

## Concept Report Form

The Concept Report Form develops an initial project vision, basis of design and report (e.g., the Concept Report) to transition into the subsequent design stages (Stages 1 through 4 in the Project Delivery Network [PDN]). This form summarizes all project components using information to complete the Concept Report.

### General Project Information

<b>Project Name</b>	Bridge over Branch									
<b>PIN</b>	134884.00									
<b>Route Information</b>	<b>Route</b>	<b>NHS (Y/N)</b>	<b>Functional Class</b>			<b>City</b>		<b>County</b>		
	SR-54	No	Rural Major Collector			Brownsville		Haywood		
<b>Project Information</b>	<b>Begin Log Mile</b>	<b>End Log Mile</b>	<b>AADT<sup>1</sup></b>	<b>Design Hour Vol. (DHV)<sup>1</sup></b>	<b>Truck %<sup>1</sup></b>	<b>Design Speed (MPH)</b>	<b>Posted Speed (MPH)</b>	<b>Base Year</b>	<b>Design Year</b>	
	16.73		2,690	296	6.00	60	55	2029	2049	
<b>Project Description &amp; Standard Drawings Used</b>	<p>The proposed bridge is to be a 50' single span bridge using 24" box beams. The typical section for the approach and bridge will be 2-11' foot travel lanes with 4' shoulders (Design Exception Required). The out-to-out width is 31'3". The proposed grade and vertical clearance will be raised 1.5'. Detouring traffic during construction is recommended. The state route detour is 52 minutes (44.8 miles); the local route detour is 23 minutes (16.5 miles). Superstructure depth is 37.75" = 24" (beam) + 10" (deck) + 3.75" (width (in inches) x0.02/2).</p> <p>RD11-TS-2</p>									
<b>Important Project History or Related Projects</b>	<p>The existing structure is a 2 span timber bridge, 34' long with an out-to-out width of 29'. The existing structure has 2-11' travel lanes with minimal to no shoulders. The listed weight limit on the inspection report is 40 tons (08/15/0223). The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 1.1 square miles: Q10 is 775 cfs, Q50 is 1040 cfs, and Q100 is 1140 cfs.</p> <p>This project is not expected to utilize federal funding.</p>									
<b>Project Purpose/Need</b>	<p>The need to replace this bridge is due to the present condition of the existing bridge:</p> <ul style="list-style-type: none"> <li>-Built in 1993</li> <li>-Timber bridges are being phased out</li> <li>-Current typical section does not meet TDOT standards</li> <li>-Bridge is in POOR condition</li> </ul>									
<b>Major Environmental Considerations</b>	<p>Archaeology: A survey will be required.          Historic Preservation: Survey will be required.          Ecology: Species records in vicinity of project will likely require surveys and/or time of year restrictions.          NEPA: if state funded, a TEER will be produced unless there is a federal nexus.</p>									

Project Details

<p><b>Multi-Modal Considerations</b></p>	<p>This project is in a rural area with a proposed 2-lane bridge width of less than 44 ft where the cost of dedicated multimodal accommodations is excessively disproportionate to the need and probable use. Excessively disproportionate is defined as exceeding 20 percent of the cost of the project.</p>	
<p><b>Major Project Risks</b></p>	<p>Approx. 0.43 acres of ROW to be acquired under the detour option and ABC option. Telecom Utilities are present. This bridge replacement should be coordinated with the replacements at L.M. 17.63 and L.M. 13.92 along SR -54.</p> <p>This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.</p>	

<sup>1</sup> Traffic numbers reflect identified design year

**Approvals**

*Executed for approval of this Concept Report*

David Duncan  
[David Duncan \(Nov 25, 2024 14:10 CST\)](#)  
 Engineering Concepts and Statewide Programs Director

11/25/2024  
 Date

*The following individuals to execute if a bridge concept report:*

Jed A. Kniagewyaz  
 Structures Director

11/25/2024  
 Date

BLA  
 Regional Project Management Director

11/26/2024  
 Date

## Action Checklist

OSD1 Initiate Concept Report and Request Funding		
Complete	NA	Date Completed
✓		Request and Finalize Safety Data
✓		Request Project Number, PIN, and Task Profile Numbers
	✓	Coordinate with Long Range Planning
✓		Request and Finalize Traffic Data
	✓	Request Preliminary Survey Data
	✓	Initiate Division Reviews
	✓	Schedule Site Review (with appropriate Divisions)
0EN1 Conduct Environmental Desktop Review		
Complete	NA	Date Completed
✓		Confirm Environmental Desktop Review is Complete
0MM1 Conduct Multimodal Review		
Complete	NA	Date Completed
	✓	Confirm Multimodal Review is Complete
	✓	Review Multimodal Considerations & Recommendations
0TO1 Conduct Initial Traffic Ops/TSMO Review <i>(include HQ Traffic Ops and Regional Traffic Office)</i>		
Complete	NA	Date Completed
	✓	Confirm Transportation Systems Management & Operations (TSMO) Alignment & Operations Review is Complete
	✓	Request Concept Report Review
0ST1 Develop Structures Recommendations		
Complete	NA	Date Completed
✓		Confirm Recommended Structure Type for Concept Report is Complete
✓		Confirm Hydraulic Recommendations for Concept Report is Complete
0SY1 Provide Preliminary Survey Data		
Complete	NA	Date Completed
	✓	Confirm Control Ground Survey Set
	✓	Review Preliminary Survey Data
	✓	Determine Time to Complete the Aerial Survey
0GT1 Conduct Preliminary Geotechnical Assessment		
Complete	NA	Date Completed
	✓	Confirm Geotechnical Division Review is Complete
0RD1 Provide Roadway Desktop Review		
Complete	NA	Date Completed
		Confirm Roadway Division Review is Complete

