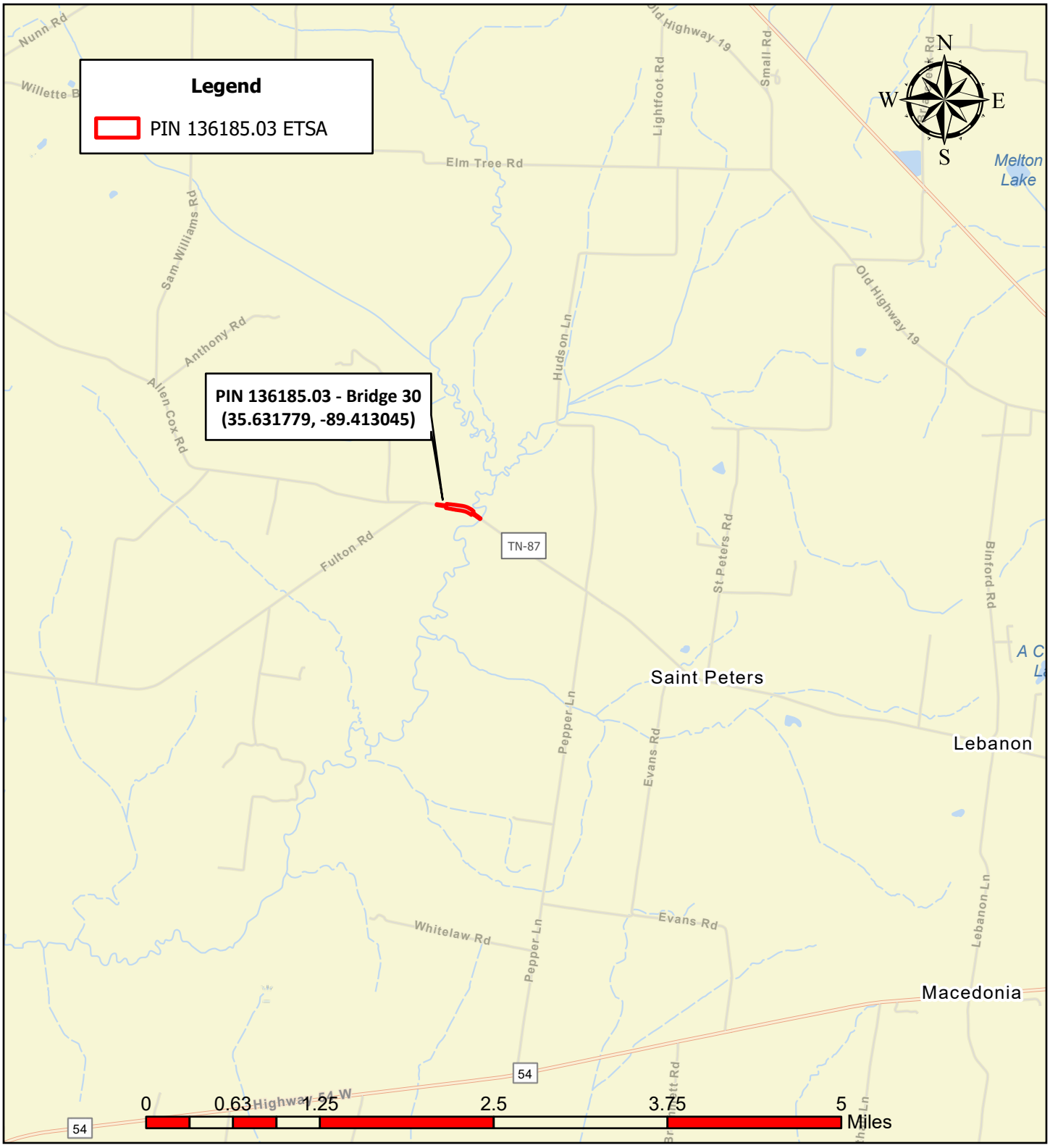


Figure 3: Water Resources Aerial Map
Haywood County, R4 Timber Bridge Bundle - Bridge 29

2022 Maxar Vivid Standard Imagery
July 9, 2025

PIN 136185.02

TN TDOT Department of Transportation



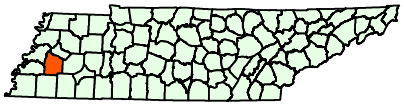
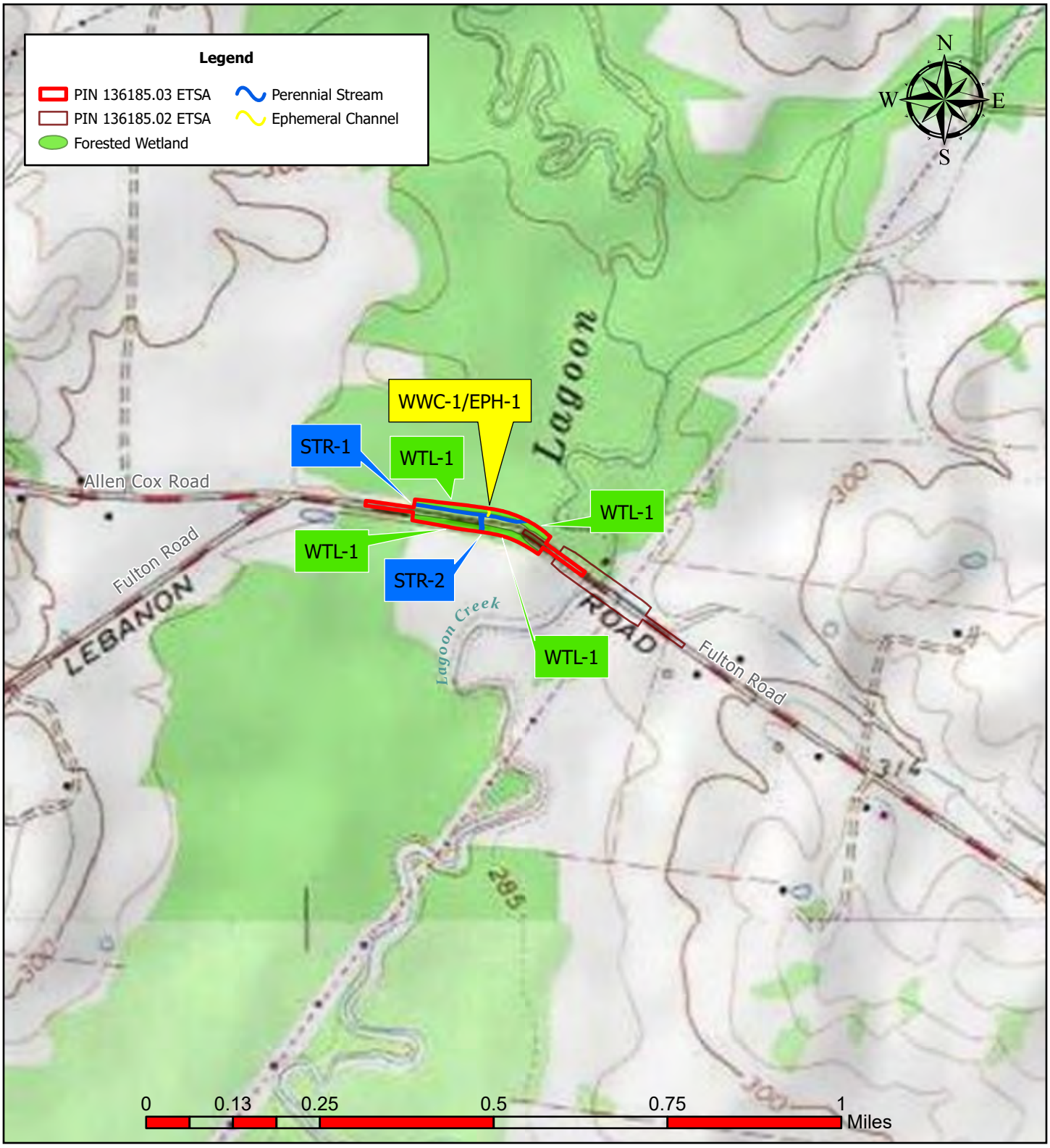


Figure 1: Vicinity Map
Haywood County, R4 Timber Bridge Bundle - Bridge 30

ESRI World Street Map Basemap
July 9, 2025

PIN 136185.03

TN TDOT Department of Transportation



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Haywood County, R4 Timber Bridge Bundle - Bridge 30

