## **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.

			Gen	eral Proj	ect Informa	tion						
Project Name	SR 87 - Brid	ge over Bra	nch (TI	MA)								
PIN	134859.00											
Route	Route	NHS (Y/N)	Functional Class				City			County		
Information	Yes	No		Rural Majo	r Collector				L	audero	dale	
Project Information	Begin Lo Mile	og End M	_	AADT <sup>1</sup>	Design Hour Vol. (DHV) <sup>1</sup>	Truck % <sup>1</sup>	Design Speed (MPH)	Post Spe (MP	ed	Base Year	Design Year	
	11.75			860	103	2.00	60	55	5	2029	2049	
Project Description & Standard Drawings Used	The proposed bridge is to be a single span 40' bridge using 24" box beams . The typical section for the approach and bridge will be 2-11' foot travel lanes with 4' shoulders. The out-to-out width based on the above recommendations will be 31'3". The proposed grade and vertical clearance will be raised 1.5'. A detour is recommended. The state route detour is 12 minutes (10.3 miles) the local route detour is 9 minutes (5.3 miles). Superstructure depth is 38" = 24" (beam) + 10" (deck) + 4" (width (in inches) x0.02/2).											
Important Project History or Related Projects	The existing structure is a single span timber bridge, 29' long with an out-to-out width of 27.5'. The existing structure has 2-11' travel lanes with minimal or no shoulders. The listed weight limit on the inspection report is 18 tons 2023. The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 0.73 square miles: Q10 is 617 cfs, Q50 is 820 cfs, and Q100 is 901 cfs.  This project is not expected to utilize federal funding.					Project Details						
Project Purpose/Need	The need to replace this bridge is due to the present condition of the existing bridge: -Built in 1986 -Timber bridges are being phased out and is near the end of it's service life - The bridge is in POOR condition						Proje					
Major Environmental Considerations	Archaeolog Ecology: Sp restrictions Nepa: Ensu	y: Eight Prev ecies recorc	iously Is in th	recorded si le vicinity ma cess drivewa	may be required tes within one r ay require surve ays (residential/	nile, survey eys as well a	as sweeps/t					

PIN: 134859.00

Multi-Modal Considerations	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.	
Major Project Risks	Approx. 0.32 acres of ROW to be acquired under the realignment option . Overhead electric and telecom utilities are present.  This bridge replacement should be coordinated with the replacements at L.M. 5.18, L.M. 6.42, & 20.76 along SR 87.  This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.	

## **Approvals**

PIN: 134859.00

Executed for approval of this Concept Report David Duncan
David Duncan (Oct 24, 2024 10:44 CDT) 10/24/2024 Engineering Concepts and Statewide Programs Director Date The following individuals to execute if a bridge concept report: 10/25/2024 Date 10/28/2024 Regional Project Management Director Date

<sup>&</sup>lt;sup>1</sup> Traffic numbers reflect identified design year

		Action Checklist	
0SD1 Init	iate (	Concept Report and Request Funding	
Complete	NA		Date Completed
✓		Request and Finalize Safety Data	04/05/2024
✓		Request Project Number, PIN, and Task Profile Numbers	01/22/2024
	✓	Coordinate with Long Range Planning	
✓		Request and Finalize Traffic Data	02/21/2024
	1	Request Preliminary Survey Data	
	1	Initiate Division Reviews	
	✓	Schedule Site Review (with appropriate Divisions)	
0EN1 Con	iduct	Environmental Desktop Review	
Complete	NA		Date Completed
✓		Confirm Environmental Desktop Review is Complete	10/11/2024
0MM1 Co	nduc	t Multimodal Review	
Complete	NA		<b>Date Completed</b>
	1	Confirm Multimodal Review is Complete	
	1	Review Multimodal Considerations & Recommendations	
0TO1 Con	duct	Initial Traffic Ops/TSMO Review (include HQ Traffic Ops and Regional Traffic Office)	
Complete	NA		Date Completed
		Confirm Transportation Systems Management & Operations (TSMO) Alignment & Operations Review is Complete	
		Request Concept Report Review	
0ST1 Dev	elop	Structures Recommendations	
Complete	NA		Date Completed
✓		Confirm Recommended Structure Type for Concept Report is Complete	08/12/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	08/12/2024
0SY1 Prov	vide I	Preliminary Survey Data	
Complete	NA		Date Completed
	<b>✓</b>	Confirm Control Ground Survey Set	
	1	Review Preliminary Survey Data	
	1	Determine Time to Complete the Aerial Survey	
0GT1 Con	duct	Preliminary Geotechnical Assessment	
Complete	NA		Date Completed
	1	Confirm Geotechnical Division Review is Complete	
<b>ORD1</b> Pro	vide	Roadway Desktop Review	<u> </u>
Complete	NA		Date Completed
✓		Confirm Roadway Division Review is Complete	09/20/2024
		· · · · · · · · · · · · · · · · · · ·	