## Action Checklist

OSD2 Develop Draft Concept Report		
Complete	NA	Date Completed
	✓	Conduct Intersection and Interchange Evaluation (IIE)
	✓	Complete Conceptual Signal Warrants
	✓	Develop Draft Conceptual Layouts/Crash Figures for Site Visit
	✓	Compile Initial Divisional Reviews for Site Visit
	✓	Prepare & Send Site Visit Packet
	✓	Lead Site Visit
	✓	Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA (if applicable)
✓		Develop, Compile, and Distribute the Draft Concept Report
		08/12/2024
OTO2 Develop TSMO Scope Items <i>(include HQ Traffic Ops and Regional Traffic Office)</i>		
Complete	NA	Date Completed
	✓	Confirm Signal Warrants Analysis is Complete
	✓	Confirm Lighting Warrants Analysis is Complete
	✓	Review and Confirm TSMO & ITS Scope and Budget
ORW1 Complete Preliminary Right-of-Way Estimates		
Complete	NA	Date Completed
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates
OUT1 Complete Utility Preliminary Estimates		
Complete	NA	Date Completed
✓		Review and Confirm Preliminary Utility Estimate
	✓	Review and Confirm Preliminary Railroad Cost Estimate
		10/17/2024
OSD3 Finalize Concept Report		
Complete	NA	Date Completed
	✓	Compile and Review Initial Risk Assessment
✓		Finalize Conceptual Layouts
		11/21/2024
✓		Develop Environmental Technical Study Area (ETSA)
		08/12/2024
✓		Address Comments and Finalize Concept Report
		11/21/2024
	✓	Address Comments and Finalize Interstate Access Requests (IAR) Document and Memo (if applicable)
	✓	Develop Roadway Safety Audit (RSA) No Plans Document
✓		Submit the final Concept Report for Review and Signatures (as needed; see OSD3 for additional information)
		11/21/2024
✓		Finalize Document and Upload All Needed Electronic Files
		12/2/2024
✓		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)
		12/2/2024

## NA Justification

Coordinate with Long Range Planning-Long Range Planning coordination not needed for STID BCR document  
Request Preliminary Survey Data- survey data not needed for STID BCR document  
Schedule a site visit-site visit not required  
0MM1 Conduct Multimodal Review- multimodal coordination not required  
0SY1 Provide Preliminary Survey Data- survey data not needed for STID BCR document  
0GT1 Conduct Preliminary Geotechnical Assessment- geotechnical data not received for STID BCR document  
0SD2 Develop Draft Concept Report-no site visit was held for this bridge and no interchange or signal warrants were required  
0TO2 Develop TSMO Scope Items-no signals or lighting needed within project limits  
0RW1 Complete Preliminary Right-of-Way Estimates-ROW estimate calculated in cost estimate  
0UT1 Complete Utility Preliminary Estimates-utility cost calculated in cost estimate  
Compile and Review Initial Risk Assessment-Risk Assessment not needed for STID BCR document  
Address Comments and Finalize Interstate Access Requests (IAR) Document and Memo (if applicable)-no interstate within project limits  
Develop Roadway Safety Audit (RSA) No Plans Document- no plans document not needed for STID BCR document

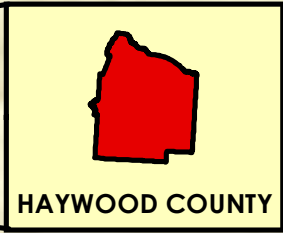
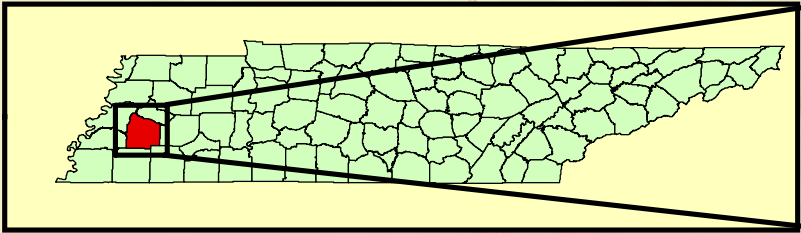
**Concept Report  
Table of Contents/Attachments**

	Included	NA
One-Page Summary (with project location map)	✓	
Conceptual Layout(s) and Cross Section	✓	
Environmental Technical Study Area (ETSA) Layout	✓	
Concept Cost Estimate (Construction Year Estimate)	✓	
TSMO & ITS Scope and Budget <sup>1</sup>		✓
ROW Form 44-A <sup>1</sup>		✓
Crash Packet <sup>1</sup>	✓	
Crash Prediction Analysis <sup>1</sup>		✓
Site Visit Attendee List		✓
Environmental Desktop Review Form <sup>1</sup>		
Multimodal Considerations & Recommendations <sup>1</sup>		✓
Existing Structure Summary <sup>1</sup>	✓	
Email or memo containing Structure Type Recommendations <sup>1</sup>	✓	
Email or memo containing Hydraulic Recommendations <sup>1</sup>	✓	
Hydraulic Data	✓	
Intersection and Interchange Evaluation (IIE) Analysis and Summary Form		✓
Traffic Analysis Summary/Tables	✓	
Forecasted Traffic Sheets <sup>1</sup>	✓	
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output) <sup>1</sup>		✓
Signal Warrant <sup>1</sup>		✓
Lighting Warrant <sup>1</sup>		✓
Initial Risk Assessment using the Risk Assessment Form		✓
Final Interstate Access Request (IAR) Document and Memo with Letter from STID Director		✓
Road Safety Audit (RSA) No Plans <sup>1</sup>		✓

