**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 136185.01 (Old PIN 134848.00); SR-87 Bridge Replacement (Bridge #41)
Haywood County, TN

An ecological evaluation of the subject project has ben conducted in response to a request for initial feature identification with the following result:

**STREAMS**: One (1) stream, one (1) wet weather conveyance/ephemeral stream, and three (3) wet weather conveyance/upland drainage features were noted within the project limits.

**WETLANDS:** No wetlands were noted within the project limits.

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

**SPECIES:**

- *USFWS:* USFWS coordination was completed on May 21, 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.

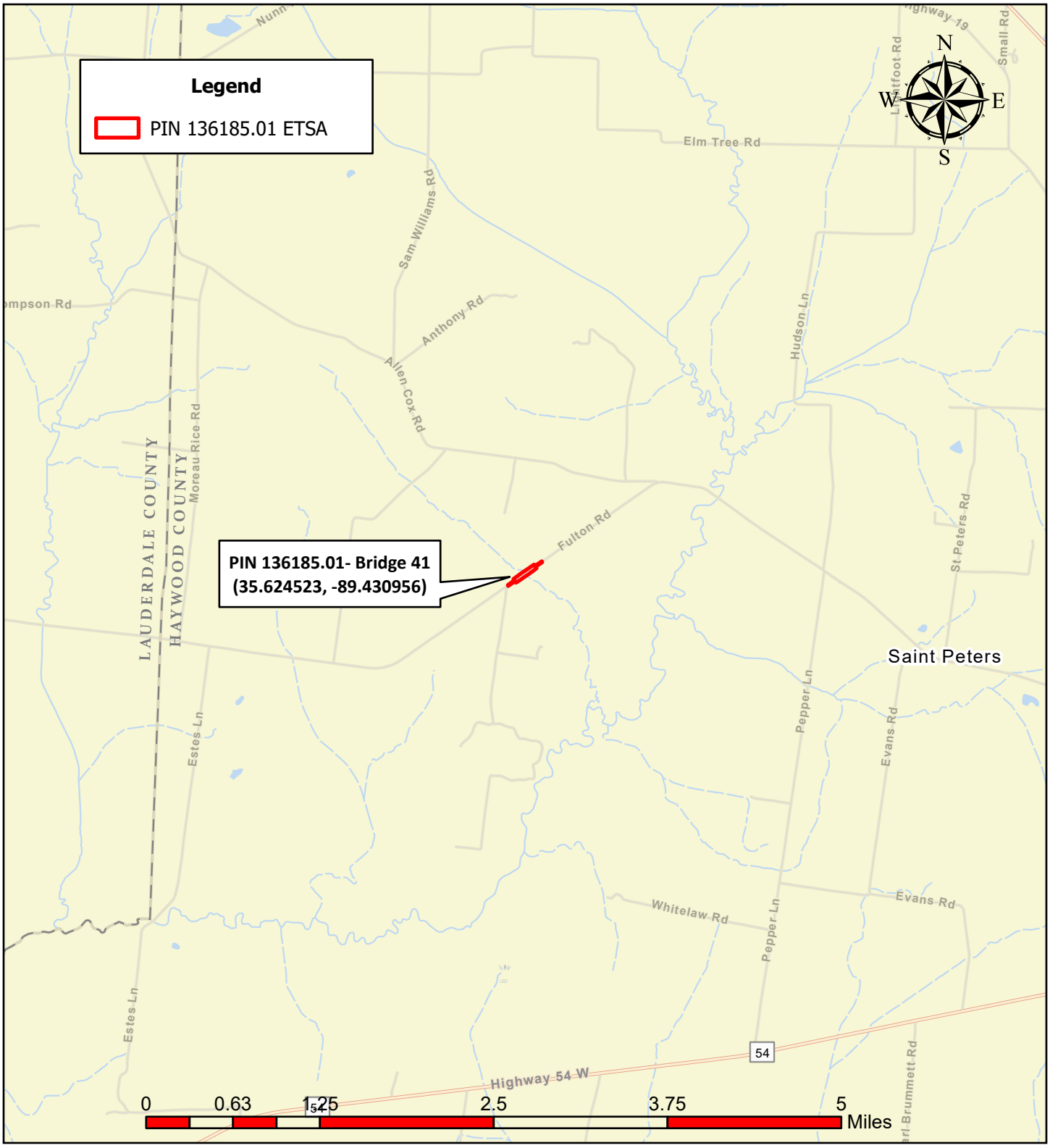
- *TWRA:* TWRA coordination was completed on May 21, 2025. TWRA did not have species concerns.

- *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 PIN 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