Gates, TN USGS Quadrangle
July 9, 2025

PIN 136185.03

TN TDOT Department of Transportation

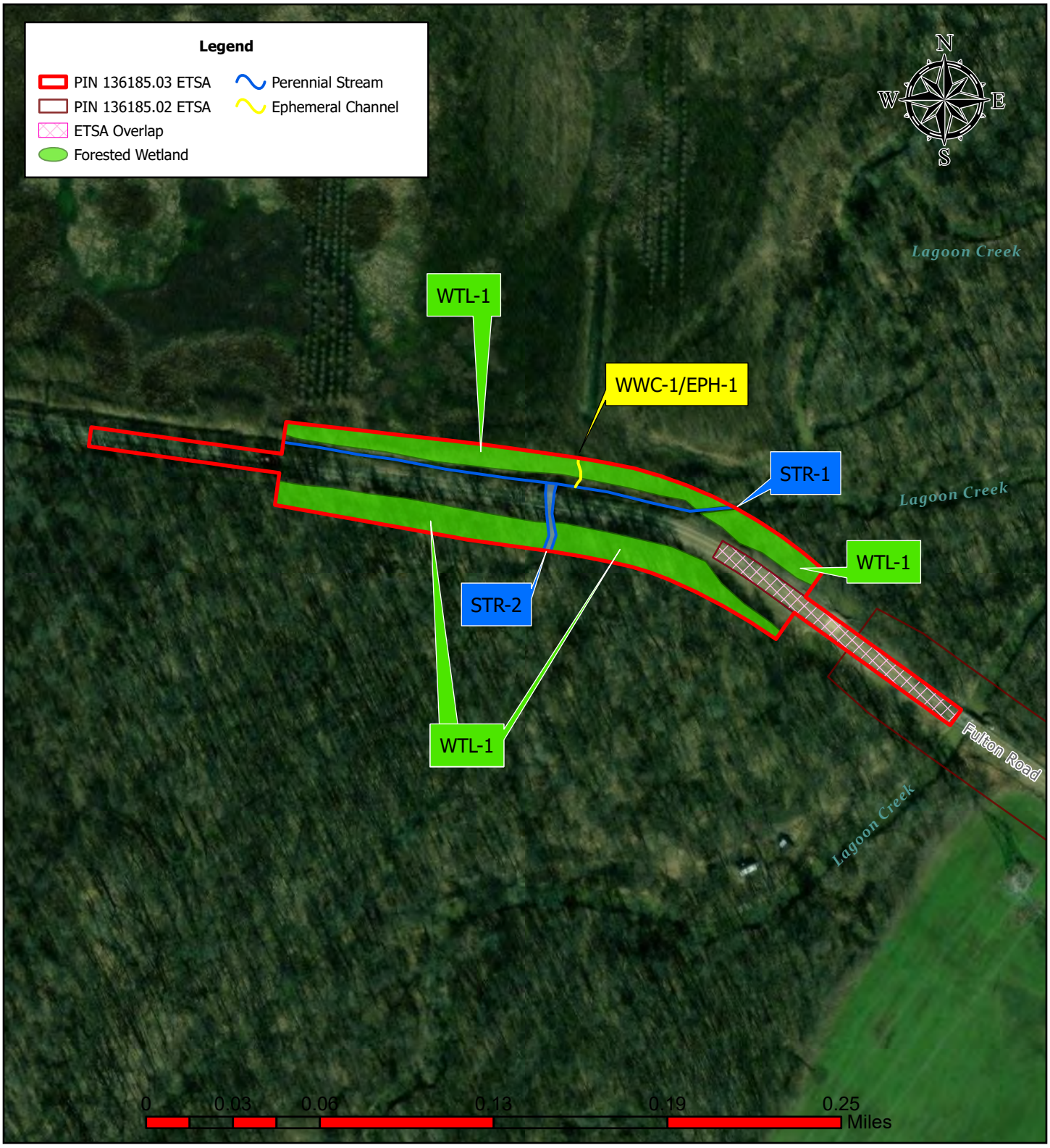


Figure 3: Water Resources Aerial Map
Haywood County, R4 Timber Bridge Bundle - Bridge 30

2022 Maxar Vivid Standard Imagery
July 9, 2025

PIN 136185.03

TN TDOT Department of Transportation

Haywood County SR-180

Project Name: R4 Timber Bridge Bundle Project **PIN:** 136185.02

Water Resource Table for NEPA Documentation

Based on: ETSA

Date: 5/22/2025

Table Amounts are based on (choose only one): Estimated extent of resource within ETSA

Water Resources (Non-Wetland)

Label	Type	Latitude	Longitude	Receiving Waters		USACE Jurisdiction	Quality	Amount (Linear Feet)	Amount (Acres)
WWC-1/UDF-1	Wet Weather Conveyance/Upland Drainage	35.731019	-89.413933	Lagoon Creek		No	Not Applicable	518	0.03
STR-1	Intermittent Stream	35.732172	-89.414074	Lagoon Creek		Yes	Not Supporting	533	0.02
WWC-2/EPH-1	Wet Weather Conveyance/Upland Drainage	35.732647	-89.413964	Lagoon Creek		No	Not Applicable	120	0.01
STR-2	Perennial Stream	35.732988	-89.414265	Lagoon Creek		Yes	Not Supporting	377	0.19
							Total:	1,548	0.25

Water Resources (Wetland)*

Label	Type	Latitude	Longitude	Receiving Waters	TDEC Jurisdiction	USACE Jurisdiction	Quality	Amount (Acres)
WTL-1	Forested	35.63119	-89.411035	Lagoon Creek	Non-Isolated	Yes	Moderate Resource Value	0.06
WTL-1	Emergent	35.63065	-89.410688	Lagoon Creek	Non-Isolated	Yes	Moderate Resource Value	0.06
WTL-2	Forested	35.630375	-89.409739	Lagoon Creek	Non-Isolated	Yes	Low Resource Value	0.46
							Total:**	0.58

*Unless described otherwise in the NEPA document; all wetlands are presumed to serve the following functions to varying degrees, based on location: wildlife habitat, flood storage, groundwater recharge, nutrient processing, contaminant filtering, and recreation.

**For the purposes of the NEPA document, Amount is assumed to be Permanent Loss.

Note- Features and estimated amounts referenced in this table are based on information available and may change as the project is further refined througout project development.

Haywood County SR-180

Project Name: R4 Timber Bridge Bundle Project **PIN:** 136185.03

Water Resource Table for NEPA Documentation

Based on: ETSA

Date: 5/22/2025

Table Amounts are based on (choose only one): Estimated extent of resource within ETSA

Water Resources (Non-Wetland)

Label	Type	Latitude	Longitude	Receiving Waters		USACE Jurisdiction	Quality	Amount	Amount
STR-1	Perennial Stream	35.63194	-89.413242	Lagoon Creek		Yes	Not Supporting	713	0.11
STR-2	Perennial Stream	35.63178	-89.41303	Lagoon Creek		Yes	Not Applicable	107	0.06
WWC-1/EPH-1	Wet Weather Conveyance/Ephemeral Stream	35.631964	-89.412862	Lagoon Creek		No	Not Supporting	48	0
							Total:	868	0.17

Water Resources (Wetland)*

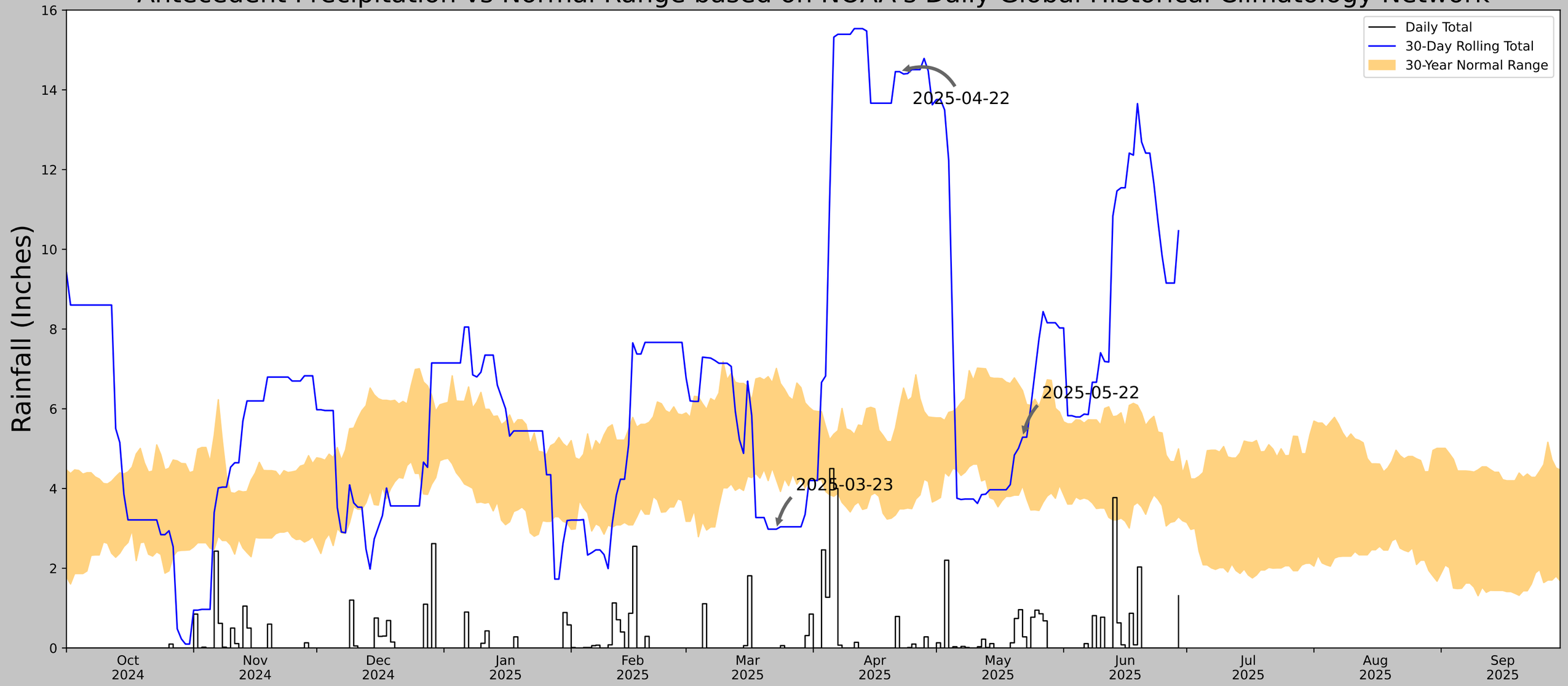
Label	Type	Latitude	Longitude	Receiving Waters	TDEC Jurisdiction	USACE Jurisdiction	Quality	Amount (Acres)

WTL-1	Forested	35.632015	-89.413264	Lagoon Creek	Non-Isolated	Yes	Moderate Resource Value	1.4
							Total:**	1.4

*Unless described otherwise in the NEPA document; all wetlands are presumed to serve the following functions to varying degrees, based on location: wildlife habitat, flood storage, groundwater recharge, nutrient processing, contaminant filtering, and recreation.