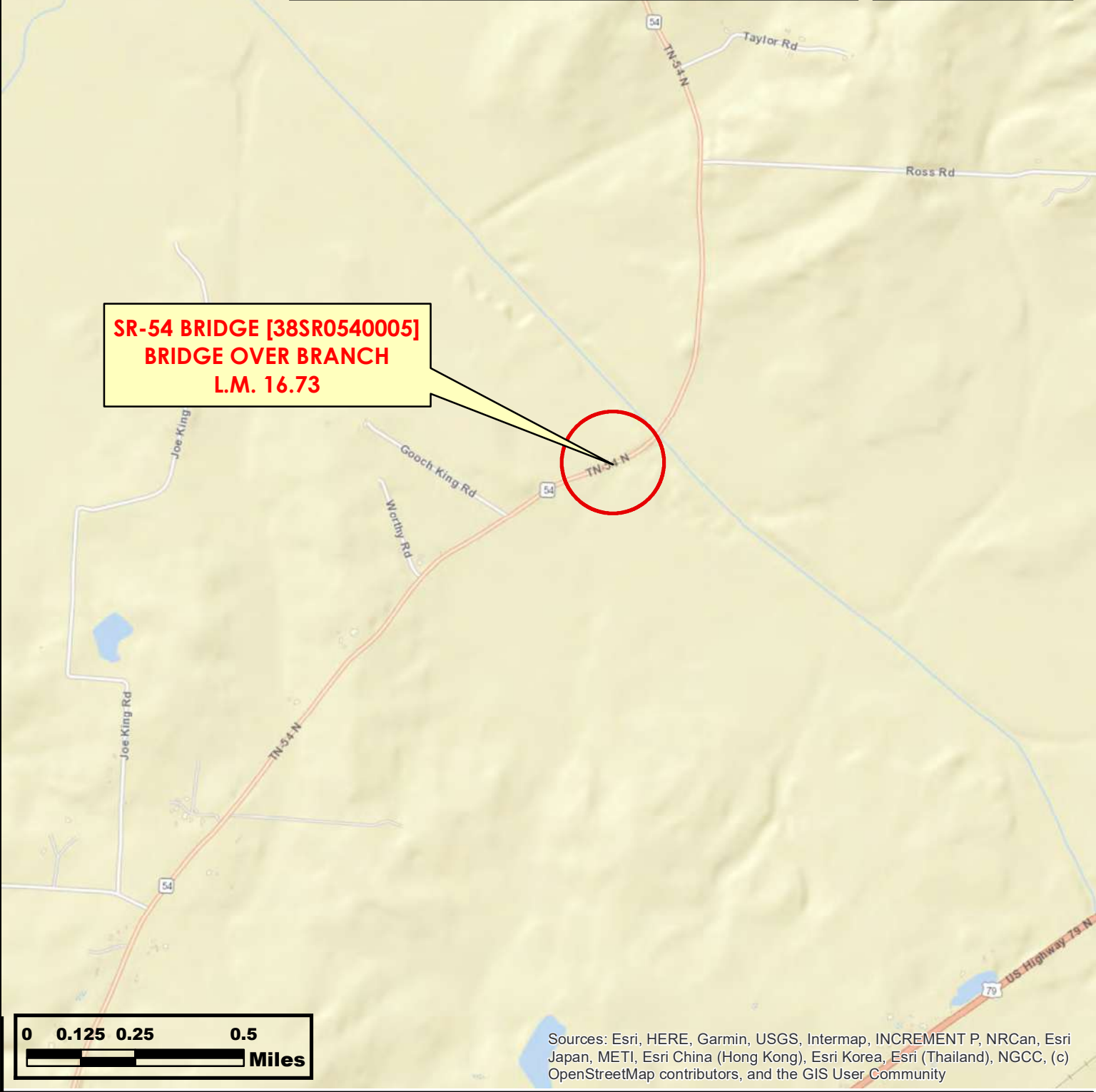
**NA Justification**

TSMO & ITS Scope and Budget-no ITS within project limits; ROW Form 44-A-form not needed for STID BCR document; Crash Prediction Analysis- 2 crashes occurred within the project limits, crash prediction analysis not needed; Site Visit Attendee List-no site visit was held; Multimodal Considerations & Recommendation-no multimodal coordination; Intersection and Interchange Evaluation (IIE) Analysis and Summary Form- AADT is too low for IIE Analysis Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output)- AADT too low to model Signal Warrant-no signals warranted within project limits; Lighting Warrant-no lighting warranted within project limits Initial Risk Assessment using the Risk Assessment Form-Risk Assessment not needed for STID BCR document Final IAR Document and Memo with Letter from STID Director-no interstate access within project limits Road Safety Audit (RSA) No Plans-RSA no plans document not needed for STID BTIR document

<sup>1</sup> External document to STID



**SR-54 BRIDGE [38SR0540005]  
BRIDGE OVER BRANCH  
L.M. 16.73**



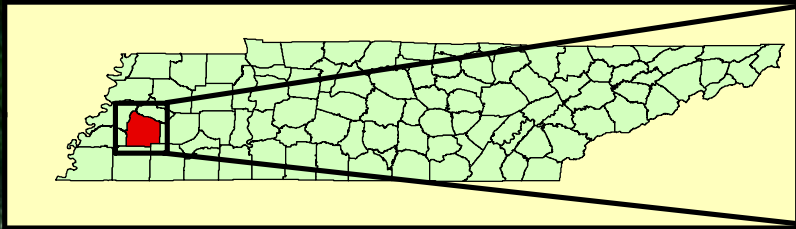
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



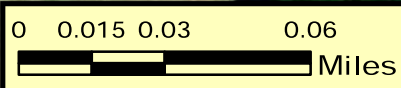
**AREA MAP**  
**SR-54 BRIDGE [38SR0540005]**  
**BRIDGE OVER BRANCH**  
**L.M. 16.73**  
**HAYWOOD COUNTY**



**PIN 134884.00**



SR-54 BRIDGE [38SR0540005]  
BRIDGE OVER BRANCH  
L.M. 16.73



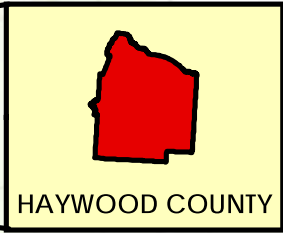
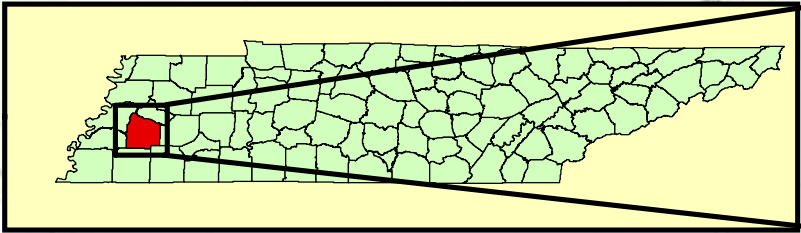
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