PIN: 134859.00

		Action Checklist	
0SD2 Dev	elop	Draft Concept Report	
Complete	NA		Date Complete
	✓	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	
	<b>✓</b>	Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA (if applicable)	
✓		Develop, Compile, and Distribute the Draft Concept Report	09/02/2024
OTO2 Dev	elop	TSMO Scope Items (include HQ Traffic Ops and Regional Traffic Office)	
Complete	NA		Date Complete
	✓	Confirm Signal Warrants Analysis is Complete	
	<b>✓</b>	Confirm Lighting Warrants Analysis is Complete	
	<b>✓</b>	Review and Confirm TSMO & ITS Scope and Budget	
0RW1 Coi	mple	te Preliminary Right-of-Way Estimates	'
Complete	NA		Date Complete
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates	
0UT1 Con	nplet	e Utility Preliminary Estimates	
Complete	NA		Date Complete
✓		Review and Confirm Preliminary Utility Estimate	09/20/2024
		Review and Confirm Preliminary Railroad Cost Estimate	
0SD3 Fina	alize	Concept Report	
Complete	NA		Date Complete
	<b>✓</b>	Compile and Review Initial Risk Assessment	
✓		Finalize Conceptual Layouts	08/31/2024
✓		Develop Environmental Technical Study Area (ETSA)	08/31/2024
✓		Address Comments and Finalize Concept Report	10/21/2024
	1	Address Comments and Finalize Interstate Access Requests (IAR) Document and Memo (if applicable)	
	1	Develop Roadway Safety Audit (RSA) No Plans Document	
✓		Submit the final Concept Report for Review and Signatures (as needed; see 0SD3 for additional information)	10/23/2024
		Finalize Document and Upload All Needed Electronic Files	
		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)	

PIN: 134859.00

#### **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

OSY1 Provide Preliminary Survey Data- survey data not needed for STID BCR document

OGT1 Conduct Preliminary Geotechnical Assessment- geotechnical data not received for STID BCR document

OSD2 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

ORW1 Complete Preliminary Right-of-Way Estimates-ROW estimate calculated in cost estimate

OUT1 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

PIN: 134859.00

Develop Roadway Safety Audit (RSA) No Plans Document- no plans document not needed for STID BCR document

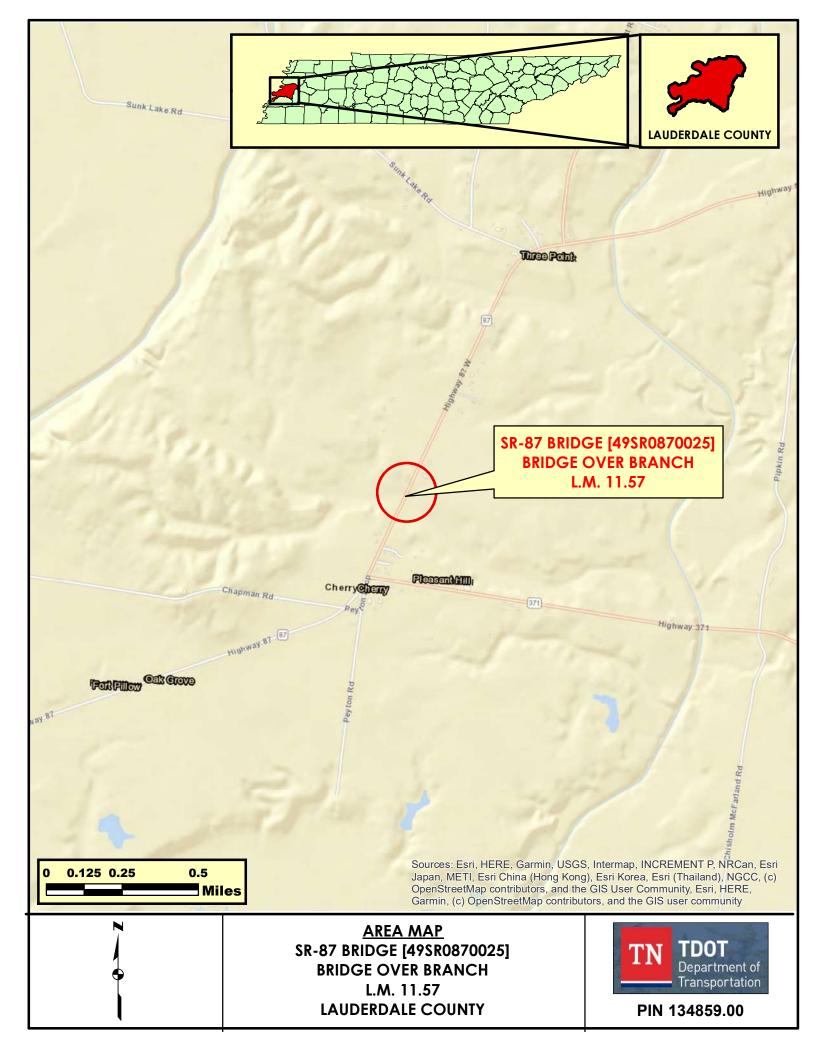
Concept Report Table of Contents/Attachments					
	Included	NA			
One-Page Summary (with project location map)	✓				
Conceptual Layout(s) and Cross Section	✓				
Environmental Technical Study Area (ETSA) Layout	✓				
Concept Cost Estimate (Construction Year Estimate)	✓				
TSMO & ITS Scope and Budget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