**For the purposes of the NEPA document, Amount is assumed to be Permanent Loss.

Note- Features and estimated amounts referenced in this table are based on information available and may change as the project is further refined througout project development.



Coordinates	35.630706, -89.410514
Observation Date	2025-05-22
Elevation (ft)	293.987
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-22	4.065748	6.454331	5.287402	Normal	2	3	6
2025-04-22	3.488976	6.054331	14.456693	Wet	3	2	6
2025-03-23	4.220079	7.014173	2.980315	Dry	1	1	1
Result							Normal Conditions - 13

US Army Corps of Engineers

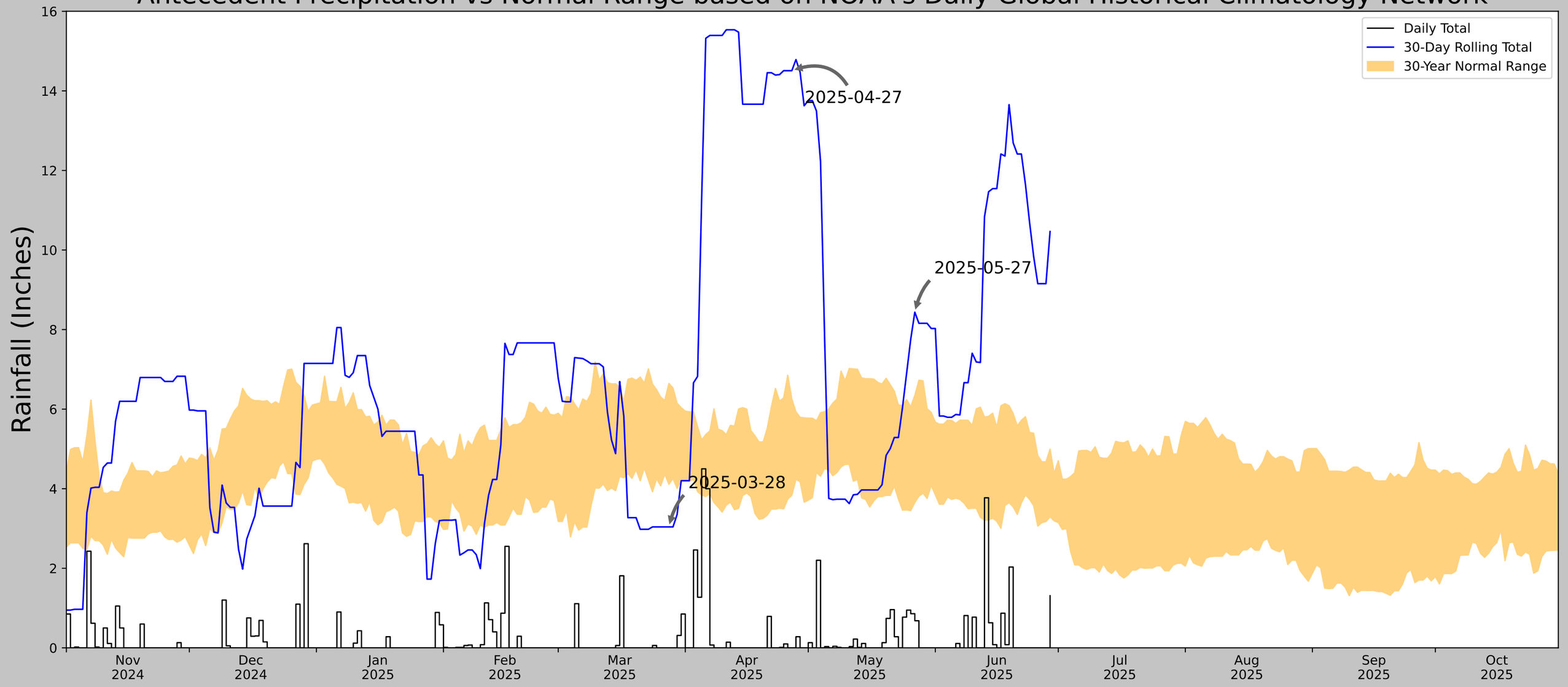
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BROWNSVILLE	35.5908, -89.2597	374.016	8.909	80.029	4.722	11116	70
BROWNSVILLE 1.0 SE	35.5841, -89.2423	348.097	1.082	25.919	0.515	77	20
RIPLEY	35.7178, -89.4986	399.934	16.028	25.918	7.628	157	0
ALAMO 1 N	35.7978, -89.1175	348.097	16.378	25.919	7.795	1	0
SOMERVILLE 10N	35.365, -89.3475	342.848	16.365	31.168	7.874	1	0
JACKSON MCKELLAR- SIPES AP	35.5933, -88.9169	423.885	19.261	49.869	9.628	1	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.630706, -89.410514
Observation Date	2025-05-27
Elevation (ft)	293.987
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-27	3.652756	6.348032	8.437008	Wet	3	3	9
2025-04-27	3.838189	6.255118	14.507874	Wet	3	2	6
2025-03-28	4.11063	6.646851	3.03937	Dry	1	1	1
Result							Wetter than Normal - 16

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BROWNSVILLE	35.5908, -89.2597	374.016	8.909	80.029	4.722	11116	68
BROWNSVILLE 1.0 SE	35.5841, -89.2423	348.097	1.082	25.919	0.515	77	22
RIPLEY	35.7178, -89.4986	399.934	16.028	25.918	7.628	157	0
ALAMO 1 N	35.7978, -89.1175	348.097	16.378	25.919	7.795	1	0
SOMERVILLE 10N	35.365, -89.3475	342.848	16.365	31.168	7.874	1	0
JACKSON MCKELLAR- SIPES AP	35.5933, -88.9169	423.885	19.261	49.869	9.628	1	0

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.02					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans									
2-Map label and name	LM 3.61 / WWC-1/UDF-1								
3-Latitude/Longitude	35.630494, -89.410019								
4-Feature description:									
-channel identification	perennial stream ☐	intermittent stream ☐	ephemeral stream ☐	wwc ☑					
-HD score (if applicable)	N/A Lagoon Creek								
-OHWM indicators	bed & banks ☑	deposition ☐	presence of litter debris ☐	scour ☐	veg absent, bent, matted ☐				
	change in plant community ☐	destruction of terrestrial veg ☑	multiple observe flow events ☐	sediment sorting ☑	water staining ☐				
	change in soil character ☐	leaf litter disturb or absent ☐	natural line impressed on bank ☑	shelving ☐	wracking ☐				
-channel bottom width	2.5'	-top of bank width	5'						
-width and max depth at ordinary high water mark	3' and 0.5'								
-width at bankfull	5'								
-bank height	LDB - 4'	RDB - 4'							
-riffle/pool complex or other specialized habitat present?	N/A								
-dominant riparian species: ----------(LDB /RDB)----------	LDB: grasses								
	RDB: grasses								
-particle size distribution %	Silt/Sand: 100	Gravel:	Cobble:	Boulder:	Bedrock: 0				
5-photo numbers	5-6								
6-HUC -8 Code & Name	08010208 - Lower Hatchie								
7-Assessed	yes ☐	no ☑							
8-ETW	yes ☐	no ☑							
9-303 (d) List	yes ☐	siltation ☐	habitat: ☐	other: ☐					
	no ☑								
10-Notes									

Revised July 2022

Tennessee Department of Environment and Conservation - Division of Water Resources
500 James Robertson Parkway, 9th Floor. Nashville, TN 37243

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Lagoon Creek	Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.02
Site Name/Description: SR-87 Bridge Repair Over Lagoon Creek	
Site Location: WWC-1/UDF-1 (LM 3.61)	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.630494
Previous Rainfall (7-days) : 2.87"	Longitude: -89.410019
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov	
Watershed Size : <2.0 sq. mi.	County: Haywood
Soil Type(s) / Geology : Ad - Adler silt loam, 0 to 2 percent slopes, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☑	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	☑	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A	☐	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☑	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☑	Stream
6. Presence of fish (except *Gambusia*)	☑	Stream
7. Presence of naturally occurring ground water table connection	☑	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	☑	Stream
9. Evidence watercourse has been used as a supply of drinking water	☑	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 9.50

Justification / Notes :

Roadside ditch, dissipates into wetland. Does not form confluence with Lagoon Creek.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 3.25)	**Absent**	**Weak**	**Moderate**	**Strong**	
1. Continuous bed and bank	0	1	2	3	1.5
2. Sinuous channel	0	1	2	3	0
3. In-channel structure: riffle-pool sequences	0	1	2	3	0.5
4. Sorting of soil textures or other substrate	0	1	2	3	0.5
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.25
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 1.25)	**Absent**	**Weak**	**Moderate**	**Strong**	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1
17. Sediment on plants or on debris	0	0.5	1	1.5	0.25
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 5.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	2
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 9.50