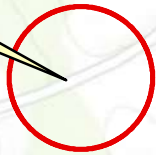
LOCATION MAP  
SR-54 BRIDGE [38SR0540005]  
BRIDGE OVER BRANCH  
L.M. 16.73  
HAYWOOD COUNTY



PIN 134884.00



**SR-54 BRIDGE [38SR0540005]  
BRIDGE OVER BRANCH  
L.M. 16.73**



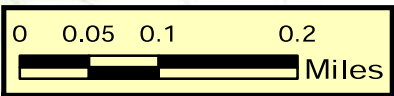
Gooch King Rd

Worthy Rd

54

Nixon Creek

350 ft



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



**TOPOGRAPHIC MAP  
SR-54 BRIDGE [38SR0540005]  
BRIDGE OVER BRANCH  
L.M. 16.73  
HAYWOOD COUNTY**



**PIN 134884.00**

**BRIDGE# 38SR0540005**  
**50' BRIDGE LENGTH**  
**SINGLE SPAN USING 24" BOX BEAM**  
**2-11' LANES W/ 4' SHOULDERS**  
**RAISE GRADE 1.5'**

**EXISTING ROW**

**S.R. 54**

**BRANCH >>>**

**PROPOSED ROW TO INCLUDE LIMITS OF RIPRAP IN CHANNEL AND ON BANKS**

I:\13\2024\109122 PM\X:\Projects\Haywood\SR-54\Bridges over Branch, L.M. 16.73 (TMA)\Project Files\Microstation\ConceptualPlans (DCN & PDF)\SR 54 Bridge over Branch, L.M. 16.73 - detour.dgn



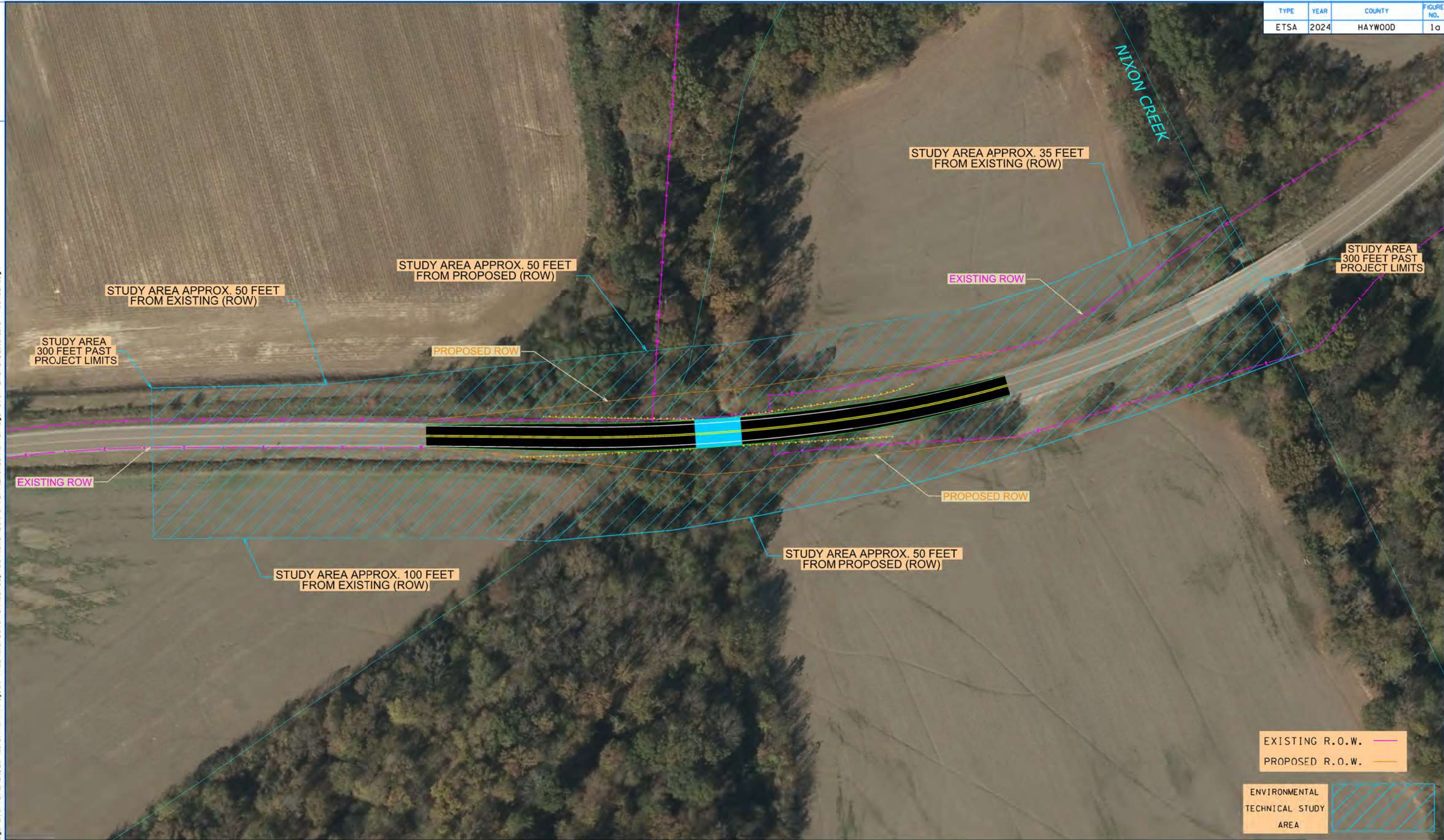
**R4 TIMBER BRIDGE PROGRAM**

STATE ROUTE 54  
 BRIDGE OVER BRANCH, L.M. 16.73  
 HAYWOOD COUNTY

**CAUTION!**  
**PRELIMINARY PLANS**  
**SUBJECT TO CHANGE**

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	HAYWOOD	1a

I:\4\2024\1106159 AM\Projects\Haywood\SR-54\Bridge over Branch, LM 16.73 (TMA)\Project Files\Microstation\ConceptualPlans\DN & PDF\ETSA\_SR 54 Bridge over Branch, L.M. 16.73 - detour.dgn