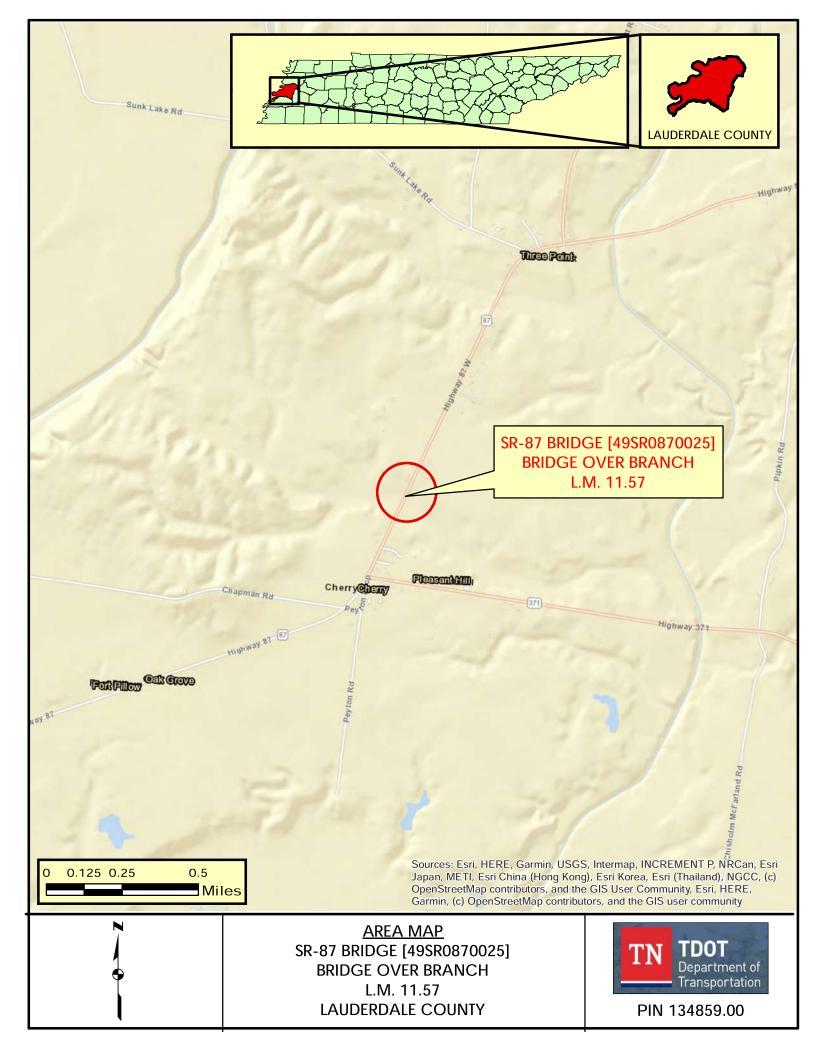
#### **NA Justification**

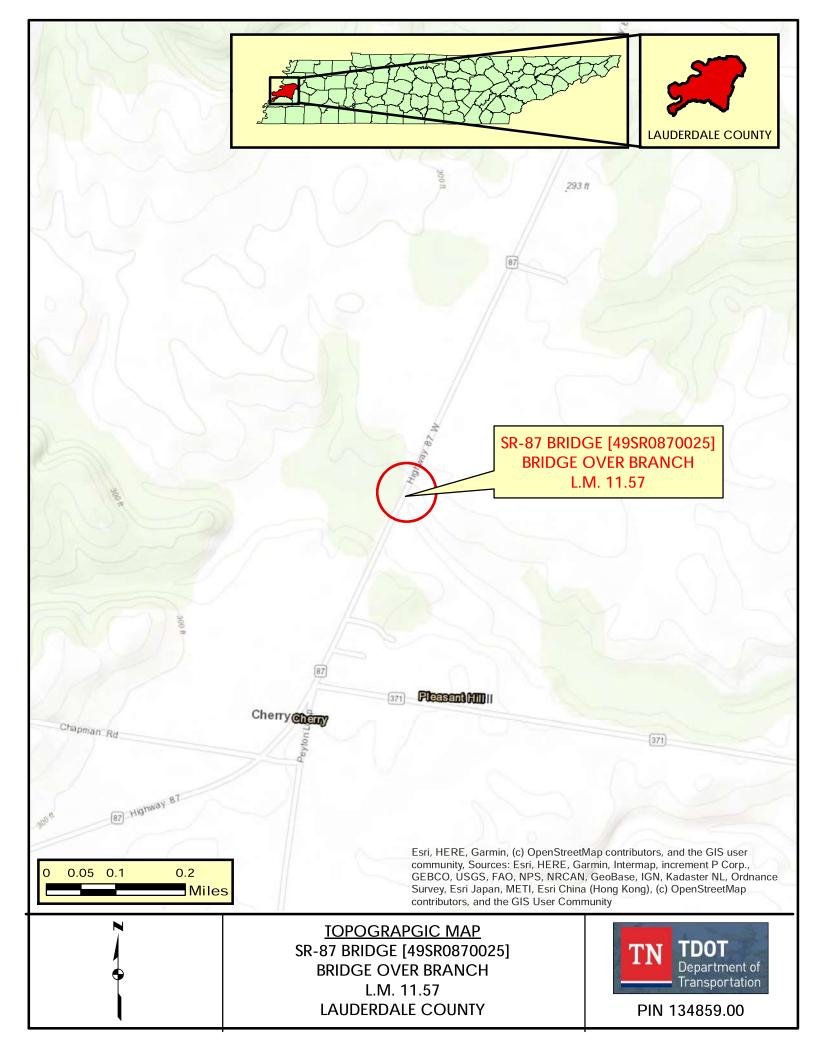
TSMO & ITS Scope and Budget-no ITS within project limits; ROW Form 44-A-form not needed for STID BCR document; Crash Prediction Analysis- 1 crashes occurred within the project limits, crash prediction analysis not needed; Site Visit Attendee List-no site visit was held; Multimodal Considerations & Recommendation-no 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

