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

Project Name	SR 194 – Bridge over Black Ankle Creek								
PIN	134833.00								
Route Information	**Route**	**NHS (Y/N)**	**Functional Class**		**City**		**County**		
	SR194	No	Urban Major Collector		Oakland		Fayette		
Project Information	**Begin Log Mile**	**End Log Mile**	**AADT[1]**	**Design Hour Vol. (DHV)[1]**	**Truck %[1]**	**Design Speed (MPH)**	**Posted Speed (MPH)**	**Base Year**	**Design Year**
	16.42		14,720	1,619	1.00	45	40	2029	2049
Project Description & Standard Drawings Used	Proposed bridge: 1 span concrete bridge 50' long using 24" box beams. Typical section: 2-11' foot travel lanes with 6' shoulders (Design Exception Required). Out-to-out: 35'3". The grade will remain the same. The road will either be realigned to the east or the bridge will remain on existing alignment as it is a strong candidate to use the ABC method and the road will be detoured. This will be determined at a later time during the design phase. State route detour is 34 minutes (26.6 miles); local route detour is 9 minutes (6.1 miles). Superstructure depth is 37.6"= 10" (deck)+ 24" (beam)+ 3.6" (width (in inches) x0.02/2). RD11-TS-2								Project Details
Important Project History or Related Projects	Existing structure, built in 2011, 1 span timber bridge, 29' long, out-to-out width of 35'9". The existing structure has 2-11' travel lanes with 6' shoulders. The posted weight limit is 40 tons (6/29/2022). The discharges for the drainage basin (StreamStats Version 4.19.4) for drainage area of 1.55 square miles: Q10 is 937 cfs, Q50 is 1260 cfs, and Q100 is 1390 cfs. This project is NOT expected to utilize federal funding.								
Project Purpose/Need	The need to replace this bridge is due to the present condition of the existing bridge: -Timber bridges are being phased out -The bridge is in FAIR condition								
Major Environmental Considerations	Fayette County in in attainment for all regulated criteria pollutants. An evaluation of MSATs is not required. A noise study is not needed. An archaeological survey will be required. There are no previously identified historic resources in the project area. No known hazmat materials. An asbestos survey was conducted and no asbestos was detected on the bridge. Mitigation will not be required unless wetlands are identified in the Environmental Boundaries Report. Scour repair, bank stabilization, and/or channel reconstruction may be required. Bank erosion is present and construction easement may be required.								

Multi-Modal Considerations	Multimodal accommodations may be considered during the design phase due to the urban nature of this bridge. Any such considerations should be coordinated with the multimodal team.	
Major Project Risks	Approx. ROW to be acquired: 1.33 acres (realign), 0.54 acres (ABC) . Underground power, gas, and water and overhead electric/communication are present. Potential for suburban expansion in the area due to proximity to Memphis Urban Boundary and Blue Oval City. This document is covered by 23 USC § 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 407.	

[1] Traffic numbers reflect identified design year

Approvals

Executed for approval of this Concept Report

James D. Kelley

Project Management Division Director — Aug 21, 2024 — Date

The following individuals to execute if a bridge concept report:

Ted A Kniazyaz

Structures Director — Aug 19, 2024 — Date

Brandon Akins (Aug 20, 2024 11:19 CDT)

Regional Project Management Division Director — Aug 20, 2024 — Date

Action Checklist			
0SD1 Initiate Concept Report and Request Funding			
Complete	**NA**		**Date Completed**
✓		Request and Finalize Safety Data	04/03/2024
✓		Request Project Number, PIN, and Task Profile Numbers	01/10/2024
	✓	Coordinate with Long Range Planning	
✓		Request and Finalize Traffic Data	02/20/2024
	✓	Request Preliminary Survey Data	
✓		Initiate Division Reviews	04/15/2024
	✓	Schedule Site Review (with appropriate Divisions)	
0EN1 Conduct Environmental Desktop Review			
Complete	**NA**		**Date Completed**
✓		Confirm Environmental Desktop Review is Complete	07/31/2024
0MM1 Conduct Multimodal Review			
Complete	**NA**		**Date Completed**
	✓	Confirm Multimodal Review is Complete	
	✓	Review Multimodal Considerations & Recommendations	
0TO1 Conduct 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	07/31/2024
✓		Request Concept Report Review	07/01/2024
0ST1 Develop Structures Recommendations			
Complete	**NA**		**Date Completed**
✓		Confirm Recommended Structure Type for Concept Report is Complete	03/25/2024
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	03/25/2024
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	07/31/2024

Action Checklist			
0SD2 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	04/15/2024
0TO2 Develop TSMO Scope Items *(include HQ Traffic Ops and Regional Traffic Office)*			
Complete	**NA**		**Date Completed**
	✓	Confirm Signal Warrants Analysis is Complete	
	✓	Confirm Lighting Warrants Analysis is Complete	
	✓	Review and Confirm TSMO & ITS Scope and Budget	
0RW1 Complete Preliminary Right-of-Way Estimates			
Complete	**NA**		**Date Completed**
	✓	Review and Confirm Preliminary Right-of-Way Cost Estimates	
0UT1 Complete Utility Preliminary Estimates			
Complete	**NA**		**Date Completed**
	✓	Review and Confirm Preliminary Utility Estimate	
	✓	Review and Confirm Preliminary Railroad Cost Estimate	
0SD3 Finalize Concept Report			
Complete	**NA**		**Date Completed**
	✓	Compile and Review Initial Risk Assessment	
✓		Finalize Conceptual Layouts	07/31/2024
✓		Develop Environmental Technical Study Area (ETSA)	04/10/2024
✓		Address Comments and Finalize Concept Report	07/31/2024
	✓	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 0SD3 for additional information)	
		Finalize Document and Upload All Needed Electronic Files	
		Notify the Project Management Director or Assigned Project Manager to Set Up Project (1PM1)	