## ENVIRONMENTAL TECHNICAL STUDY AREA

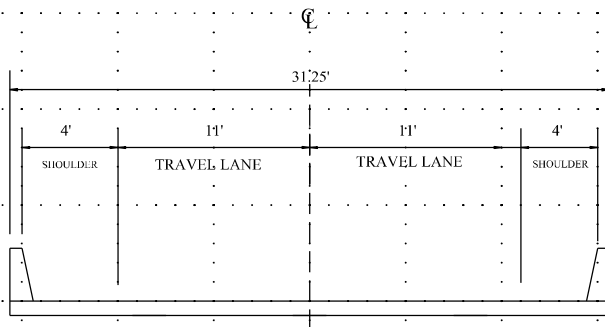
STATE ROUTE 54  
BRIDGE OVER BRANCH, L.M. 16.73  
HAYWOOD COUNTY

CAUTION!  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
S.T.I.D.

FIGURE 1a  
S.R. 54  
L.M. 16.73

**PROPOSED COMPLETED**



**CROSS-SECTION DETAIL**

**REGION 4 TIMBER BRIDGE PROGRAM  
TRANSPORTATION MODERNIZATION ACT (TMA)**

**CAUTION!  
PRELIMINARY  
PLANS  
SUBJECT TO  
CHANGE**

# DETOUR MAP - STATE ROUTE

52 min  
16 hr  
4 hr 5

- Haywood County, Tennessee 38012
- Alamo, Tennessee 38001
- Haywood County School District, Tennessee
- 12708 US-79, Bells, TN 38006
- Latisha Place, Brownsville, TN 38012
- Cornerstone of Praise Baptist Church, 12708 U.S. 79

Add destination

Options

Send directions to your phone Copy link

via TN-54 N 52 min  
52 min without traffic 44.8 miles

Details

Explore nearby Cornerstone of Praise Baptist Church

Search along the route Gas EV charging Hotels

Alamo, TN 38001

Alamo

Bells 12708 U.S. 79

Haywood County School District

Cornerstone of Praise Baptist Church

Map data ©2024 Google United States Terms Privacy Send Product Feedback 2 mi

# DETOUR MAP - LOCAL ROUTE

The image displays a Google Maps interface with a detour route highlighted in blue. The route starts at 3998-4038 TN-54, Brownsville, TN 38012 and ends at 3706-3996 TN-54, Brownsville, TN 38012. The detour route is 16.5 miles and takes 23 minutes. The direct route is also 16.5 miles but takes 23 minutes without traffic. The detour route passes through Haywood County School District, Belle Eagle, and Hidden Acres RV Park. The map includes various icons for transportation modes (car, bus, train, walking, bicycle, airplane), search along the route, gas, EV charging, and hotels. The left sidebar shows the route details and options, and the bottom right corner has map controls and a scale bar.