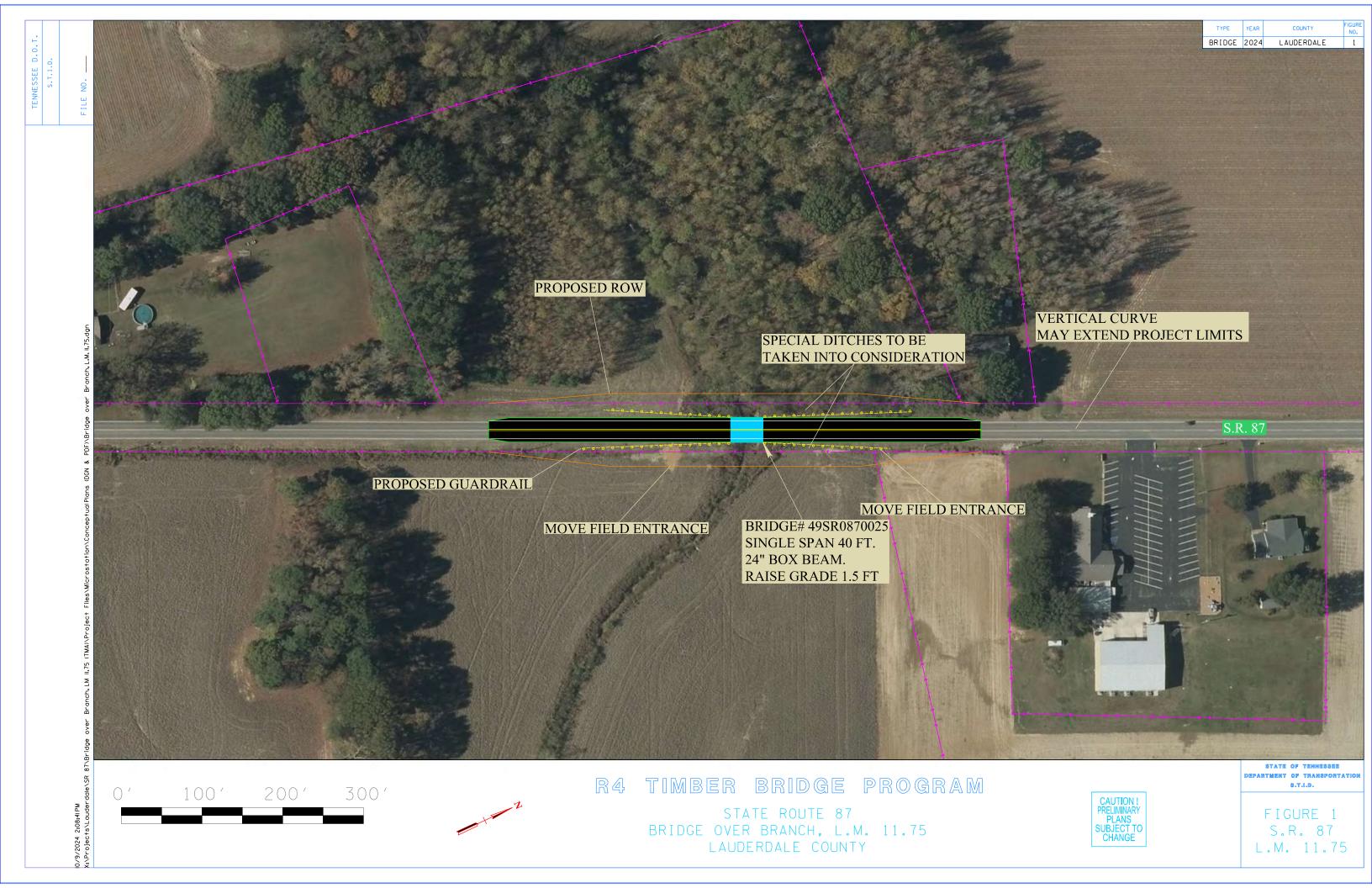
PIN: 134859.00

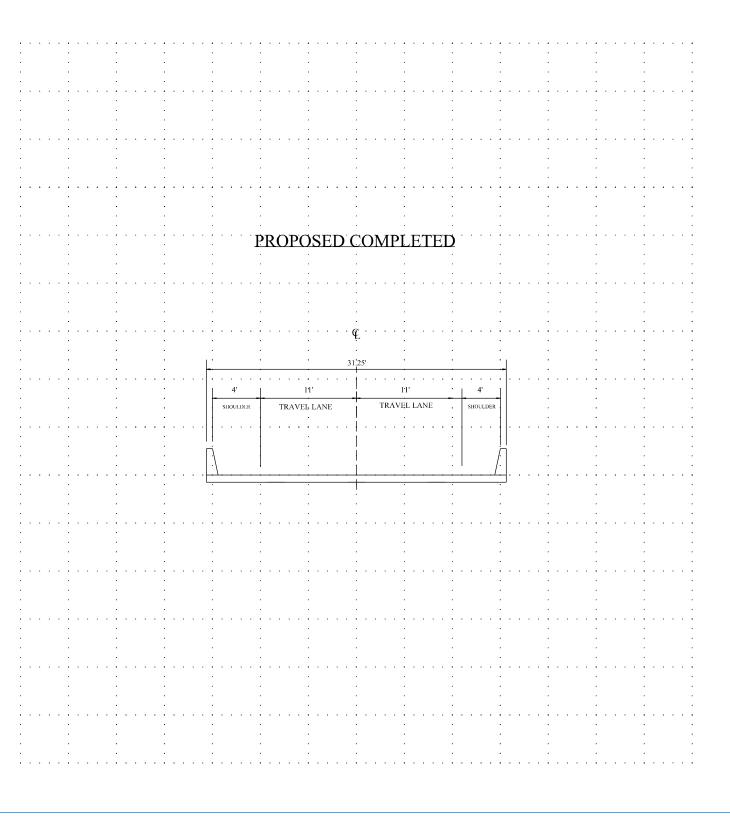
<sup>&</sup>lt;sup>1</sup> External document to STID