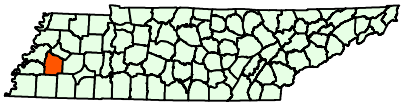
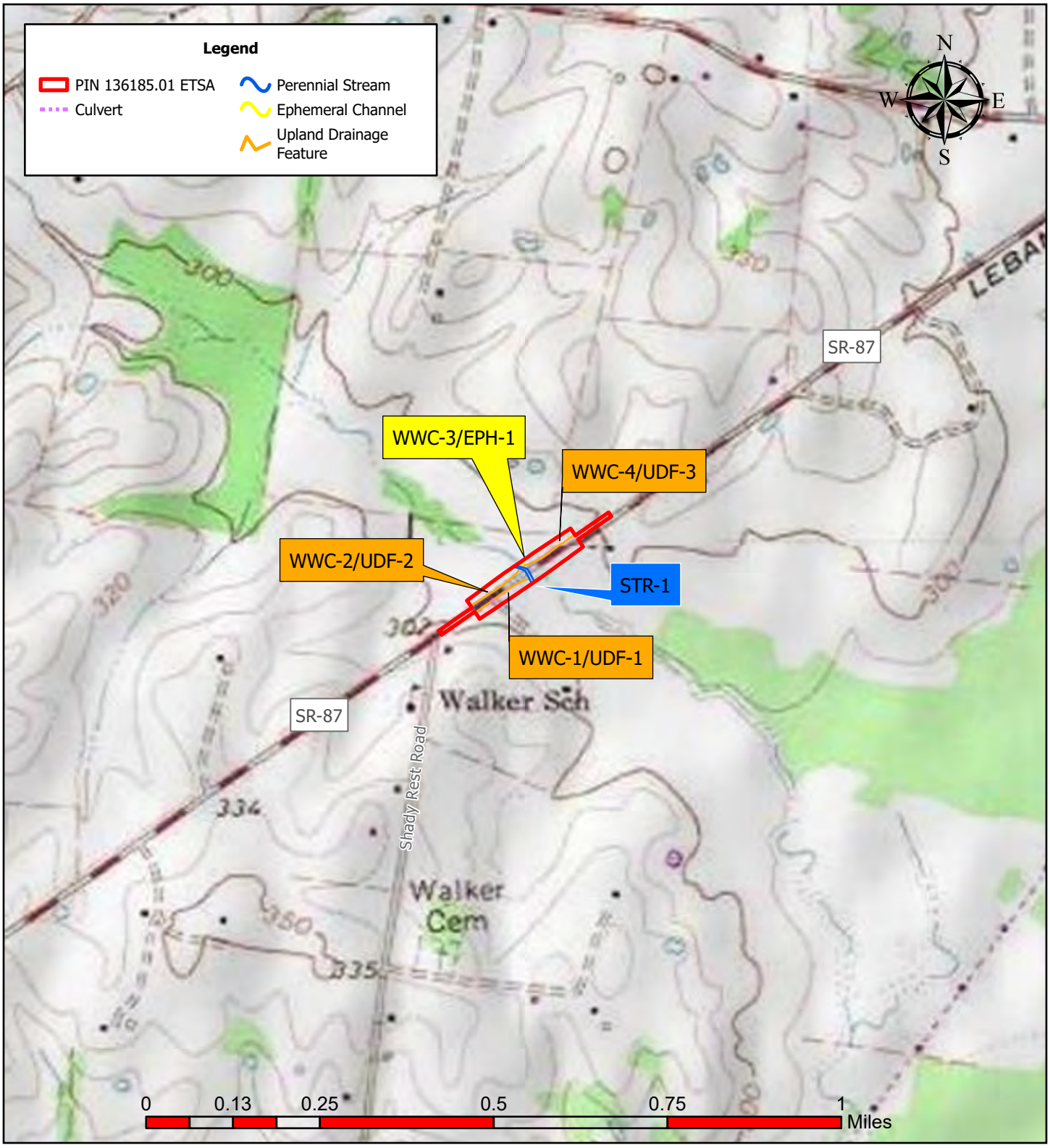



**Figure 1: Vicinity Map**
**Haywood County, R4 Timber Bridge Bundle - Bridge 41**

**ESRI World Street Map Basemap**
**July 2, 2025**

**PIN 136185.01**

TN TDOT Department of Transportation



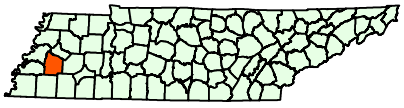
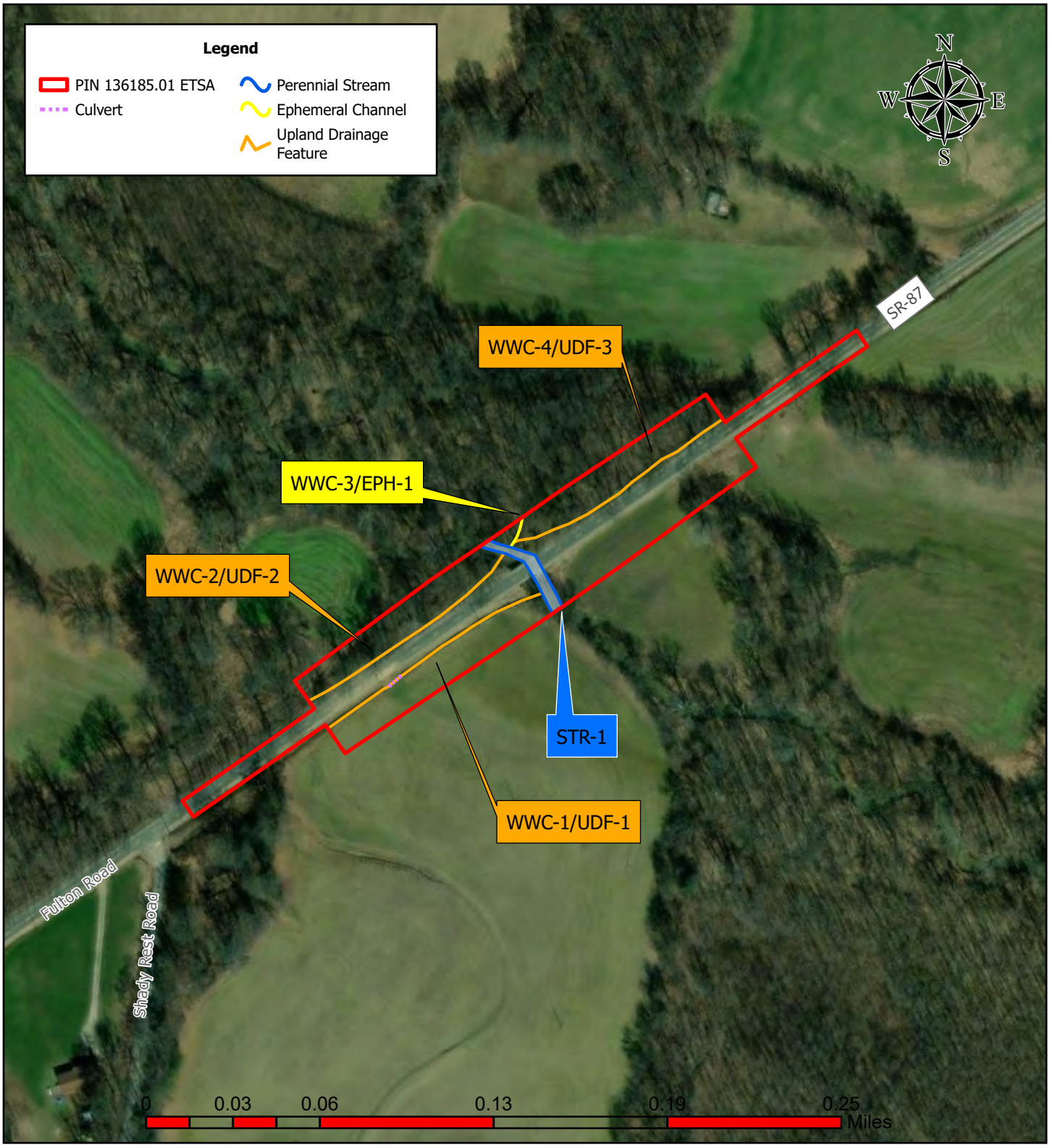