23 min 9 hr 1 hr 20

3998-4038 TN-54, Brownsville, TN 38012

Haywood County School District, Tennessee

Haywood County School District, Tennessee

3706-3996 TN-54, Brownsville, TN 38012

Add destination

Options

Send directions to your phone Copy link

via TN-54 N and Rudolph Rd 23 min  
23 min without traffic 16.5 miles  
Details

Explore nearby 3706-3996 TN-54

Restaurants Hotels Gas stations Parking Lots More

Search along the route Gas EV charging Hotels

Haywood County School District

Hickory Grove Church Cemetery

Haywood County School District

Belle Eagle

Thornton Airport-47M

Tabernacle Methodist Church

Hidden Acres RV Park

Kellums Heat & Air

3706-3996 Tennessee 54 3998-4038 Tennessee 54

23 min 16.5 miles

Google

Map data ©2024 United States Terms Privacy Send Product Feedback 1 mi

# Haywood SR054 - Bridge over Branch (LM 16.73)



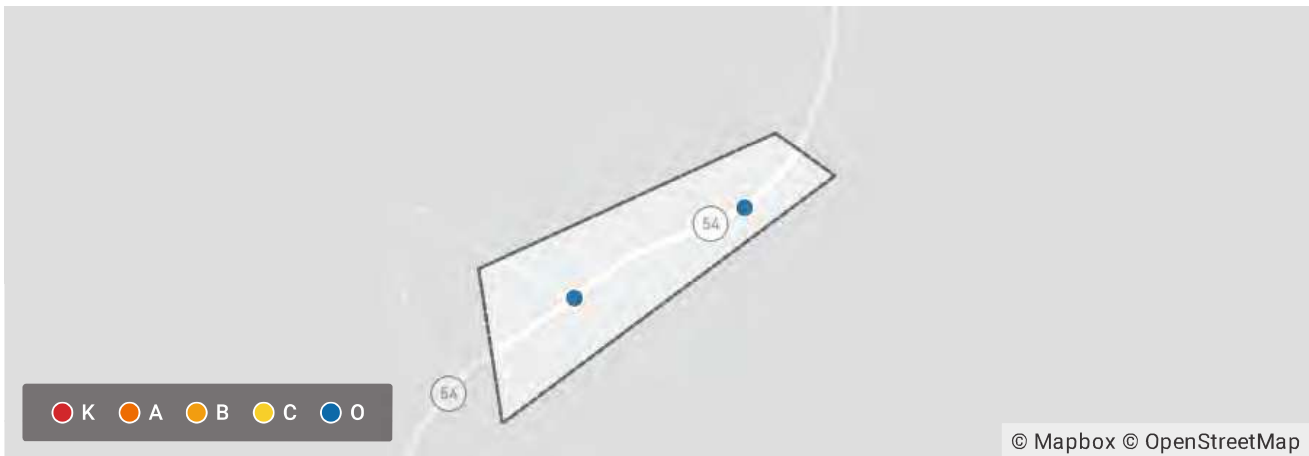
Created on April 10, 2024

Created by JOSHUA CLOUD

Data extents: April 4, 2021 to April 4, 2024

## Applied Filters

County = Haywood Shape: Polygon



Total Crashes	2	Fatal Crashes	0
---------------	---	---------------	---

Summary	Crash	
Total Crashes	2	100.00%
+ 5 more	0	0%

Type of Crash	Crash	
(O) Property-Damage Only	2	100.00%
+ 4 more	0	0%

Date of Crash (Year)	Crash	
2023	2	100.00%
+ 10 more	0	0%

Manner of First Collision	Crash	
No Collision W/ Vehicle	2	100.00%
+ 9 more	0	0%

First Harmful Event		Crash
Ditch	1	50.00%
Standing Tree	1	50.00%
+ 63 more	0	0%

Crash Location		Crash
Along Roadway	2	100.00%
+ 6 more	0	0%

Light Conditions		Crash
Dark-Not Lighted	1	50.00%
Daylight	1	50.00%
+ 6 more	0	0%

Weather Conditions		Crash
Clear	2	100.00%
+ 11 more	0	0%



Latitude:35.64278, Longitude:-89.23139

Region 04, 38 - Haywood County

Team Leader: Jacob Kee

Inspectors: Jacob Seager, Mandy McNeal, Tyler Prince, Jacob Castellaw



Right elevation



Bent 1 left side decay



Bent 1 front side decay



Bent 1 front side decay



Bent 1 front side decay



Bent 1 right side decay



Bent 1 rear side



Bent 1 decayed areas rear side



Left elevation



Abutment 1



Bent 1 cap A rear side



Span 2 bottom deck



Abutment 2 pile F grain cracks



Abutment 2 breast wall between piles D and E beginning to break/ splinter



Abutment 2 cap above pile G 1/16" grain crack



Abutment 2 cap splintered area



Abutment 2 cap looking ahead



Abutment 2 above pile D



Opposite Direction of Route



Approach 2 weight limit sign



Approach 2 pavement



View downstream



View upstream



View across top deck



Approach 1 pavement



Approach 1 weight limit sign



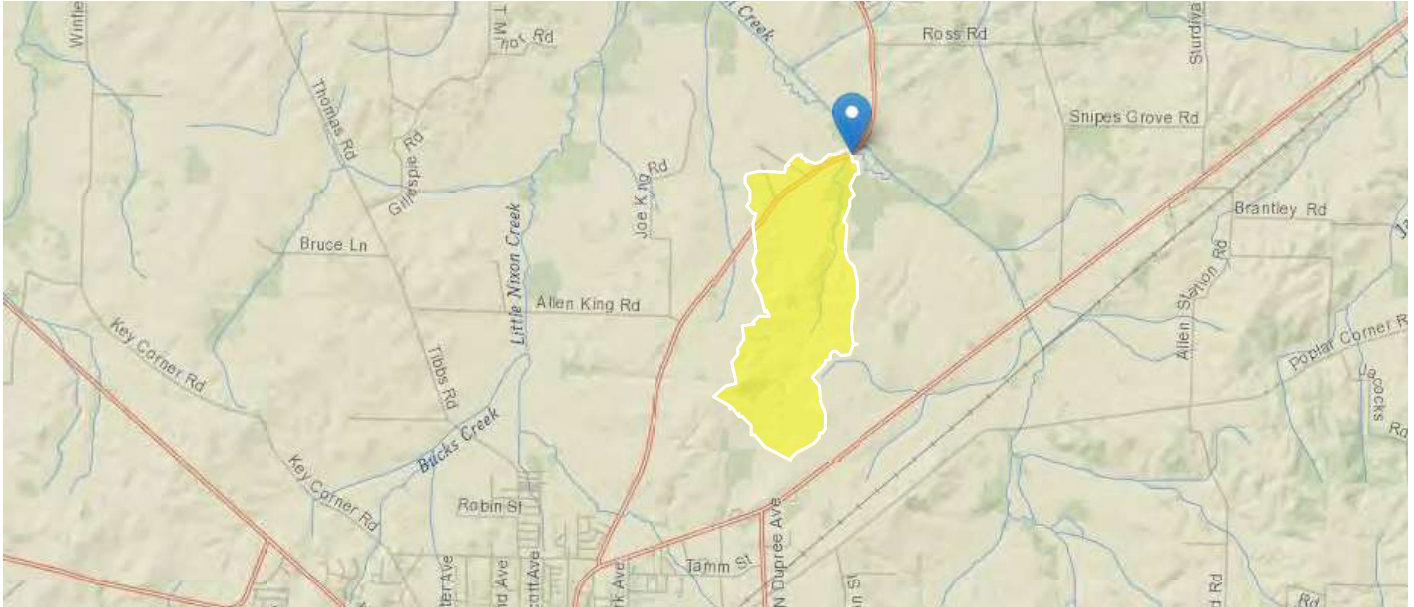
Direction of Route



Bridge number

# Haywood Co SR087 - Bridge over Branch (LM 16.73)

**Region ID:** TN  
**Workspace ID:** TN20240409145155335000  
**Clicked Point (Latitude, Longitude):** 35.64289, -89.23074  
**Time:** 2024-04-09 09:52:18 -0500



near Gooch King Rd

[+ Collapse All](#)

## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTKDA	Area that contributes flow to a point on a stream	1.1	square miles
DRNAREA	Area that drains to a point on a stream	1.1	square miles

## Peak-Flow Statistics

### Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTKDA	Contributing Drainage Area	1.1	square miles	0.76	2308