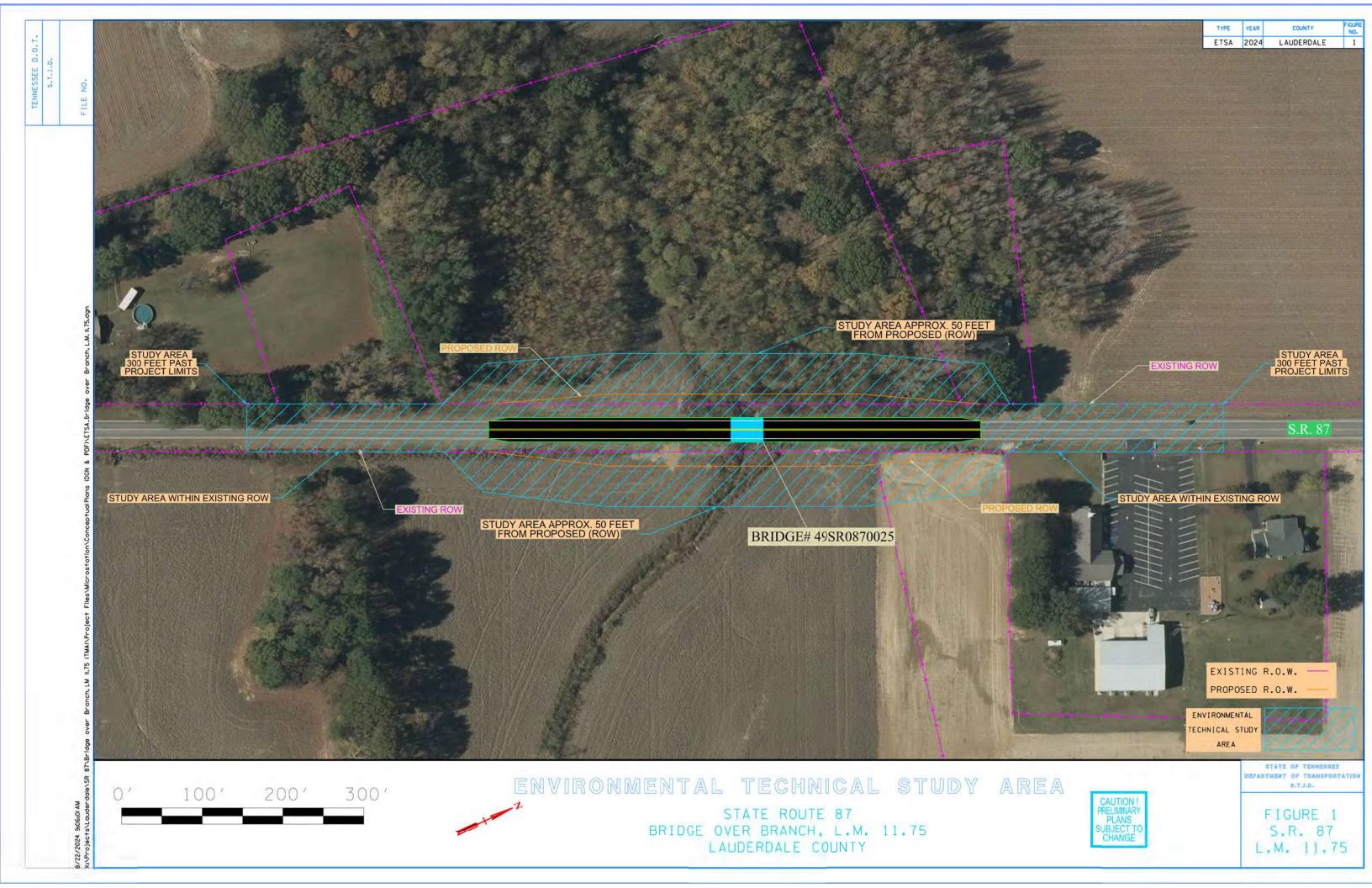




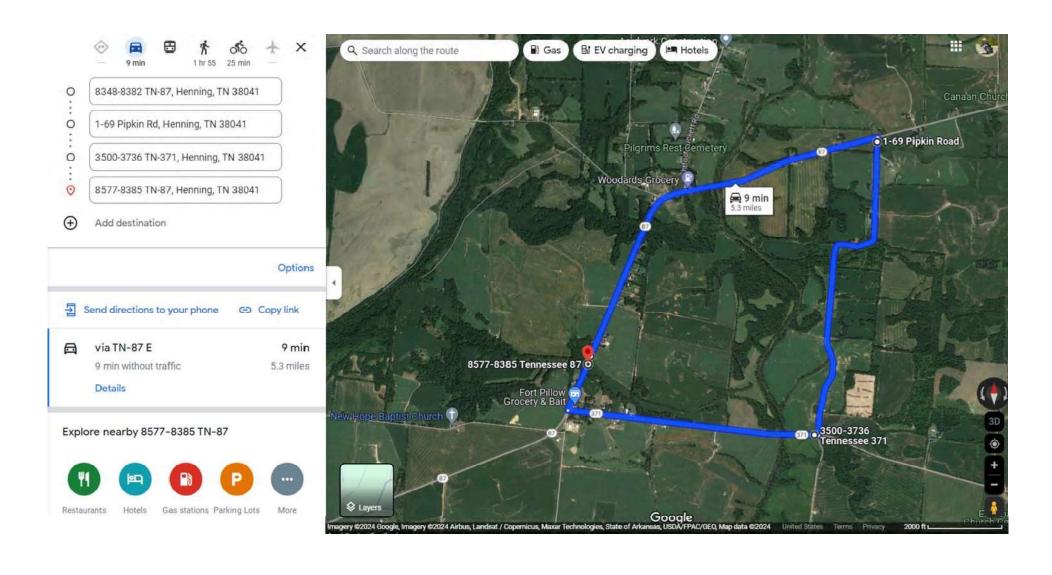
## **CROSS-SECTION DETAIL**

REGION 4 TIMBER BRIDGE PROGRAM
TRANSPORTATION MODERNIZATION ACT (TMA)

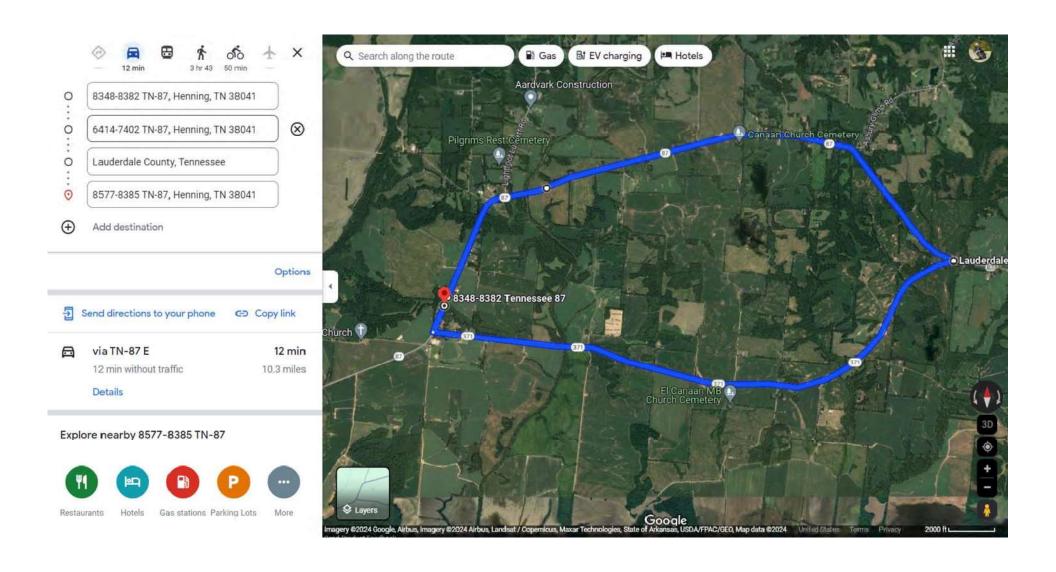
CAUTION!
PRELIMINARY
PLANS
SUBJECT TO
CHANGE



# **DETOUR MAP - LOCAL ROUTE**



# **DETOUR MAP - STATE ROUTE**







Abutment 1 decay



Abutment 1





Right elevation



Span 1 spalling area on approach 2 side left side





Span 1 bottom deck



Span 1 bottom deck





Steel I beam "A" span 1 (Holes in web) & bottom flange



Steel I beam "A" span 1 (hole in web) beginning of span





Steel I beam "A" span 1 (hole in web) beginning of span



Steel I beam "A" span 1 (hole in web)





Steel I beam "A" span 1 (hole in web)