**Figure 2: Water Resources Topographic Map**
**Haywood County, R4 Timber Bridge Bundle - Bridge 41**

**Gates, TN USGS Quadrangle**
**July 2, 2025**

**PIN 136185.01**

TN TDOT Department of Transportation



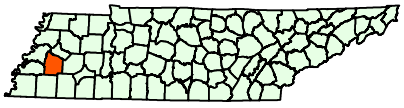



**Figure 3: Water Resources Aerial Map**
**Haywood County, R4 Timber Bridge Bundle - Bridge 41**

**2022 Maxar Vivid Standard Imagery**
**July 2, 2025**

**PIN 136185.01**

TN TDOT Department of Transportation

Haywood County SR-180

**Project Name:** R4 Timber Bridge Bundle Project **PIN:** 136185.01

**Water Resource Table for NEPA Documentation**

Based on: ETSA

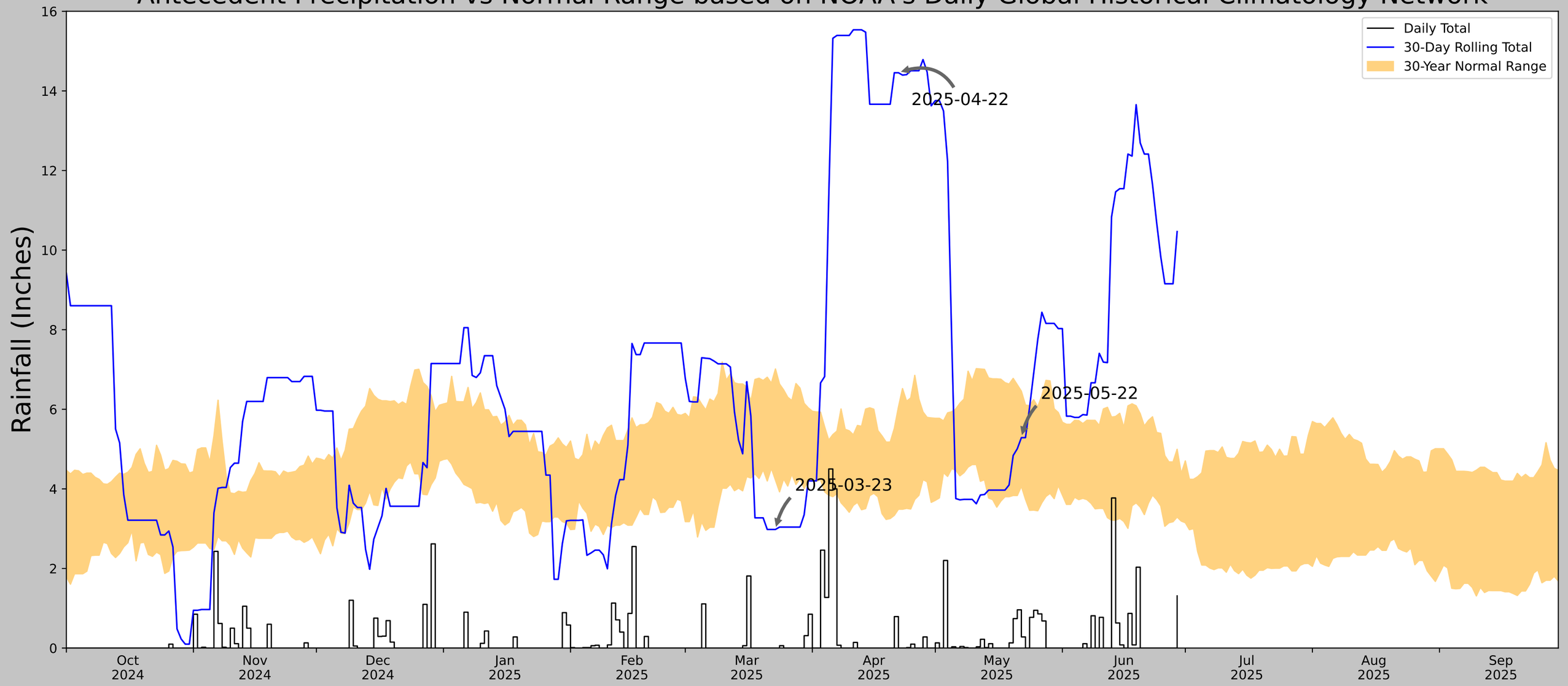
Date: 5/22/2025

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 | 35.624177 | -89.431454 | Lagoon Creek | | No | Not Applicable | 397 | 0.01 |
| WWC-2/UDF-2 | Wet Weather Conveyance/Upland Drainage | 35.62426 | -89.431551 | Lagoon Creek | | No | Not Applicable | 385 | 0.01 |
| STR-1 | Perennial Stream | 35.624545 | -89.430903 | Lagoon Creek | | Yes | Unassessed | 166 | 0.11 |
| WWC-3/EPH-1 | Wet Weather Conveyance/Ephemeral Stream | 35.624697 | -89.430992 | Lagoon Creek | | No | Not Applicable | 51 | 0 |
| WWC-4/UDF-3 | Wet Weather Conveyance/Upland Drainage | 35.624887 | -89.430433 | Lagoon Creek | | No | Not Applicable | 383 | 0.01 |
| | | | | | | | | | |
| | | | | | | | **Total:** | 1,382 | 0.14 |

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.