### Peak-Flow Statistics Flow Report [DAOnly Area 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIL	PIU	SE	ASEp	Equiv. Yrs.
50-percent AEP flood	458	ft <sup>3</sup> /s	240	872	38.7	38.7	1.8
20-percent AEP flood	651	ft <sup>3</sup> /s	349	1210	37.2	37.2	2.4

Statistic	Value	Unit	PIL	PIU	SE	ASEp	Equiv. Yrs.
10-percent AEP flood	775	ft <sup>3</sup> /s	411	1460	38	38	3.1
4-percent AEP flood	926	ft <sup>3</sup> /s	475	1800	40.1	40.1	3.8
2-percent AEP flood	1040	ft <sup>3</sup> /s	516	2100	42.2	42.2	4.2
1-percent AEP flood	1140	ft <sup>3</sup> /s	545	2390	44.7	44.7	4.4
0.2-percent AEP flood	1390	ft <sup>3</sup> /s	603	3200	51.1	51.1	4.7

*Peak-Flow Statistics Citations*

**Law, G.S., and Tasker G.D., 2003, Flood-Frequency Prediction Methods for Unregulated Streams of Tennessee, 2000: U.S. Geological Survey Water-Resources Investigations Report 03-4176, 79p. (<http://pubs.usgs.gov/wri/wri034176/>)**

➤ **Maximum Probable Flood Statistics**

**Maximum Probable Flood Statistics Parameters [Crippen Bue Region 3]**

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.1	square miles	0.1	10000

**Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 3]**

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	5020	ft <sup>3</sup> /s

*Maximum Probable Flood Statistics Citations*

**Crippen, J.R. and Bue, Conrad D. 1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (<https://pubs.usgs.gov/wsp/1887/report.pdf>)**

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.19.4

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

**TENNESSEE DEPARTMENT OF TRANSPORTATION  
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION**

PROJECT NO.: 38S054-S1-004 ROUTE: S.R. 54  
 COUNTY: HAYWOOD CITY: BROWNSVILLE  
 PROJECT PIN NUMBER: 134884.00  
 PROJECT DESCRIPTION: BRIDGE OVER BRANCH @ L.M. 16.73  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**DIVISION REQUESTING:**

MAINTENANCE  PAVEMENT DESIGN   
 S.T.I.D.  STRUCTURES   
 PROG. DEVELOPMENT & ADM.  SURVEY & ROADWAY DESIGN   
 PUBLIC TRANS. & AERO.  TRAFFIC SIGNAL DESIGN   
 OTHER   
 YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: 2029  
 PROJECTED LETTING DATE: 2029

**TRAFFIC ASSIGNMENT:**

BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
1,680	2029	2,690	296	11	2049	65-35	6	9		

REQUESTED BY: NAME CALEB SMITH DATE 2/15/24  
 DIVISION S.T.I.D.  
 ADDRESS 1000 J. K. POLK BUILDING  
NASHVILLE TN 37243

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 2/22/2024  
 TRANSPORTATION MANAGER 1  
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 2/22/2024  
 TRANSPORTATION MANAGER 2  
 SUITE 1000, JAMES K. POLK BUILDING

**COMMENTS:**

FURNISH THE 2029-2049 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON A 2023 CYCLE COUNT. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE TN-TIMES LINEAR REGRESSION TOOL.

**DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.**

**NOTE:** FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.

SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

(REV. 6/9/21)

**From:** [Wesley Peck](#)  
**To:** [David A. Duncan](#)  
**Subject:** RE: Timber Bridge List - 7-29-2024.xlsx  
**Date:** Friday, August 23, 2024 3:46:06 PM  
**Attachments:** [image001.png](#)

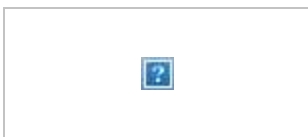
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Dave,

This should be the last of the timber hydraulic recommendations. If I have missed any, please let me know.

- PIN 134884.00: 50 ft single span using 24" box beam. Raise grade 1.5 ft. Appears to be acting as overflow to Nixon Creek. Survey should include both floodplains and structures. Proposed ROW and ETSA to include limits of riprap in channel and on banks.
- PIN 134885.00: 45 ft single span using 24" box beam. Raise grade 2.0 ft. Proposed ETSA and ROW to include channel 20 ft downstream of confluence of ditches on west side, as well as US limits of any riprap in channel.
- PIN 134883.00: 56 ft single span using 27" box beam. Raise grade 1.0 ft. FEMA Zone AE without floodway but potential structures in floodplain upstream so no-rise certification will be required. Survey should include floor elevations for buildings in immediate vicinity of structure. Inspection report photos show exposed utility in upstream channel and another under bridge running between piles. Utility under structure should be relocated.
- PIN 134876.00: 75 ft single span using 36" box beam. Raise grade 1.5 ft. Prop ETSA and ROW should include channel 10 ft up and downstream of existing riprap limits.
- PIN 134878.00: 70' single span using 36" deep box beam. Raise grade 1.5 ft. Include limits of riprap in channel in proposed ROW and ETSA.
- PIN 134879.00: 100 ft single span using type IV eye beam or BT-54. Raise grade 1 ft. Include channel and banks in proposed ROW and ETSA boundary to limits of existing riprap.
- PIN 134882.00: 60 ft single span using 30" Box beam. Maintain existing grade. If grade increase is feasible with RR crossing adjacent, could use type II or III eye beam instead. Prop additional length should be as symmetrical around channel as feasible with adjacent RR crossing. **This channel appears to be actively lowering over time.**

Thanks.



**Wesley Peck, PE, MS** | Manager  
Hydraulic Design Section | Structures Division  
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# Environmental Division

## 0SD2 Environmental Desktop Review Form

### Part 1 – Project Information

<b>PIN</b>	134884.00
<b>Project Number (if available)</b>	
<b>County</b>	Haywood
<b>Route</b>	SR54
<b>Termini</b>	Bridge over Branch (TMA)
<b>Type of Document</b>	
<b>Date ENV DIV Comments are Due</b>	10/17/24 by noon

**Part 2: Provide information identifying known Environmental Resources within the proposed project area using the attached information. If no known resources are identified, each study area should note that none were identified.**

### Air & Noise

#### AIR QUALITY

##### ***Transportation Conformity***

This project is in Haywood County which is in attainment for all regulated criteria pollutants. Therefore, conformity does not apply to this project.