Steel I beam "A" span 1 (hole in web)





Steel I beam "A" span 1



Left side rails not connected span 1





Left side approach 2 bridge rail collision damage



Left side board missing span 1





Span 1 top deck up to 1/4" cracks



View across the deck Span 1





Opposite direction of route and weight posting



Approach 2 asphalt spalling





Approach 2



Left side span 1 wheel guard broken and missing





Rtside wheel guard broken and missing span 1



Bridge number





Weight limit sign 10/18 Tons approach 1



Direction of route

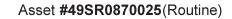




Left elevation



Abutment 1







Abutment 2

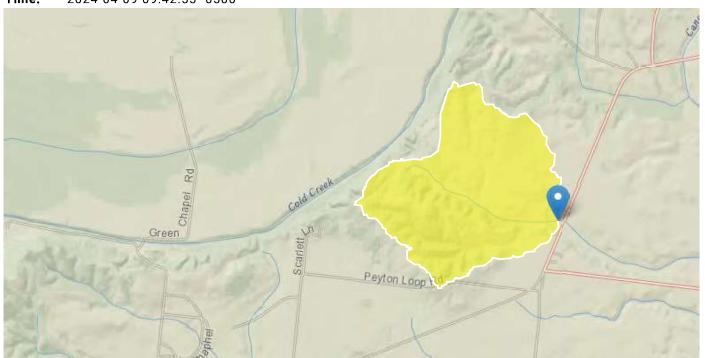
# Lauderdale Co SR087 - Bridge over Branch (LM 11.75)