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




| | |
|---|---|
| Coordinates | 35.624523, -89.430956 |
| Observation Date | 2025-05-22 |
| Elevation (ft) | 298.051 |
| 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 |
|---|---|---|---|---|---|---|---|
| 2025-05-22 | 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

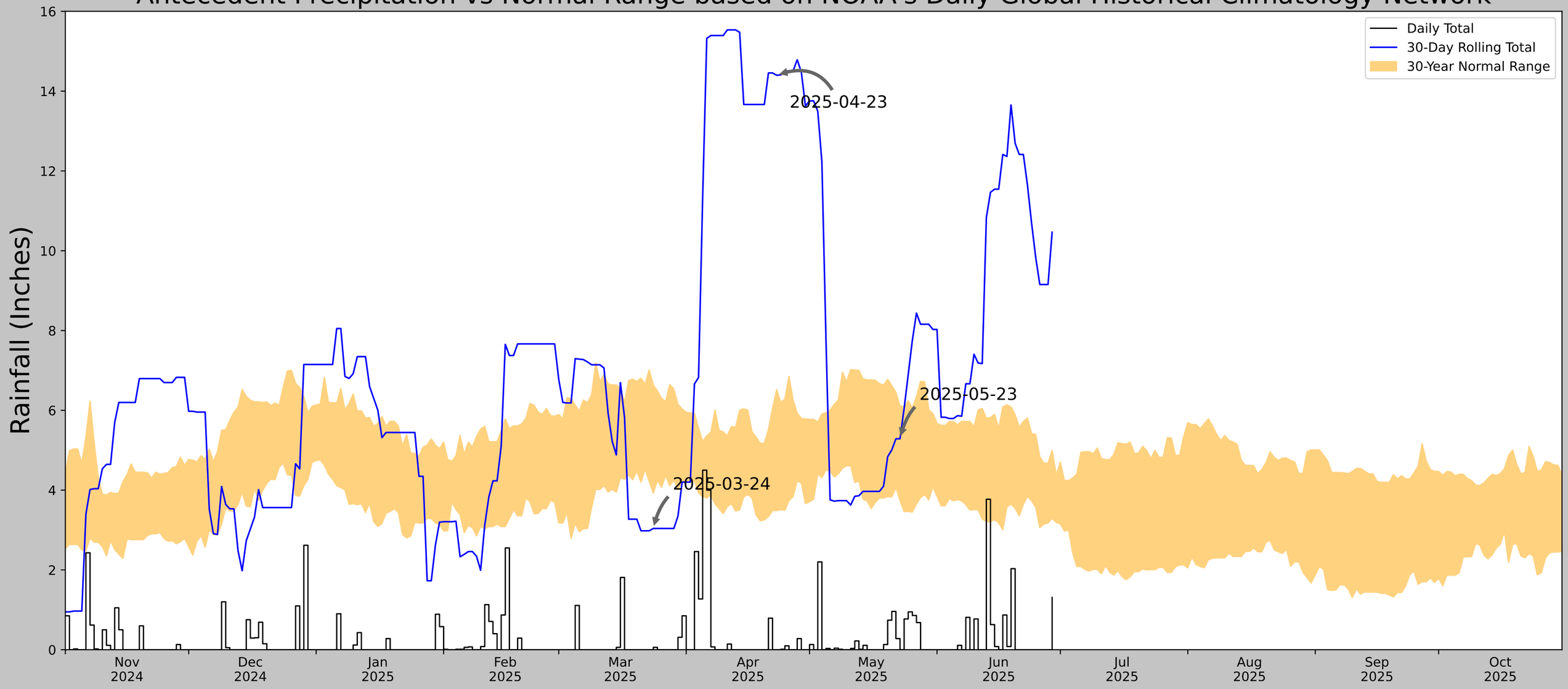
ERDC

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 | 9.898 | 75.965 | 5.206 | 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 | 35.624523, -89.430956 |
| Observation Date | 2025-05-23 |
| Elevation (ft) | 298.051 |
| 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 |
|---|---|---|---|---|---|---|---|
| 2025-05-23 | 3.737795 | 6.105906 | 5.287402 | Normal | 2 | 3 | 6 |
| 2025-04-23 | 3.487795 | 6.52126 | 14.397638 | Wet | 3 | 2 | 6 |
| 2025-03-24 | 3.92441 | 6.633465 | 3.03937 | Dry | 1 | 1 | 1 |
| Result | | | | | | | Normal Conditions - 13 |