##### ***Mobile Source Air Toxics (MSATs)***

This project qualifies as a categorical exclusion under 23 CFR 771.117 and, therefore, does not require an evaluation of MSATs per FHWA's "Interim Guidance Update on Air Toxic Analysis in NEPA Documents" dated January 2023.

#### NOISE

This project is Type III in accordance with the FHWA noise regulation in 23 CFR 772 and TDOT's noise policy; therefore, a noise study is not needed.

## Cultural Resources

Archaeology: No resources within a 1 mile radius. A survey will be required.

Historic Preservation: There are 3 previously surveyed resource markers (non-extant) within a .25-mi. radius of the bridge to be replaced. Surveys will be required.

## Ecology

Water resources likely within project area. Species records in vicinity of project will likely require surveys and/or time of year restrictions.

## HazMat

No known hazardous materials sites affect the area around this bridge replacement. No additional hazardous material studies are recommended at this time. The asbestos bridge survey has been completed and the following project commitment has been submitted in PPRM. In the event hazardous materials or wastes are encountered within the right-of-way, notification shall be made per TDOT Standard Specifications for Road and Bridge Construction (January 1, 2021) Section 107.08.C. Disposition of hazardous materials or wastes shall be subject to all applicable Federal, State, and local regulations, including the applicable sections of the Federal Resource Conservation and Recovery Act, as amended; the Comprehensive Environmental Response, Compensation, and Liability Act, as amended; and the Tennessee Hazardous Waste Management Act of 1983, as amended. Databases reviewed include Google Earth imagery, EPA National Priorities List, EPA EnviroMapper (Envirofacts), TDEC Registered Underground Storage Tanks Public Data Viewer and Data and Reports, TDEC Division of Water Resources Public Data Viewer and Oil and Gas Wells database, TDEC Division of Remediation Sites Public Data Viewer, TDOT Integrated Bridge Information System, and others, as necessary.

EDHZ001. An Asbestos Containing Material (ACM) survey was completed on Bridge No. 38SR0540005 SR-54 over Branch LM 16.73 (38-SR054-16.73). No asbestos was detected. Please see the report for further details and photographs. No special accommodations for demolition and waste disposal are anticipated for these structures and the material can be deposited in a C&D landfill. Prior to the demolition or rehabilitation of any structure (bridge or building), the contractor is required to submit the National Emission Standards for Hazardous Air Pollutants standard 10-day notice of demolition to the TDEC Division of Air Pollution Control (per TDOT Standard Specifications for Road and Bridge Construction (January 1, 2021) Sections 107.08.D and 202.03).

## NEPA

If the project remains state-funded, a TEER will be produced unless there is a federal nexus.

Based on a preliminary review, there are No Section 6(f) properties within the project area.

Based on the 2022 ACS data, CT 9303.01, BG 1 is a low-income EJ population. CT 9301, BG 1; CT 9303.01, BG 1; and CT 9303.02, BG 2 are minority EJ populations. Coordination with TDOT Civil Rights Division will be required. No delay to schedule is expected.

Consider combining the ETSA boundaries from Figure 1 a and Figure 2a. A single ETSA should be reasonably conservative to minimize the risk of a Reevaluation.

**Comment Resolution: 134884.00, Haywood, SR 54, Bridge over Branch (TMA)**

<b>Comment Stage</b>	<b>Division</b>	<b>Commenter</b>	<b>Date</b>	<b>Comment</b>	<b>Comment Addressed?</b>	<b>Additional Notes</b>
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	The CMGC/HR scenario estimate was left off for the detour option. Was it meant to be left off?	Yes	The project delivery method has not yet been determined. For now, we are defaulting to the design-bid-build approach for all timber bridges.
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	Route should be SR-54. Posted speed is 55mph. You have a design speed of 35mph.	Yes	This will be updated
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	Consider realigning to the south instead of the north. The curve on the layout does not look like it will meet a 55-60 mph design speed. By shifting to the south it will allow design the flexibility to keep the super elevation off the bridge at at LM 16.84.	Yes	With the increase in design speed, the proposed realignment appears likely to impact the bridge at LM 16.84. This report will evaluate two potential solutions: a detour route and an ABC approach. During Stage 1, additional analysis will explore whether a realignment can be achieved that avoids impacting the bridge at LM 16.84.
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	It looks like the realignment in the concept report would have shifted away from the existing Telecom utility which was the only one mentioned in the report. I'm surprised the cost of utilities was almost 5 times higher in the realignment scenario than it was in detour scenario. If realigning to the south then i would suspect the cost would be in the ballpark of what was estimated.	Yes	Utilities division has completed a preliminary cost estimate. Further investigation into affected utilities will be conducted during Stage 1.
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	General Comment for all concept reports. If a 4' shoulder is supposed to carry across the bridge then the 4' shoulder should be dimensioned from bottom of parapet wall. This would affect the out-out dimension.	Yes	This report was initiated prior to the revision of the applicable standards. The budget for the timber bridge program was developed based on the previous standards. There is an increase in shoulder width from existing, and no crash issues exist at this location. However, further refinement of the cross-section design will be addressed in Phase 1 of the project.
Draft Report Review (OSD2)	Alternative delivery	Derek Link	10/4/2024	Was wondering if the detour option was ABC method since most concept reports with two scenarios had at least one listed as ABC.	Yes	The report has been revised to focus solely on the Detour and ABC methods due to the proximity of the bridge east of the timber bridge. However, the realignment option should be further explored in Stage 1.
Draft Report Review (OSD2)	Environmental	Michael Jeu	10/11/2024	Cultural Resources (Archaeology): No resources within a 1 mile radius. A survey will be required.	Yes	Noted in the report.