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity

Culvert acts as a grade control

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.02					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans									
2-Map label and name	LM 3.61 / STR-1								
3-Latitude/Longitude	35.630611, -89.410213								
4-Feature description:									
-channel identification	perennial stream ☐		intermittent stream ☑		ephemeral stream ☐		wwc ☐		
-HD score (if applicable)	24								
-OHWM indicators	bed & banks ☑		deposition ☑		presence of litter debris ☐		scour ☐		veg absent, bent, matted ☐
	change in plant community ☑		destruction of terrestrial veg ☑		multiple observe flow events ☐		sediment sorting ☑		water staining ☐
	change in soil character ☑		leaf litter disturb or absent ☐		natural line impressed on bank ☑		shelving ☑		wracking ☐
-channel bottom width	4'		-top of bank width		8'				
-width and max depth at ordinary high water mark	4.5' and 0.2'								
-width at bankfull	8'								
-bank height	LDB - 4'				RDB - 4'				
-riffle/pool complex or other specialized habitat present?	N/A								
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Acer negundo								
	RDB: Acer saccharinum								
-particle size distribution %	Silt/Sand: 80		Gravel: 20		Cobble:		Boulder:		Bedrock: 0
5-photo numbers	9-12								
6-HUC -8 Code & Name	08010208 - Lower Hatchie								
7-Assessed	yes ☐		no ☑						
8-ETW	yes ☐		no ☑						
9-303 (d) List	yes ☐		siltation ☐		habitat: ☐		other: ☐		
	no ☑								
10-Notes									

Revised July 2022

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Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.02
Site Name/Description: SR-87 Bridge Repair Over Lagoon Creek	
Site Location: STR-1 (LM 3.61)	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.630611
Previous Rainfall (7-days) : 2.87"	Longitude: -89.410213
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov	
Watershed Size : 0.2 sq. mi.	County: Haywood
Soil Type(s) / Geology : Ad - Adler silt loam, 0 to 2 percent slopes, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Forested / Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☑	WWC
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3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A	☐	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☑	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☑	Stream
6. Presence of fish (except *Gambusia*)	☐	Stream
7. Presence of naturally occurring ground water table connection	☐	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	☑	Stream
9. Evidence watercourse has been used as a supply of drinking water	☑	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 24.00

Justification / Notes :

flows in forested section of project. good riparian buffer before flowing through TL ROW and paralleling roadway

fish swimming near confluence with Lagoon Creek / cottonmouth swimming

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 11.50)	**Absent**	**Weak**	**Moderate**	**Strong**	
1. Continuous bed and bank	0	1	2	3	3
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1.5
4. Sorting of soil textures or other substrate	0	1	2	3	2
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	1.5
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	1
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 6.50)	**Absent**	**Weak**	**Moderate**	**Strong**	
14. Subsurface flow/discharge into channel	0	1	2	3	2
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1
17. Sediment on plants or on debris	0	0.5	1	1.5	1.25
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.75
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		1.5

C. Biology (Subtotal = 6.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 24.00

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity

clear sorting

some rooted grade controls in forested area

shallow water depth with riffles & runs in forested area. becomes deeper in section towards road.

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.02					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans									
2-Map label and name	LM 3.61 / WWC-2/EPH-1								
3-Latitude/Longitude	35.630405, -89.410105								
4-Feature description:									
-channel identification	perennial stream		intermittent stream		ephemeral stream		wwc	✓	
-HD score (if applicable)	13.50								
-OHWM indicators	bed & banks	✓	deposition		presence of litter debris		scour		veg absent, bent, matted
	change in plant community		destruction of terrestrial veg	✓	multiple observe flow events		sediment sorting		water staining
	change in soil character		leaf litter disturb or absent		natural line impressed on bank		shelving		wracking
-channel bottom width	2'		-top of bank width	3'					
-width and max depth at ordinary high water mark	2' and 0.5'								
-width at bankfull	5'								
-bank height	LDB - 0.8'		RDB - 0.8'						
-riffle/pool complex or other specialized habitat present?	N/A								
-dominant riparian species: ----------(LDB /RDB)----------	LDB: grasses								
	RDB: grasses								
-particle size distribution %	Silt/Sand:	100	Gravel:		Cobble:		Boulder:		Bedrock: 0
5-photo numbers	13-14								
6-HUC -8 Code & Name	08010208 - Lower Hatchie								
7-Assessed	yes		no	✓					
8-ETW	yes		no	✓					
9-303 (d) List	yes		siltation		habitat:		other:		
	no	✓							
10-Notes									

Revised July 2022

Tennessee Department of Environment and Conservation - Division of Water Resources
500 James Robertson Parkway, 9th Floor. Nashville, TN 37243

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Lagoon Creek	Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.02
Site Name/Description: SR-87 Bridge Repair Over Lagoon Creek	
Site Location: WWC-2/EPH-1 (LM 3.61)	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.630405
Previous Rainfall (7-days) : 2.87"	Longitude: -89.410105
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov	
Watershed Size : <2.0 sq. mi.	County: Haywood
Soil Type(s) / Geology : Ad - Adler silt loam, 0 to 2 percent slopes, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 13.50

Justification / Notes :

channel that flows through TL corridor / forms confluence with STR-2

water within channel, and fish swimming, but recent rains elevated water depth. water trickling near start.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6.50)	**Absent**	**Weak**	**Moderate**	**Strong**	
1. Continuous bed and bank	0	1	2	3	3
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 2.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 5.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	2
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 13.50

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity

based on aerial, begins as a headcut in TL corridor outside of project

deep/narrow channel

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.02					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans									
2-Map label and name	LM 3.61 / STR-2								
3-Latitude/Longitude	35.630989, -89.411020								
4-Feature description:									
-channel identification	perennial stream	✓	intermittent stream		ephemeral stream		wwc		
-HD score (if applicable)	N/A Lagoon Creek								
-OHWM indicators	bed & banks	✓	deposition	✓	presence of litter debris		scour		veg absent, bent, matted	
	change in plant community	✓	destruction of terrestrial veg	✓	multiple observe flow events	✓	sediment sorting	✓	water staining	
	change in soil character	✓	leaf litter disturb or absent	✓	natural line impressed on bank	✓	shelving	✓	wracking	
-channel bottom width	25'		-top of bank width		30'					
-width and max depth at ordinary high water mark	28' and 4'									
-width at bankfull	28'									
-bank height	LDB - 6'		RDB - 5.5'							
-riffle/pool complex or other specialized habitat present?	N/A									
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Acer negundo									
	RDB: Acer saccharinum									
-particle size distribution %	Silt/Sand:		Gravel:		Cobble:		Boulder:		Bedrock:	0
5-photo numbers	N/A									
6-HUC -8 Code & Name	08010208 - Lower Hatchie									
7-Assessed	yes	✓	no							
8-ETW	yes		no	✓						
9-303 (d) List	yes	✓	siltation		habitat:		other:	✓		
	no									
10-Notes	Lagoon Creek. Not able to access for substrate. Waters too high. Channel measurements are visual estimations due to inaccessibility.									

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: PN136185.02 City/County: Haywood Sampling Date: 5/22/2025

Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-2-PFO

Investigator(s): I. Maldonado / L. Niven Section, Township, Range:

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.630275 Long: -89.409988 Datum: NAD 1983

Soil Map Unit Name: Ad - Adler silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Data point taken in forested floodplain between roadway and stream

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
receives overflow from stream. Minor natural levee from stream

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WTL-2-PFO

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	Yes	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Celtis laevigata*	10	No	FACW
4. *Fraxinus pennsylvanica*	10	No	FACW
5.			
6.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Sapling Stratum (Plot size: 30)			
1. *Quercus bicolor*	20	Yes	FACW
2. *Celtis laevigata*	5	Yes	FACW
3.			
4.			
5.			
6.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Shrub Stratum (Plot size: 30)			
1. *Lonicera japonica*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Herb Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	30	Yes	FAC
2. *Campsis radicans*	20	Yes	FAC
3. *Rubus sp*	10	No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Woody Vine Stratum (Plot size: 30)			
1. *Vitis sp*	5	Yes	
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	90	x 3 =	270
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	140 (A)		380 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)
Tall Canopy / mature trees

SOIL

Sampling Point: WTL-2-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 4/2	90	2.5Y 6/2	10	RM		Loamy/Clayey	Mottles
3-18	2.5Y 6/2	70	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 4/2	15	RM			

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(MLRA 149A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The presence of a reduced matrix within 12 inches of the soil surface indicates that this soil is hydric based on the hydric soil definition: "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part".