US Army Corps of Engineers

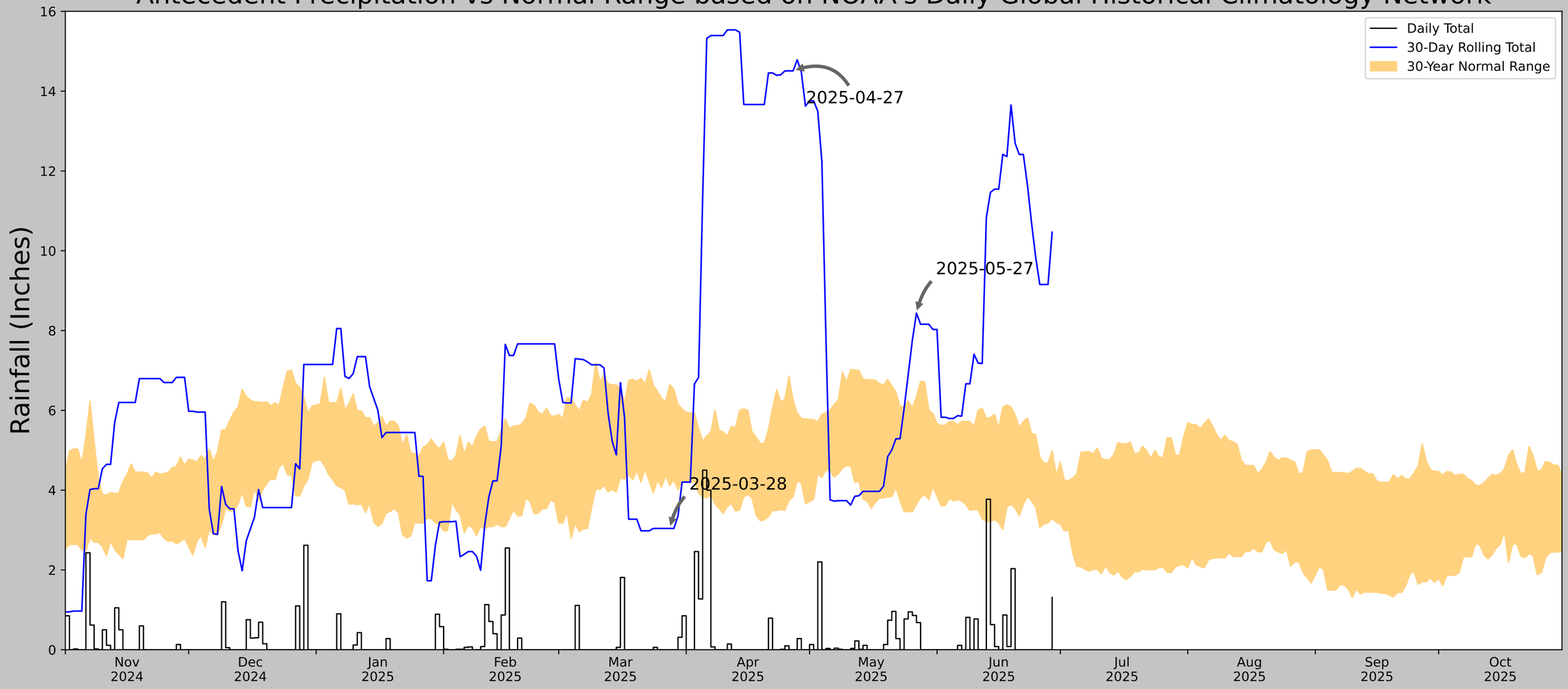
ERDC

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 | 9.898 | 75.965 | 5.206 | 11116 | 69 |
| BROWNSVILLE 1.0 SE | 35.5841, -89.2423 | 348.097 | 1.082 | 25.919 | 0.515 | 77 | 21 |
| 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 | 35.624523, -89.430956 |
| Observation Date | 2025-05-27 |
| Elevation (ft) | 298.051 |
| 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 | 9.898 | 75.965 | 5.206 | 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:** PN136185.01 | | | | | |
|---|---|---|---|---|---|
| **Biologist:** | I. Maldonado / L. Niven | **Affiliation:** | Athena EE | **Date:** | 5/22/2025 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1-Station**: from plans | | | | | | | | | | | |
| **2-Map label and name** | LM 2.30/ WWC-1 / UDF-1 | | | | | | | | | | |
| **3-Latitude/Longitude** | 35.624177, -89.431454 | | | | | | | | | | |
| **4-Feature description**: | | | | | | | | | | | |
| **-channel identification** | perennial stream | | intermittent stream | | ephemeral stream | | wwc | ✓ | | | |
| **-HD score (if applicable)** | 8.75 | | | | | | | | | | |
| **-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** | 1' | | -top of bank width | | 2' | | | | | | |
| **-width and max depth at ordinary high water mark** | 1' and .5' | | | | | | | | | | |
| **-width at bankfull** | 2' | | | | | | | | | | |
| **-bank height** | LDB - 1' | | | | RDB - 1' | | | | | | |
| **-riffle/pool complex or other specialized habitat present?** | N/A | | | | | | | | | | |
| **-dominant riparian species: ----------(LDB /RDB)----------** | LDB: grasses | | | | | | | | | | |
| | RDB: grasses | | | | | | | | | | |
| **-particle size distribution %** | Silt/Sand: | 85 | Gravel: | 15 | Cobble: | | Boulder: | 0 | Bedrock: | 0 | |
| **5-photo numbers** | 1-6 | | | | | | | | | | |
| **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** | | | | | | | | | | | |

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 : 136185.01 |
| Site Name/Description: SR-87 Bridge Repair Over Branch | |
| Site Location: WWC-1/UDF-1 (LM 2.30) | |
| HUC (12 digit): 080102080801- Lagoon Creek | Latitude: 35.624177 |
| Previous Rainfall (7-days) : 2.87" | Longitude: -89.431454 |
| Precipitation this Season vs. Normal : average<br>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 : 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) =** 8.75

**Justification / Notes :**

roadside ditch between ag field

no riparian buffer

forms confluence with main stream under bridge

## Secondary Field Indicator Evaluation

| A. Geomorphology (Subtotal = 4.25) | 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 | 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 | 0.25 |
| 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 = 1.50) | 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 | 0.75 |
| 17. Sediment on plants or on debris | 0 | 0.5 | 1 | 1.5 | 0.5 |
| 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 = 3.00) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 20. Fibrous roots in channel bed [1] | 3 | 2 | 1 | 0 | 1.5 |
| 21. Rooted plants in the thalweg [1] | 3 | 2 | 1 | 0 | 1.5 |
| 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 = 8.75