Region ID: TN

Workspace ID: TN20240409144230825000

Clicked Point (Latitude, Longitude): 35.68085, -89.70740

Time: 2024-04-09 09:42:55 -0500



#### Collapse All

## **▶** Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CONTDA	Area that contributes flow to a point on a stream	0.73	square miles
DRNAREA	Area that drains to a point on a stream	0.73	square miles

## ➤ Peak-Flow Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	0.73	square miles	0.76	2308

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

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
50-percent AEP flood	369	ft^3/s
20-percent AEP flood	521	ft^3/s
10-percent AEP flood	617	ft^3/s
4-percent AEP flood	735	ft^3/s
2-percent AEP flood	820	ft^3/s
1-percent AEP flood	901	ft^3/s
0.2-percent AEP flood	1090	ft^3/s

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	0.73	square miles	0.1	10000

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

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	3590	ft^3/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)

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## TENNESSEE DEPARTMENT OF TRANSPORTATION STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT	NO.: 4	9S087-S1-006				ROUTE:	S.R. 87					
COUNTY:		AUDERDAL				CITY:						
		IBER: <u>134</u>										
PROJECT	DESCRIE	PTION: BI	RIDGE OV	ER B	RANCH (	@ L.M. 11.75						
DIVISIO	N REQ	UESTING	<u>:</u> :									
			_	_		PAVEMEN	T DESI	GN				
MAINTE	NANCE		Ĺ	╛		STRUCTU						
S.T.I.D.				₫		SURVEY &			_			
		MENT & A	.DM.	╛		TRAFFIC S	SIGNAL	DESIGN	√ <u></u>	╛		
PUBLIC 7						OTHER _						
		ROGRAMME		ONST	RUCTION	N: <u>2029</u>				_		
PROJECTI	ED LETT	ING DATE:	2029							<del>_</del>		
TRAFFI	C ASSI	GNMENT	•									
			<u> </u>									
							l	SIGN		SIGN		
DAGEA	T A D		DEG	IONIX	T A D		l	DWAY		AVERAGE		
BASE Y	1	AADT		IGN Y		DID DICT		UCKS		DAILY LOADS		
780	YEAR 2029	860	DHV 103	12	YEAR 2049	DIR.DIST. 65-35	2	AADT 3	FLEX	RIGID		
/80	2029	800	103	12	2049	03-33		3				
REQUEST	FD RV	NAME	CALE	R SMI	ГН			DATE	2/15/24			
ILLQCL51	LD D1.	DIVISION			111				2/13/24	_		
		ADDRESS			LK BUIL	DING						
					TN 3724							
					2 /		<i>/</i> .	<u></u>				
REVIEWED BY: RANDY BOGUSKIE			andy	_Bogusk	rie	DATE	2/21/202	<u>4</u>				
		TRANSPORT		ANAG	ERI //	U						
		SUITE 1000,	JAMES K.	POLK	BUILDING	G						
APPROVE	D BV	TONY ARMS	STRONG		TANI	Domatae	· 11.0-	DAT	E <u>2/21/202</u>	) <i>A</i>		
			TATION M	ANAG	FR 2	Armstro	ny	DA1	L <u>2/2//202</u>	<u>.4                                    </u>		
		SUITE 1000,				G						
		- ,										
<u>COMMI</u>												
FUR	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.



## **Environmental Division**

## **OSD2 Environmental Desktop Review Form**

Part 1 – Project Information				
PIN	134859.00			
Project Number (if available)				
County	Lauderdale			
Route	SR87			
Termini	Bridge over Branch (TMA)			
Type of Document				
Date ENV DIV Comments are Due	10.10.24 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 Lauderdale 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**

**Historic Preservation**: The bridge does not meet the age required for survey and evaluation; however, resources within the project's study area are older than 50 years. Additional studies may be required.

**Archaeology**: Eight previously recorded sites within one mile, survey required.

## **Ecology**

Water resources are present in the project area. Species records in the vicinity may require surveys as well as sweeps / 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 EDHZ001 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. 49SR0870025 SR-87 over Branch LM 11.79 (49-SR087-11.75). 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

Please ensure that existing access driveways (Residential/Church) are not hindered from the project phases during construction.