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: PN136185.02 City/County: Haywood Sampling Date: 5/22/2025

Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-2-U

Investigator(s): I. Maldonado / L. Niven Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.630476 Long: -89.409988 Datum: NAD 1983

Soil Map Unit Name: Ad - Adler silt loam, 0 to 2 percent slopes, frequently flooded NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Data point taken alongside roadside.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Raised berm.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WTL-2-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30)			
1. *Bromus secalinus*	30	Yes	UPL
2. *Erigeron annuus*	5	No	FACU
3. *Toxicodendron radicans*	5	No	FAC
4. *Liquidambar styraciflua*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	42 =Total Cover		
50% of total cover: 21	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	7	x 3 =	21
FACU species	5	x 4 =	20
UPL species	30	x 5 =	150
Column Totals:	42 (A)		191 (B)
Prevalence Index = B/A =			4.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-2-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	100					Loamy/Clayey	
3-18	10YR 5/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(MLRA 149A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Quantitative Rating

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

6pts	>50 acres (west TN)	>25 acres (middle TN)	>10 acres (east TN *)	
5pts	25 - <50 acres (west TN)	10- 25 acres (middle TN)	7-<10 acres (east TN*)	
4pts	10 - <25 acres (west TN)	7-< 25acres (middle TN)	3-<7 acres (east TN*)	
3pts	3 - <10 acres(west TN)	3< 7 acres (middle TN)	1-<3 acres (east TN)	
2pts	0.3 - <3 acres (west TN)	0.5- <3 acres (middle TN)	0.5-<1 acres (east TN)	
1pt	0.1 - <0.3 acres(west TN)	<0.5 acres (middle TN)	<0.5 acres (east TN)	X

*More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

Table 2. Metric to English conversion table with visual estimation sizes.

acres	ft^2	yd^2	ft on side	yd on side	ha	m^2	m on side
50	2,177,983	241,998	1476	492	20.2	202,000	449
25	1,088,992	120,999	1044	348	10.1	101,000	318
10	435,596	48,340	660	220	4.1	41,000	203
3	130,679	14,520	362	121	1.2	12,000	110
0.3	13,067	1,452	114	38	0.12	1,200	35
0.1	4,356	484	66	22	0.04	400	20

Metric 1 Total 1

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

2a. Average Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc.		
7pts	WIDE. >50m (164ft) or more around perimeter.	
4pts	MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.	X
1pt	NARROW. 10m to <25m (32 to <82ft) around the perimeter.	
0pts	VERY NARROW. <10m (<32ft) around perimeter.	
2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.		
7pts	VERY LOW. 2nd growth or older forest, prairie, barren, wildlife area, etc.	
5pts	LOW. Old fallow field, shrub land, early successional young forest, etc.	X
3pts	MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.	X
1pt	HIGH. urban, industrial, row cropping, mining, construction, etc.	

Metric 2 Total 9

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity**. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.**

3a. Sources of Water. Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.

5pts	High pH groundwater (7.5-9.0)	
3pts	Other groundwater	
1pts	Precipitation	X
3pts	Seasonal surface water	
5pts	Perennial surface water (lake or stream)	X

3b. Connectivity. Select all that apply and sum score

1pt	**100 year floodplain.** "Floodplain" is defined as "...the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they a available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.	
1pt	**Between stream/lake and other human land use.** This question asks whether the wetland is located between a surface water different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses.	X
1pt	**Part of a larger wetland or upland complex.** This question asks whether the wetland is in physical proximity to, or a part of othe nearby wetland or upland habitat areas.	X
1pt	**Part of riparian corridor**.	X

3c. Maximum water depth. Select only one and assign score. The evaluator *does not* need to actually observe the wetland when its water depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Manual will be useful in answering this question.

3 pts	>0.7m (27.6in)	
2pts	0.4 to 0.7m (15.7 to 27.6in)	
1pt	<0.4m (<15.7in)	X

3d. Duration of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.

4pts	Semi-permanently to permanently inundated or saturated	
3pts	Regularly inundated or saturated	
2pts	Seasonally inundated	
1pt	Seasonally saturated in the upper 30cm (12in) of soil	X

3e. Modifications to natural hydrologic regime. Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

	ditch(es), in or near the wetland		point source discharges to the (non-stormwater)
	tile(s), in or near the wetland		filling/grading activities in or near the wetland
	dike(s), in or near the wetland	X	road beds/RR beds in or near the wetland
	weir(s), in or near the wetland		dredging activities in or near the wetland
	stormwater inputs (addition of water)		other (specify)

Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime.	YES Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance.	NO Assign a score of 12 since there are no or no apparent modifications.	NOT SURE Choose "recovered" and assign a score of 9.5.

Select one or double check adjoining numbers and average the score.		**score**
12pts	NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.	
7pts	RECOVERED. The wetland appears to have recovered from past modifications.	X
3pts	RECOVERING. The wetland appears to be in the process of recovering from past modifications.	X
1pt	RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing.	

Metric 3 Total 16

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.	Examples of substrate/soil disturbance include (circle all that apply): X filling and grading ____plowing ____grazing (hooves) ____vehicle use (off-road vehicles, construction vehicles) ____sedimentation ____dredging, and other mechanical disturbances to the soil

Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils	YES Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance.	NO Assign a score of 4 since there are no or no apparent modifications.	NOT SURE Choose "recovered" and assign a score of 3.5.

Select one or double check adjoining numbers and average the score.		
4pts	NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.	
3pts	RECOVERED. The wetland appears to have recovered from past disturbances.	X
2pts	RECOVERING. The wetland appears to be in the process of recovering from past disturbances.	X
1pt	RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.	

4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.

7pts	EXCELLENT. Wetland appears to represent the best of its type or class.	
6pts	VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.	
5pts	GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.	
4pts	MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.	X
3pts	FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.	
2pts	POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.	
1pt	POOR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc.	

4c. Habitat alteration. This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.**

Check all that are observed present in or near the wetland

	Mowing		Herbaceous layer/aquatic bed removal
	Grazing (cattle, horses, etc.)		Sedimentation
	Clearcutting		Dredging
	Selective cutting	X	Row-crop or orchard farming
	Woody debris removal		Nutrient enrichment, e.g. nuisance algae
	Toxic pollutants	X	Other (specify): roadway
	Shrub/sapling removal		Other (specify):

Have any of the disturbances identified above caused or appeared to cause more than trivial alterations to the wetland's natural habitat.	YES Assign a score 1, 3 or 6, or an intermediate score, depending on degree of recovery from the disturbance.	NO Assign a score of 9 since there are no or no apparent modifications.	NOT SURE Choose "recovered" and assign a score of 6.

Select one score or double check adjoining numbers and average the score.		Score
9pts	NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.	
6pts	RECOVERED. The wetland appears to have recovered from past alterations.	X
3pts	RECOVERING. The wetland appears to be in the process of recovering from past alterations.	X
1pt	RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing.	

Metric 4 Total 11

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.			
5pts	> $10m^2$, sphagnum or other moss or vernal pools	5pts	Superior fish, waterfowl, bat, or amphibian breeding habitat
10pts 5pts 3pts	Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/ occurrence) (10 pts)	5pts	Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water quality of a 303(d) listed stream and/or to surface or and/or ground water
10pts	Older-aged mature forested wetland avg. DBH >= 30 inches	10 pts	Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC

Metric 5 Total 0

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points). **6a. Wetland Vegetation Communities** Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or $1000m^2$ (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.	Score
1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed (*Lemna* spp*., Spirodela* spp*.)* are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.	0
2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.	1
3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	0
4)Forested Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools".	2
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB_3) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.	0
6)Open water The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.	0

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

Cover Scale	Description
0	The vegetation community is either 1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland
1	Vegetation community is present and either, 1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or 2) if it comprises a significant part of the wetland's vegetation and is of low quality
2	Thee vegetation community is present and either, 1) comprises a significant part of the wetland's vegetation and is of moderate quality, or 2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality
3	The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

Narrative	Description
Low	Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.
Moderate	Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species.
High	A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.

Table 5. Mudflat and open water community cover scale.

0	Absent <0.1 ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 ha to < 4 ha (2.47 to 9.88 acres)
3	High 4 ha (9.88 acres) or more

6b. Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1.	Score
5pts HIGH Wetland has a high degree of interspersion	
4pts MODERATELY HIGH Wetland has a moderately high degree of interspersion	
3pts MODERATE Wetland has a moderate degree of interspersion	
2pts MODERATELY LOW Wetland has a moderately low degree of interspersion	X
1pt LOW Wetland has a low degree of interspersion.	
0pt NONE Wetland has no plan view interspersion	

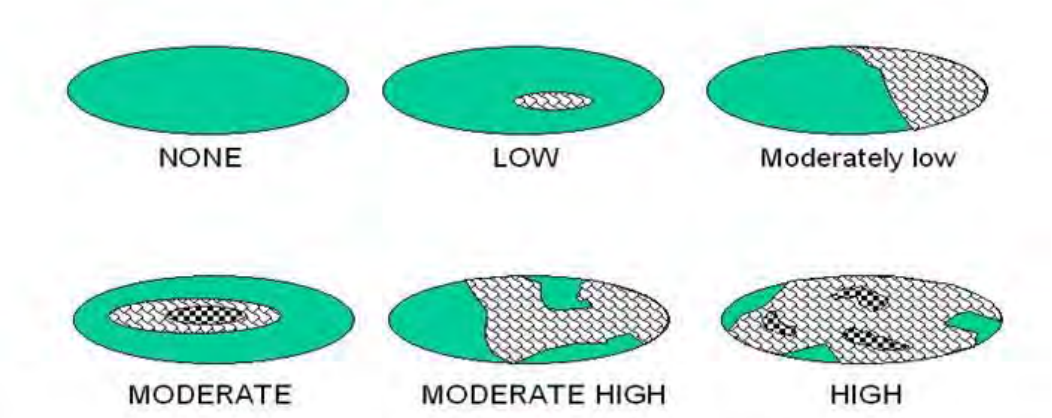

Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.	Score
-5pts Extensive >75% areal cover of invasive species	
-3pts Moderate 25-75% areal cover of invasive species	
-1pts Sparse 5-25% areal cover of invasive species	
0pt Nearly absent. <5% areal cover of invasive species	X
1pt Absent	
6d. Microtopography. Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands.	Score
Vegetated hummocks and tussocks	0
Coarse woody debris >15cm (6in) in diameter	0
Standing dead trees >25cm (10in) diameter at breast height	0
Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction	0