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

**Notes :**

Low sinuosity

Trenched drainage

water in channel, but recent rains influenced

culverts act as grade control

telephone pole in channel

# Ecology Field Data Sheet: **Water Resources**

| **Project:** PN136185.01 | | | | | |
|---|---|---|---|---|---|
| **Biologist:** | I. Maldonado / L. Niven | **Affiliation:** | Athena EE | **Date:** | 5/22/2025 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1-Station**: from plans | | | | | | | | | | | |
| **2-Map label and name** | LM 2.30/ WWC-2 / UDF-2 | | | | | | | | | | |
| **3-Latitude/Longitude** | 35.624260, -89.431551 | | | | | | | | | | |
| **4-Feature description**: | | | | | | | | | | | |
| **-channel identification** | perennial stream | | intermittent stream | | ephemeral stream | | wwc | ✓ | | | |
| **-HD score (if applicable)** | 9.75 | | | | | | | | | | |
| **-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** | 1' and .5' | | | | | | | | | | |
| **-width at bankfull** | 3' | | | | | | | | | | |
| **-bank height** | LDB - 1' | | | | RDB - 1' | | | | | | |
| **-riffle/pool complex or other specialized habitat present?** | N/A | | | | | | | | | | |
| **-dominant riparian species: ----------(LDB /RDB)----------** | LDB: grasses | | | | | | | | | | |
| | RDB: grasses | | | | | | | | | | |
| **-particle size distribution %** | Silt/Sand: | 90 | Gravel: | 10 | Cobble: | | Boulder: | 0 | Bedrock: | 0 | |
| **5-photo numbers** | 7-12 | | | | | | | | | | |
| **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

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 : 136185.01 |
| Site Name/Description: SR-87 Bridge Repair Over Branch | |
| Site Location: WWC-2/UDF-2 (LM 2.30) | |
| HUC (12 digit): 080102080801- Lagoon Creek | Latitude: 35.624260 |
| Previous Rainfall (7-days) : 2.87" | Longitude: -89.431551 |
| Precipitation this Season vs. Normal : average<br>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 : 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) =** 9.75

**Justification / Notes :**

roadside ditch between road and forested area

slight riparian buffer

forms confluence with main stream under bridge

Water in channel, but from recent rains

## Secondary Field Indicator Evaluation

| A. **Geomorphology** (Subtotal = 4.25) | 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 | 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 | 0.25 |
| 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 = 1.50) | 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 | 0.75 |
| 17. Sediment on plants or on debris | 0 | 0.5 | 1 | 1.5 | 0.5 |
| 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 = 4.00) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 20. Fibrous roots in channel bed [1] | 3 | 2 | 1 | 0 | 2 |
| 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 = 9.75

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

**Notes :**

Low sinuosity

Trenched drainage

water in channel, but recent rains influenced

similar to WWC across roadway

# Ecology Field Data Sheet: **Water Resources**

| **Project:** PN136185.01 | | | | | |
|---|---|---|---|---|---|
| **Biologist:** | I. Maldonado / L. Niven | **Affiliation:** | Athena EE | **Date:** | 5/22/2025 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1-Station**: from plans | | | | | | | | | | |
| **2-Map label and name** | LM 2.30/ STR-1 | | | | | | | | | |
| **3-Latitude/Longitude** | 35.624545, -89.430903 | | | | | | | | | |
| **4-Feature description**: | | | | | | | | | | |
| **-channel identification** | perennial stream | ✓ | intermittent stream | | ephemeral stream | | wwc | | | |
| **-HD score (if applicable)** | 20.75 | | | | | | | | | |
| **-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 | | 35' | | | | | |
| **-width and max depth at ordinary high water mark** | 30' and 3' | | | | | | | | | |
| **-width at bankfull** | 35' | | | | | | | | | |
| **-bank height** | LDB - 8' | | RDB - 8' | | | | | | | |
| **-riffle/pool complex or other specialized habitat present?** | riffle/pool | | | | | | | | | |
| **-dominant riparian species: ----------(LDB /RDB)----------** | LDB: Juglans nigra | | | | | | | | | |
| | RDB: Acer negundo | | | | | | | | | |
| **-particle size distribution %** | Silt/Sand: 65 | | Gravel: 25 | | Cobble: 10 | | Boulder: 0 | | Bedrock: 0 | |
| **5-photo numbers** | 13-16 | | | | | | | | | |
| **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 : 136185.01 |
| Site Name/Description: SR-87 Bridge Repair Over Branch | |
| Site Location: STR-1 (LM 2.30) | |
| HUC (12 digit): 080102080801- Lagoon Creek | Latitude: 35.624545 |
| Previous Rainfall (7-days) : 2.87" | Longitude: -89.430903 |
| Precipitation this Season vs. Normal : average<br>Source of recent & seasonal precip. data : NOAA / weather.gov | |
| Watershed Size : 1.97 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 |
| 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) =** 20.75

**Justification / Notes :**

Main stream under bridge

great riparian buffer

Deep stream. Could not perform evaluation on in-channel criteria, however still scored a stream based on visual indicators.

## 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 |
| 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 | 0.75 |
| 9. Natural levees | 0 | 1 | 2 | 3 | 0.5 |
| 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 | 1.5 |

| B. Hydrology (Subtotal = 6.00) | 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 | 0.75 |
| 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 |

| C. Biology (Subtotal = 3.00) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 20. Fibrous roots in channel bed [1] | 3 | 2 | 1 | 0 | NA |
| 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 = 20.75

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

### Notes :

Low sinuosity

Very turbid from recent rain / elevated water level

No Biology observed, due to turbidity. Did not score, but assume presence.