Table 6. Cover scale for microtopographic habitat features

Microtopographic habitat quality	**Narrative description**
0	Feature is absent or functionally absent from the wetland
1	Feature is present in the wetland in very small amounts or if more common, of low quality
2	Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of the highest quality

Metric 6 Total 5

NON-HGM TRAM Summary Worksheet

Non-HGM Quantitative Rating	Metric 1: Size	1
	Metric 2: Buffers and surrounding land use	9
	Metric 3: Hydrology	16
	Metric 4: Habitat	11
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	5
	TOTAL SCORE	42

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: PN136185.02 City/County: Haywood Sampling Date: 5/22/2025

Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-1_PEM

Investigator(s): I. Maldonado / L. Niven Section, Township, Range:

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.630989 Long: -89.411020 Datum: NAD 1983

Soil Map Unit Name: Cv - Convent silt loam, frequently flooded NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Data point taken alongside roadside within PEM of Lagoon Creek complex.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Receives overflow from Lagoon Creek. Standing water in some spots

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WTL-1_PEM

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus profunda*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	10 =Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling Stratum (Plot size: 30)			
1. *Acer negundo*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30)			
1. *Ambrosia trifida*	20	Yes	FAC
2. *Toxicodendron radicans*	20	Yes	FAC
3. *Sambucus canadensis*	20	Yes	FACW
4. *Packera aurea*	10	No	FACW
5. *Carex vulpinoidea*	10	No	FACW
6. *Sorghum halepense*	10	No	FACU
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	40	x 2 =	80
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	105 (A)		265 (B)
Prevalence Index = B/A =			2.52

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-1_PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	2.5Y 5/3	80	2.5Y 6/2	20	RM		Loamy/Clayey	mottles
4-18	2.5Y 6/2	80	7.5YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations
			2.5Y 3/2	10	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(MLRA 149A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The presence of a reduced matrix within 12 inches of the soil surface indicates that this soil is hydric based on the hydric soil definition: "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part".

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: PN136185.02 City/County: Haywood Sampling Date: 5/22/2025

Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-1-PFO

Investigator(s): I. Maldonado / L. Niven Section, Township, Range:

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.631706 Long: -89.412496 Datum: NAD 1983

Soil Map Unit Name: Cv - Convent silt loam, frequently flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Data point taken alongside roadside within forested Lagoon Creek complex.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	1
Water Table Present?	Yes X	No ____	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	1

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Receives overflow from multiple tributaries of Lagoon Creek

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WTL-1-PFO

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya aquatica*	30	Yes	OBL
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3. *Liquidambar styraciflua*	5	No	FAC
4.			
5.			
6.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover: 11	

Sapling Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 30)			
1. *Arundinaria gigantea*	20	Yes	FACW
2. *Toxicodendron radicans*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover: 6	

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		155 (B)
Prevalence Index = B/A =			1.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)
Mature hickories

SOIL

Sampling Point: WTL-1-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18	5Y 6/2	60	10YR 5/4	20	RM		Loamy/Clayey	mottles
			7.5YR 5/8	20	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(MLRA 149A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The presence of a reduced matrix within 12 inches of the soil surface indicates that this soil is hydric based on the hydric soil definition: "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part".

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: PN136185.02 City/County: Haywood Sampling Date: 5/22/2025

Applicant/Owner: JMT / TDOT State: TN Sampling Point: WTL-1-U

Investigator(s): I. Maldonado / L. Niven Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.630651 Long: -89.410527 Datum: NAD 1983

Soil Map Unit Name: Cv - Convent silt loam, frequently flooded NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Data point taken alongside roadside.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Raised berm.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: WTL-1-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30)			
1. *Cynodon dactylon*	60	Yes	FACU
2. *Lactuca hirsuta*	20	Yes	UPL
3. *Rumex crispus*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	60	x 4 =	240
UPL species	20	x 5 =	100
Column Totals:	100 (A)		400 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	
3-18	10YR 5/6	80	2.5Y 6/2	10			Loamy/Clayey	Increased gravels
			2.5Y 3/2	10				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(MLRA 149A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Fill material mixed in.

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.03					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans											
2-Map label and name	LM 3.47/ STR-1										
3-Latitude/Longitude	35.631903, -89.413001										
4-Feature description:											
-channel identification	perennial stream	✓	intermittent stream		ephemeral stream		wwc				
-HD score (if applicable)	22.50										
-OHWM indicators	bed & banks	✓	deposition		presence of litter debris		scour		veg absent, bent, matted		
	change in plant community	✓	destruction of terrestrial veg	✓	multiple observe flow events		sediment sorting		water staining		
	change in soil character		leaf litter disturb or absent		natural line impressed on bank	✓	shelving		wracking		
-channel bottom width	6'		-top of bank width		15'						
-width and max depth at ordinary high water mark	7' and 3'										
-width at bankfull	15'										
-bank height	LDB - 7'		RDB - 7'								
-riffle/pool complex or other specialized habitat present?	N/A										
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Acer negundo										
	RDB: grasses										
-particle size distribution %	Silt/Sand:	100	Gravel:		Cobble:		Boulder:		Bedrock:	0	
5-photo numbers	23-24										
6-HUC -8 Code & Name	08010208 - Lower Hatchie										
7-Assessed	yes		no	✓							
8-ETW	yes		no	✓							
9-303 (d) List	yes		siltation		habitat:		other:				
	no	✓									
10-Notes											

Revised July 2022

Tennessee Department of Environment and Conservation - Division of Water Resources
500 James Robertson Parkway, 9th Floor. Nashville, TN 37243

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Lagoon Creek	Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.03
Site Name/Description: SR-87 Bridge Repair Over Branch	
Site Location: STR-1 (LM 3.47)	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.631903
Previous Rainfall (7-days) : 2.87"	Longitude: -89.413001
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov	
Watershed Size : <2.0 sq. mi.	County: Haywood
Soil Type(s) / Geology : Cv - Convent silt loam, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Forested / Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☑	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	☑	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A	☐	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☑	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☑	Stream
6. Presence of fish (except *Gambusia*)	☑	Stream
7. Presence of naturally occurring ground water table connection	☐	Stream (circled)
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	☑	Stream
9. Evidence watercourse has been used as a supply of drinking water	☑	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 22.25

Justification / Notes :

Flows W to E on north side of roadway. Evidence of moderate channelization from aerial imagery.

slow moving. Several turtles in channel.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 9.75)	**Absent**	**Weak**	**Moderate**	**Strong**	
1. Continuous bed and bank	0	1	2	3	3
2. Sinuous channel	0	1	2	3	0.5
3. In-channel structure: riffle-pool sequences	0	1	2	3	1.5
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	1.5
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0
12. Natural valley or drainageway	0	0.5	1	1.5	1.25
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 6.50)	**Absent**	**Weak**	**Moderate**	**Strong**	
14. Subsurface flow/discharge into channel	0	1	2	3	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1.25
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.75
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

N/A

C. Biology (Subtotal = 6.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 22.25

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity

channel was too turbid and too deep to assess for macros or other biology. Assuming presence, but did not score

could not access soil core for hydric soils due to bank steepness

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.03					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans											
2-Map label and name	LM 3.47/ STR-2										
3-Latitude/Longitude	35.631789, -89.413017										
4-Feature description:											
-channel identification	perennial stream	✓	intermittent stream		ephemeral stream		wwc				
-HD score (if applicable)	25.00										
-OHWM indicators	bed & banks	✓	deposition		presence of litter debris		scour		veg absent, bent, matted		
	change in plant community	✓	destruction of terrestrial veg	✓	multiple observe flow events		sediment sorting		water staining		
	change in soil character		leaf litter disturb or absent		natural line impressed on bank	✓	shelving		wracking		
-channel bottom width	22'		-top of bank width		28'						
-width and max depth at ordinary high water mark	25' and 3.5'										
-width at bankfull	28'										
-bank height	LDB - 6'		RDB - 6'								
-riffle/pool complex or other specialized habitat present?	N/A										
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Acer negundo										
	RDB: Fraxinus pennsylvanica										
-particle size distribution %	Silt/Sand:	80	Gravel:	20	Cobble:		Boulder:		Bedrock:	0	
5-photo numbers	25-28										
6-HUC -8 Code & Name	08010208 - Lower Hatchie										
7-Assessed	yes		no	✓							
8-ETW	yes		no	✓							
9-303 (d) List	yes		siltation		habitat:		other:				
	no	✓									
10-Notes											

Revised July 2022

Tennessee Department of Environment and Conservation - Division of Water Resources
500 James Robertson Parkway, 9th Floor. Nashville, TN 37243

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Lagoon Creek	Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.03
Site Name/Description: SR-87 Bridge Repair Over Branch	
Site Location: STR-2 (LM 3.47)	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.631789
Previous Rainfall (7-days) : 2.87"	Longitude: -89.413017
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA/ weather.gov	
Watershed Size : <2.0 sq. mi.	County: Haywood
Soil Type(s) / Geology : Cv - Convent silt loam, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Forested / Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☑	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	☑	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A	☐	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☑	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☑	Stream
6. Presence of fish (except *Gambusia*)	☑	Stream
7. Presence of naturally occurring ground water table connection	☐	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	☑	Stream
9. Evidence watercourse has been used as a supply of drinking water	☑	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 25.00

Justification / Notes :

Flows S to N under roadway. Forms confluence with STR-1

slow moving. Several turtles in channel.

PFO wetland on either side south of bridge

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 11.75)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	3
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0.5
6. Depositional bars or benches	0	1	2	3	1.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	1.5
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0.5
12. Natural valley or drainageway	0	0.5	1	1.5	1.25
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. **Hydrology** (Subtotal = 6.25)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.75
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

N/A

C. **Biology** (Subtotal = 7.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	1
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 25.00

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity

channel was too turbid and too deep to assess for macros or other biology. several frogs present

could not access soil core for hydric soils due to bank steepness

Ecology Field Data Sheet: **Water Resources**

Project: PN136185.03					
Biologist:	I. Maldonado / L. Niven	**Affiliation:**	Athena EE	**Date:**	5/22/2025

1-Station: from plans											
2-Map label and name	LM 3.47/ WWC-1 / EPH-2										
3-Latitude/Longitude	35.631818, -89.412463										
4-Feature description:											
-channel identification	perennial stream		intermittent stream		ephemeral stream		wwc	✓			
-HD score (if applicable)	15.25										
-OHWM indicators	bed & banks	✓	deposition		presence of litter debris		scour		veg absent, bent, matted		
	change in plant community	✓	destruction of terrestrial veg	✓	multiple observe flow events		sediment sorting		water staining		
	change in soil character		leaf litter disturb or absent		natural line impressed on bank	✓	shelving		wracking		
-channel bottom width	3'		-top of bank width	4'							
-width and max depth at ordinary high water mark	2.5' and .8'										
-width at bankfull	4'										
-bank height	LDB - 4'		RDB - 4'								
-riffle/pool complex or other specialized habitat present?	N/A										
-dominant riparian species: ----------(LDB /RDB)----------	LDB: Acer negundo										
	RDB: Fraxinus pennsylvanica										
-particle size distribution %	Silt/Sand:	80	Gravel:	20	Cobble:		Boulder:		Bedrock:	0	
5-photo numbers	29										
6-HUC -8 Code & Name	08010208 - Lower Hatchie										
7-Assessed	yes		no	✓							
8-ETW	yes		no	✓							
9-303 (d) List	yes		siltation		habitat:		other:				
	no	✓									
10-Notes	no accessibility. observational appoximations										

Revised July 2022

Tennessee Department of Environment and Conservation - Division of Water Resources
500 James Robertson Parkway, 9th Floor. Nashville, TN 37243

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Lagoon Creek	Date/Time: 5/22
Assessors/Affiliation: I. Maldonado / L. Niven	Project ID : 136185.03
Site Name/Description: SR-87 Bridge Repair Over Branch	
Site Location: WWC-1/EPH-1	
HUC (12 digit): 080102080801 - Lagoon Creek	Latitude: 35.631818
Previous Rainfall (7-days) : 2.87"	Longitude: -89.412463
Precipitation this Season vs. Normal : average Source of recent & seasonal precip. data : NOAA / weather.gov	
Watershed Size : <2.0 sq. mi.	County: Haywood
Soil Type(s) / Geology : Cv - Convent silt loam, frequently flooded	Source: Web Soil Survey
Surrounding Land Use : Forested / Agricultural	
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Moderate	

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 15.25

Justification / Notes :

backflow from STR-1

Good riparian buffer

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6.50)	**Absent**	**Weak**	**Moderate**	**Strong**	
1. Continuous bed and bank	0	1	2	3	2.5
2. Sinuous channel	0	1	2	3	1
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	0.5
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	0
12. Natural valley or drainageway	0	0.5	1	1.5	0
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 2.75)	**Absent**	**Weak**	**Moderate**	**Strong**	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	NA
16. Leaf litter in channel	1.5	1	0.5	0	1.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.25
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 6.00)	**Absent**	**Weak**	**Moderate**	**Strong**	
20. Fibrous roots in channel bed [1]	3	2	1	0	3
21. Rooted plants in the thalweg [1]	3	2	1	0	3
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macrobenthos (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed [2]	0	0.5	1	1.5	0

[1] Focus is on the presence of terrestrial plants.

[2] Focus is on the presence of aquatic or wetland plants.

Total Points = 15.25

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :

Low sinuosity / low flow

Trenched drainage

water in channel, but recent rains influenced

turbid water

Photo 1: WTL-2 Forested Wetland

Photo 2: WTL-2 Forested Wetland

TN TDOT Department of Transportation

Photo 3: Upland adjacent to WTL-2

Photo 4: Upland adjacent to WTL-2

Photo 5: WWC-1/UDF-1 Upgradient

Photo 6: WWC-1/UDF-1 Downgradient

Photo 7: Culvert of WWC-1/UDF-1 upgradient

Photo 8: STR-1 downstream

Photo 9: STR-1 downstream, south of WTL-1

Photo 10: STR-1 upstream, south of WTL-1

Photo 11: STR-1 downstream

Photo 12: STR-1 upstream

Photo 13: WWC-2/EPH-1 Start downgradient

Photo 14: WWC-2/EPH-1 Start upgradient

Photo 15: WTL-2 Upland soil core

Photo 16: WTL-2 Wetland soil core

Photo 17: WTL-1

Photo 18: WTL-1

Photo 19: WTL-1

Photo 20: WTL-1

Photo 21: WTL-1 soil core

Photo 22: WTL-1 soil core

Photo 23: STR-1 downstream

Photo 24: STR-1 upstream

Photo 25: STR-2 downstream confluence with STR-1

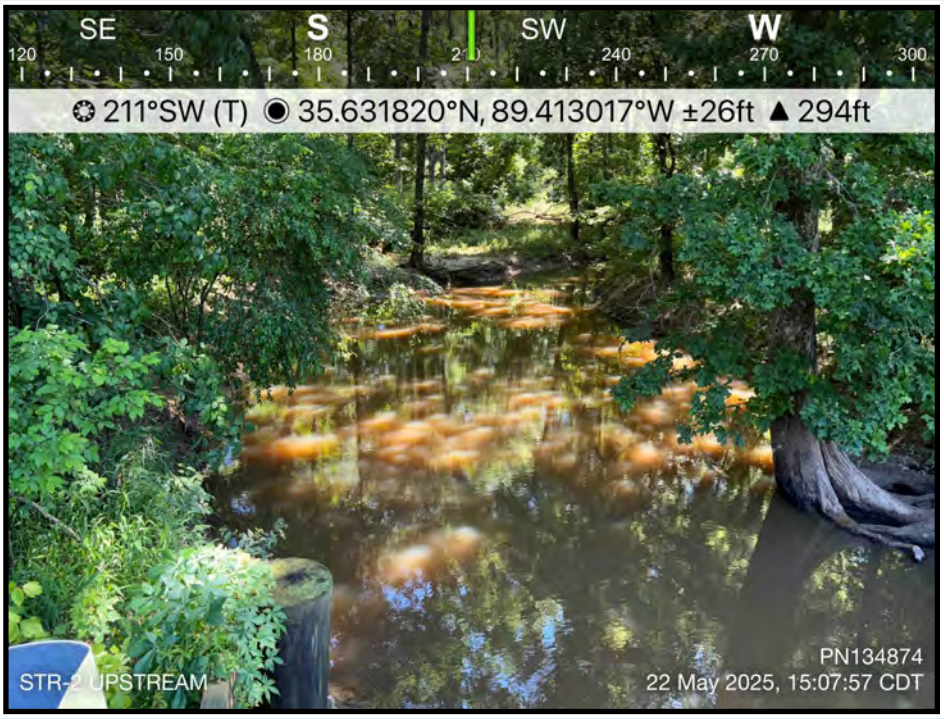

Photo 26: STR-2 upstream

Photo 27: STR-2 Left top bank

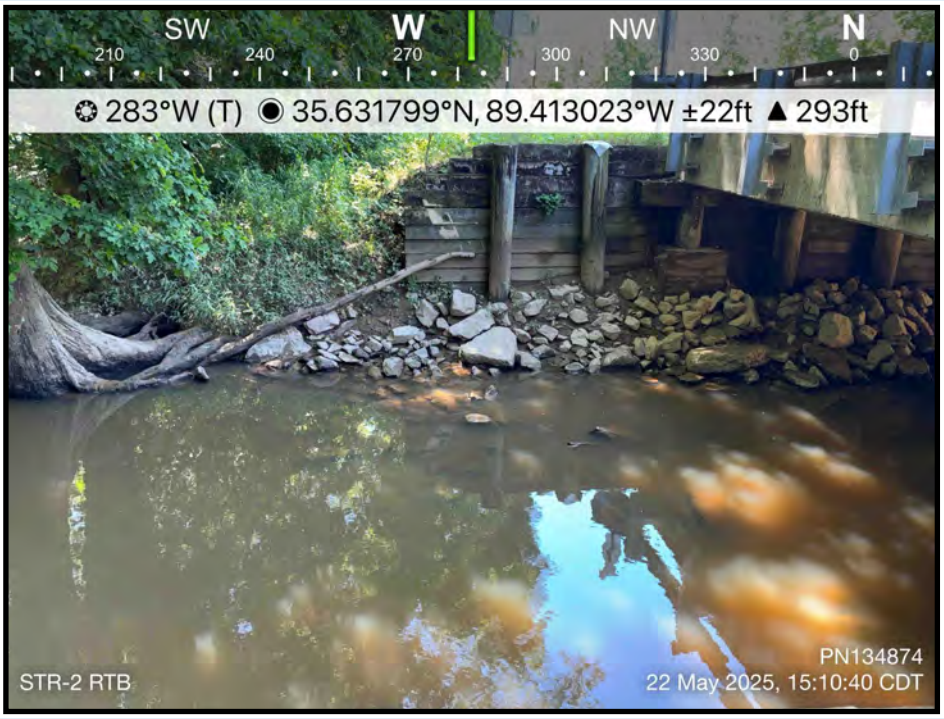

Photo 28: STR-2 Right top bank

Photo 29: WWC-1/EPH-1 upgradient at STR-1 confluence

Steve A. Walker

From: TDOT_USFWS <tdot_usfws@fws.gov>
Sent: Thursday, May 22, 2025 7:47 AM
To: Steve A. Walker
Cc: Harris, Abigail N; david_giddens; Sikula, Nicole R; DeVore, Christopher; Casey Parker
Subject: [EXTERNAL] Re: IPaC delivered Official Species List for project: Haywood Co; SR-87 bridge over Lagoon Creek, bridge replacement; PIN 134873.00

Steve,

Thank you for your correspondence regarding the SR-87 proposed bridge replacement over Lagoon Creek in Haywood County, Tennessee (PIN 134873.00). The proposed project will remove an existing timber bridge and replace it with a new structure within the existing footprint. You are requesting a list of federally threatened or endangered species that may be present in the project area.