Did not score Hydric Soils, but assume presence.

Score likely several points higher when water depth is lower.

# Ecology Field Data Sheet: **Water Resources**

| **Project:** PN136185.01 | | | | | |
|---|---|---|---|---|---|
| **Biologist:** | I. Maldonado / L. Niven | **Affiliation:** | Athena EE | **Date:** | 5/22/2025 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1-Station**: from plans | | | | | | | | | | |
| **2-Map label and name** | LM 2.30/ WWC-3 / EPH-1 | | | | | | | | | |
| **3-Latitude/Longitude** | 35.624697, -89.430992 | | | | | | | | | |
| **4-Feature description**: | | | | | | | | | | |
| **-channel identification** | perennial stream | | intermittent stream | | ephemeral stream | | wwc | ✓ | | |
| **-HD score (if applicable)** | 12.5 | | | | | | | | | |
| **-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** | 1.5' | | -top of bank width | | 3' | | | | | |
| **-width and max depth at ordinary high water mark** | 1' and .5' | | | | | | | | | |
| **-width at bankfull** | 3' | | | | | | | | | |
| **-bank height** | LDB - 1.5' | | RDB - 1.5' | | | | | | | |
| **-riffle/pool complex or other specialized habitat present?** | N/A | | | | | | | | | |
| **-dominant riparian species: ----------(LDB /RDB)----------** | LDB: grasses | | | | | | | | | |
| | RDB: grasses | | | | | | | | | |
| **-particle size distribution %** | Silt/Sand: | 90 | Gravel: | 10 | Cobble: | | Boulder: | 0 | Bedrock: | 0 |
| **5-photo numbers** | 17-20 | | | | | | | | | |
| **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 : 136185.01 |
| Site Name/Description: SR-87 Bridge Repair Over Branch | |
| Site Location: WWC-3/EPH-1 (LM 2.30) | |
| HUC (12 digit): 080102080801- Lagoon Creek | Latitude: 35.624697 |
| Previous Rainfall (7-days) : 2.87" | Longitude: -89.430992 |
| Precipitation this Season vs. Normal : average<br>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 : Forested | |
| Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Absent | |

## 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) =** 12.50

**Justification / Notes :**

ephemeral drainage in forested area

Good riparian buffer

forms confluence with main stream under bridge

Water in channel, but from recent rains

## Secondary Field Indicator Evaluation

| A. Geomorphology (Subtotal = 5.75) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 1. Continuous bed and bank | 0 | 1 | 2 | 3 | 1.5 |
| 2. Sinuous channel | 0 | 1 | 2 | 3 | 1.5 |
| 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 |
| 9. Natural levees | 0 | 1 | 2 | 3 | 0 |
| 10. Headcuts | 0 | 1 | 2 | 3 | 0 |
| 11. Grade controls | 0 | 0.5 | 1 | 1.5 | 0.75 |
| 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 | 0.5 |
| 17. Sediment on plants or on debris | 0 | 0.5 | 1 | 1.5 | 0.5 |
| 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 | | 1.5 |

| C. Biology (Subtotal = 4.00) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 20. Fibrous roots in channel bed [1] | 3 | 2 | 1 | 0 | 2 |
| 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 = 12.50

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

**Notes :**

several logs, branches across channel catching leaves in channel.

moist channel

# Ecology Field Data Sheet: **Water Resources**

| **Project:** PN136185.01 | | | | | |
|---|---|---|---|---|---|
| **Biologist:** | I. Maldonado / L. Niven | **Affiliation:** | Athena EE | **Date:** | 5/22/2025 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1-Station**: from plans | | | | | | | | | | |
| **2-Map label and name** | LM 2.30/ WWC-4 / UDF-3 | | | | | | | | | |
| **3-Latitude/Longitude** | 35.624887, -89.430433 | | | | | | | | | |
| **4-Feature description**: | | | | | | | | | | |
| **-channel identification** | perennial stream | | intermittent stream | | ephemeral stream | | wwc | ✓ | | |
| **-HD score (if applicable)** | 8.25 | | | | | | | | | |
| **-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** | 1.5' | | -top of bank width | 3' | | | | | | |
| **-width and max depth at ordinary high water mark** | 1' and .5' | | | | | | | | | |
| **-width at bankfull** | 3' | | | | | | | | | |
| **-bank height** | LDB - 1.5' | | RDB - 1.5' | | | | | | | |
| **-riffle/pool complex or other specialized habitat present?** | N/A | | | | | | | | | |
| **-dominant riparian species: ----------(LDB /RDB)----------** | LDB: grasses | | | | | | | | | |
| | RDB: grasses | | | | | | | | | |
| **-particle size distribution %** | Silt/Sand: | 90 | Gravel: | 10 | Cobble: | | Boulder: | 0 | Bedrock: | 0 |
| **5-photo numbers** | 21-24 | | | | | | | | | |
| **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** | Roadside Drainage | | | | | | | | | |

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 : 136185.01 |
| Site Name/Description: SR-87 Bridge Repair Over Branch | |
| Site Location: WWC-4/UDF-3 (LM 2.30) | |
| HUC (12 digit): 080102080801- Lagoon Creek | Latitude: 35.624887 |
| Previous Rainfall (7-days) : 2.87" | Longitude: -89.430433 |
| Precipitation this Season vs. Normal : average<br>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 : 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 =** WET WEATHER CONVEYANCE

**Secondary Indicator Score (if applicable) =** 8.25

**Justification / Notes :**

Roadside drainage, enters forested area and forms confluence with WWC-3 and STR-1

Good riparian buffer once it enters forested area

no flow

## Secondary Field Indicator Evaluation

| A. Geomorphology (Subtotal = 4.50) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 1. Continuous bed and bank | 0 | 1 | 2 | 3 | 1 |
| 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 |
| 9. Natural levees | 0 | 1 | 2 | 3 | 0 |
| 10. Headcuts | 0 | 1 | 2 | 3 | 0 |
| 11. Grade controls | 0 | 0.5 | 1 | 1.5 | 0.5 |
| 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 | 0.5 |
| 17. Sediment on plants or on debris | 0 | 0.5 | 1 | 1.5 | 0.5 |
| 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 = 2.50) | Absent | Weak | Moderate | Strong | |
|---|---|---|---|---|---|
| 20. Fibrous roots in channel bed [1] | 3 | 2 | 1 | 0 | 1.5 |
| 21. Rooted plants in the thalweg [1] | 3 | 2 | 1 | 0 | 1 |
| 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 = 8.25

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

**Notes :**

no biology

dissipates shortly in forested area, but reforms before confluence with WWC-3.