A review of our database does not indicate that any federally listed or proposed species or designated critical habitat would be impacted by the project. Therefore, based on the best information available at this time, we believe that the requirements of the Endangered Species Act (ESA) are fulfilled for all species that currently receive protection under the ESA. Obligations under section 7 of the ESA should be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

This email will serve as our official project response. Please let me know if we can offer further assistance.

Thank you,

Abigail Harris
Fish and Wildlife Biologist
Ecological Services
U.S. Fish and Wildlife Service
446 Neal St.
Cookeville, TN 38501
Mobile Phone: 931-357-1654
Email: abigail_harris@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Administrator Email <ecosphere_support@ecosphere.fws.gov>
Sent: Tuesday, April 29, 2025 2:31 PM
To: Griffith, John <John_Griffith@fws.gov>; Tennessee ES, FWS <tennesseeES@fws.gov>; Sykes, Robbie <robbie_sykes@fws.gov>; TDOT_USFWS <tdot_usfws@fws.gov>; Alexander, Steven <steven_alexander@fws.gov>
Subject: IPaC delivered Official Species List for project: Haywood Co; SR-87 bridge over Lagoon Creek, bridge replacement; PIN 134873.00

To: IPaC point(s) of contact for Tennessee Ecological Services Field Office
Project Location: Haywood County, Tennessee

IPaC has delivered an official Section 7 species list on behalf of your office. For your convenience, IPaC has created an ETK project (2025-0089915) with a new associated 'Species List Provided' event. A PDF file of the species list document is attached to the event and contact information for the project can be found on the last page of the PDF.

IPaC has automatically set the Project status to "Closed". If you need to do any additional work in this project (*e.g.*, add staff, add events, change lead office, etc.), you must first change the Project status to "active" so that you can edit the project. You can access the project via the link, above.

Lead FWS Office:
The Tennessee Ecological Services Field Office is currently designated as the lead office for Section 7 on this project. The following additional offices have jurisdiction and have been notified: None. If another office is the lead office on this project, please access the project (via the link above) and update it. IPaC will not reset the Lead Office once it has been updated by a biologist.

*Projects created in ETK by IPaC have not been assigned to an FWS staff member. To identify the staff assigned to this project, please access the project (via the link above) and add their name(s).

TENNESSEE WILDLIFE RESOURCES AGENCY
WWW.TNWILDLIFE.ORG
(615) 781-6500

STATE OF TENNESSEE
ELLINGTON AGRICULTURAL CENTER
5107 EDMONDSON PIKE
NASHVILLE, TN 37211

May 21, 2025

Re: Haywood County, Bridge Replacement over Lagoon Creek, PIN 134873.00

Mr. Steve Walker,

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the subject project in Haywood County, Tennessee. Your letter to us requested comments by our agency regarding potential impacts to endangered species, wetlands, and other areas of concern as we may think pertinent due to the proposed project.

This project involves replacing the bridge over Lagoon Creek in Haywood County. The initial information provided by TDOT and the data I have reviewed and compared to the proposed project, conclude that the project is not anticipated to adversely affect any federally or state-listed Endangered, Threatened, or Deemed-In-Need-of-Management species. Based upon these understandings, TWRA does not anticipate adverse impacts upon listed species under our authority due to the project and we have no concerns or objection to the proposed project. Re-coordination will be required if new species records are found or if the proposed project plans incorporate critical habitat for listed species of concern.

Thank you for the opportunity to review and comment on this proposed project. If you have further questions regarding this matter; please contact me at (731) 431-0012.

Sincerely,

Casey Parker
West TN Transportation Biologist


TENNESSEE
WILDLIFE RESOURCES
AGENCY

Outlook

[EXTERNAL] Re: IPaC delivered Official Species List for project: TDOT-Haywood Co; SR-87 over branch LM 3.47; bridge replacement; PIN 134874.00

From TDOT_USFWS <tdot_usfws@fws.gov>
Date Thu 5/22/2025 8:04 AM
To Steve A. Walker <Steve.A.Walker@tn.gov>
Cc Rita M. Thompson <Rita.M.Thompson@tn.gov>; William Methvin <William.Methvin@tn.gov>; Casey Parker <Casey.Parker@tn.gov>; david_giddens <david_giddens@fws.gov>; DeVore, Christopher <Christopher_DeVore@fws.gov>; Harris, Abigail N <abigail_harris@fws.gov>; Sikula, Nicole R <nicole_sikula@fws.gov>

Steve,

Thank you for your correspondence regarding the SR-87 proposed bridge replacement over branch LM 3.47 in Haywood County, Tennessee (PIN 134874.00). The proposed project will remove an existing timber bridge and replace it with a new structure within the existing footprint. You are requesting a list of federally threatened or endangered species that may be present in the project area.

A review of our database does not indicate that any federally listed or proposed species or designated critical habitat would be impacted by the project. Therefore, based on the best information available at this time, we believe that the requirements of the Endangered Species Act (ESA) are fulfilled for all species that currently receive protection under the ESA. Obligations under section 7 of the ESA should be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

This email will serve as our official project response. Please let me know if we can offer further assistance.

Thank you,

Abigail Harris
Fish and Wildlife Biologist
Ecological Services
U.S. Fish and Wildlife Service
446 Neal St.
Cookeville, TN 38501
Mobile Phone: 931-357-1654

Email: abigail_harris@fws.gov

From: Administrator Email <ecosphere_support@ecosphere.fws.gov>
Sent: Tuesday, April 29, 2025 3:11 PM
To: Griffith, John <John_Griffith@fws.gov>; Tennessee ES, FWS <tennesseeES@fws.gov>; Sykes, Robbie <robbie_sykes@fws.gov>; TDOT_USFWS <tdot_usfws@fws.gov>; Alexander, Steven <steven_alexander@fws.gov>
Subject: IPaC delivered Official Species List for project: TDOT-Haywood Co; SR-87 over branch LM 3.47; bridge replacement; PIN 134874.00

To: IPaC point(s) of contact for Tennessee Ecological Services Field Office
Project Location: Haywood County, Tennessee

IPaC has delivered an official Section 7 species list on behalf of your office. For your convenience, IPaC has created an ETK project (2025-0089966) with a new associated 'Species List Provided' event. A PDF file of the species list document is attached to the event and contact information for the project can be found on the last page of the PDF.

IPaC has automatically set the Project status to "Closed". If you need to do any additional work in this project (*e.g.*, add staff, add events, change lead office, etc.), you must first change the Project status to "active" so that you can edit the project. You can access the project via the link, above.

Lead FWS Office:
The Tennessee Ecological Services Field Office is currently designated as the lead office for Section 7 on this project. The following additional offices have jurisdiction and have been notified: None. If another office is the lead office on this project, please access the project (via the link above) and update it. IPaC will not reset the Lead Office once it has been updated by a biologist.

*Projects created in ETK by IPaC have not been assigned to an FWS staff member. To identify the staff assigned to this project, please access the project (via the link above) and add their name(s).

TENNESSEE WILDLIFE RESOURCES AGENCY
WWW.TNWILDLIFE.ORG
(615) 781-6500

STATE OF TENNESSEE
ELLINGTON AGRICULTURAL CENTER
5107 EDMONDSON PIKE
NASHVILLE, TN 37211

May 21, 2025

Re: Haywood County, PIN 134874.00, Bridge Replacement SR-87 LM 3.47

Mr. Steve Walker

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding the subject project in Haywood County, Tennessee. Your letter to us requested comments by our agency regarding potential impacts to endangered species, wetlands, and other areas of concern as we may think pertinent due to the proposed project.

This project involves the proposed bridge replacement on SR-87 in Haywood County. The initial information provided by TDOT and the data I have reviewed and compared to the proposed project, conclude that the project is not anticipated to adversely affect any federally or state-listed Endangered, Threatened, or Deemed-In-Need-of-Management species. Based upon these understandings, TWRA does not anticipate adverse impacts upon listed species under our authority due to the project and we have no concerns or objection to the proposed project. Re-coordination will be required if new species records are found or if the proposed project plans incorporate critical habitat for listed species of concern.

Thank you for the opportunity to review and comment on this proposed project. If you have further questions regarding this matter; please contact me at (731) 431-0012.

Sincerely,

Casey Parker
West TN Transportation Biologist


TENNESSEE
WILDLIFE RESOURCES
AGENCY