Photo 1: WWC-1/UDF-1 Start downgradient


Photo 2: WWC-1/UDF-1 Start upgradient


Photo 3: WWC-1/UDF-1 Culvert 24” Steel CP facing downgradient


Photo 4: WWC-1/UDF-1 Culvert 24” Steel CP facing upgradient


Photo 5: WWC-1/UDF-1 downgradient


Photo 6: WWC-1/UDF-1 End upgradient across STR-1


Photo 7: WWC-2/UDF-2 Start downgradient


Photo 8: WWC-2/UDF-2 Start upgradient


Photo 9: WWC-2/UDF-2 downgradient


Photo 10: WWC-2/UDF-2 upgradient


Photo 11: WWC-2/UDF-2 End downgradient into STR-1


Photo 12: WWC-2/UDF-2 End upgradient


Photo 13: STR-1 downstream


Photo 14: STR-1 upstream

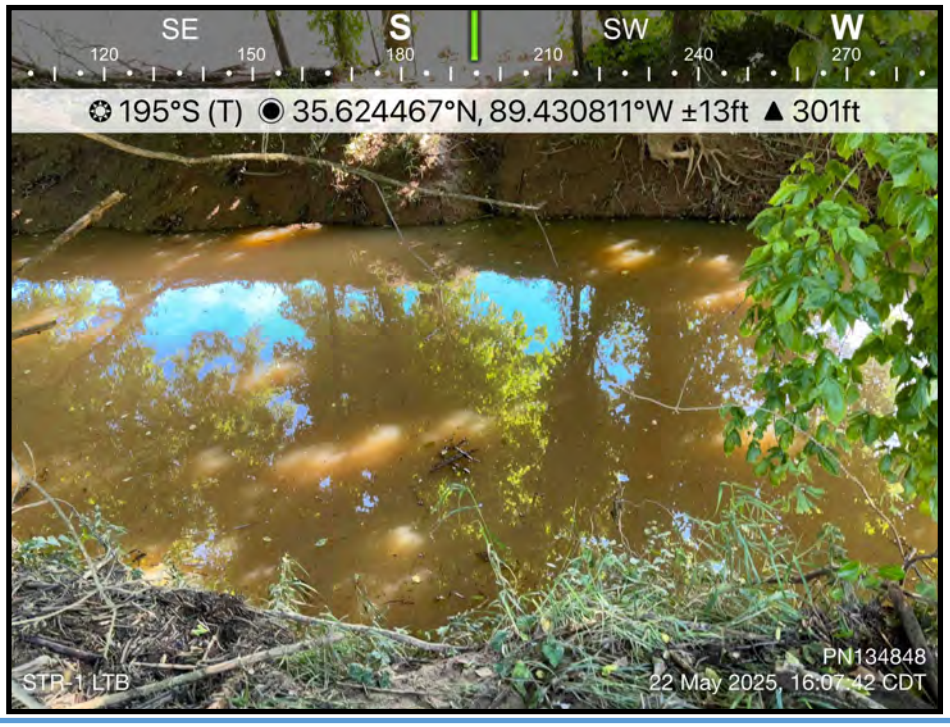



Photo 15: STR-1 left top bank


Photo 16: STR-1 right top bank


Photo 17: WWC-3/EPH-1 End downgradient facing STR-1


Photo 18: WWC-3/EPH-1 End upgradient


Photo 19: WWC-3/EPH-1 Start downgradient


Photo 20: WWC-3/EPH-1 Start upgradient


Photo 21: WWC-4/UDF-3 End downgradient


Photo 22: WWC-4/UDF-3 End upgradient


Photo 23: WWC-4/UDF-3 Start downgradient


Photo 24: WWC-4/UDF-3 Start upgradient

Outlook

## [EXTERNAL] Re: IPaC delivered Official Species List for project: 134848.00, SR-87 Bridge over Branch, LM 2.30

**From** TDOT_USFWS <tdot_usfws@fws.gov>
**Date** Wed 5/21/2025 9:14 AM
**To** William Methvin <William.Methvin@tn.gov>
**Cc** Sikula, Nicole R <nicole_sikula@fws.gov>; Harris, Abigail N <abigail_harris@fws.gov>; DeVore, Christopher <Christopher_DeVore@fws.gov>; Casey Parker <Casey.Parker@tn.gov>; Rita M. Thompson <Rita.M.Thompson@tn.gov>



Will,

Thank you for your correspondence regarding the SR-87 bridge replacement at LM 2.30 in Haywood County, Tennessee (PIN: 134848.00). 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,

Wesley Giddens
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501
Email: david_giddens@fws.gov
Cell Phone: (931)260-6938

*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.*

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**From:** Administrator Email <ecosphere_support@ecosphere.fws.gov>
**Sent:** Tuesday, April 29, 2025 10:06 AM
**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: 134848.00, SR-87 Bridge over Branch, LM 2.30

**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 (2025-0089576) 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 SR-87 Bridge replacement PIN 134848.00

Mr. William Methvin,

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