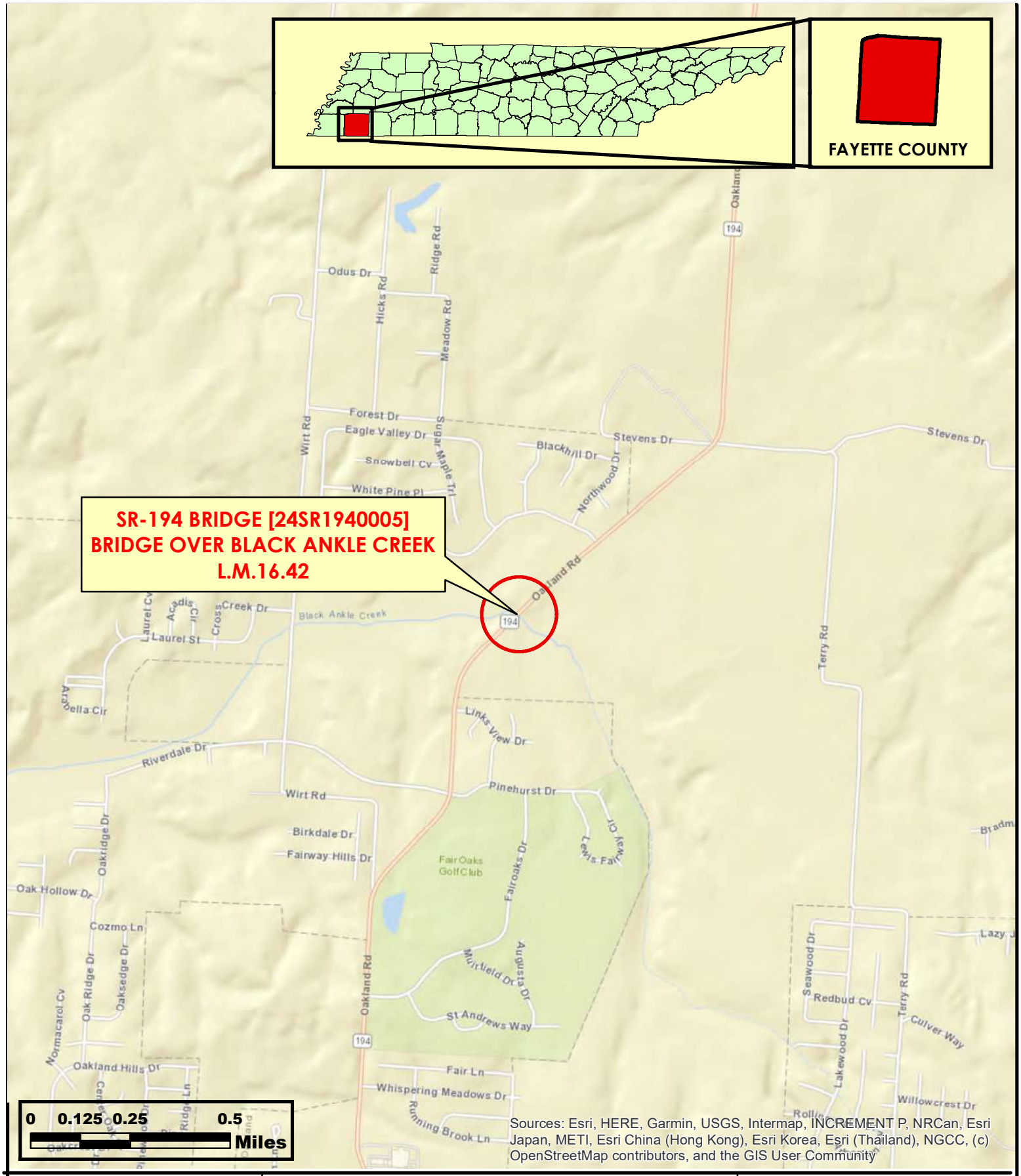
NA Justification
Coordinate with Long Range Planning-Long Range Planning coordination not needed for STID BCR document Request Preliminary Survey Data- survey data not needed for STID BCR document Schedule a site visit-site visit not required 0MM1 Conduct Multimodal Review- multimodal coordination not 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[1]		✓
ROW Form 44-A[1]		✓
Crash Packet[1]	✓	
Crash Prediction Analysis[1]		✓
Site Visit Attendee List		✓
Environmental Desktop Review Form[1]		
Multimodal Considerations & Recommendations[1]		✓
Existing Structure Summary[1]	✓	
Email or memo containing Structure Type Recommendations[1]	✓	
Email or memo containing Hydraulic Recommendations[1]	✓	
Hydraulic Data	✓	
Intersection and Interchange Evaluation (IIE) Analysis and Summary Form		✓
Traffic Analysis Summary/Tables	✓	
Forecasted Traffic Sheets[1]	✓	
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output)[1]		✓
Signal Warrant[1]		✓
Lighting Warrant[1]		✓
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[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- 3 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- IIE analysis not needed for STID BCR
Traffic Modeling (e.g., Synchro, VISSIM, Highway Capacity Software (HCS) Output)- traffic modeling not needed for STID BCR
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

[1] External document to STID

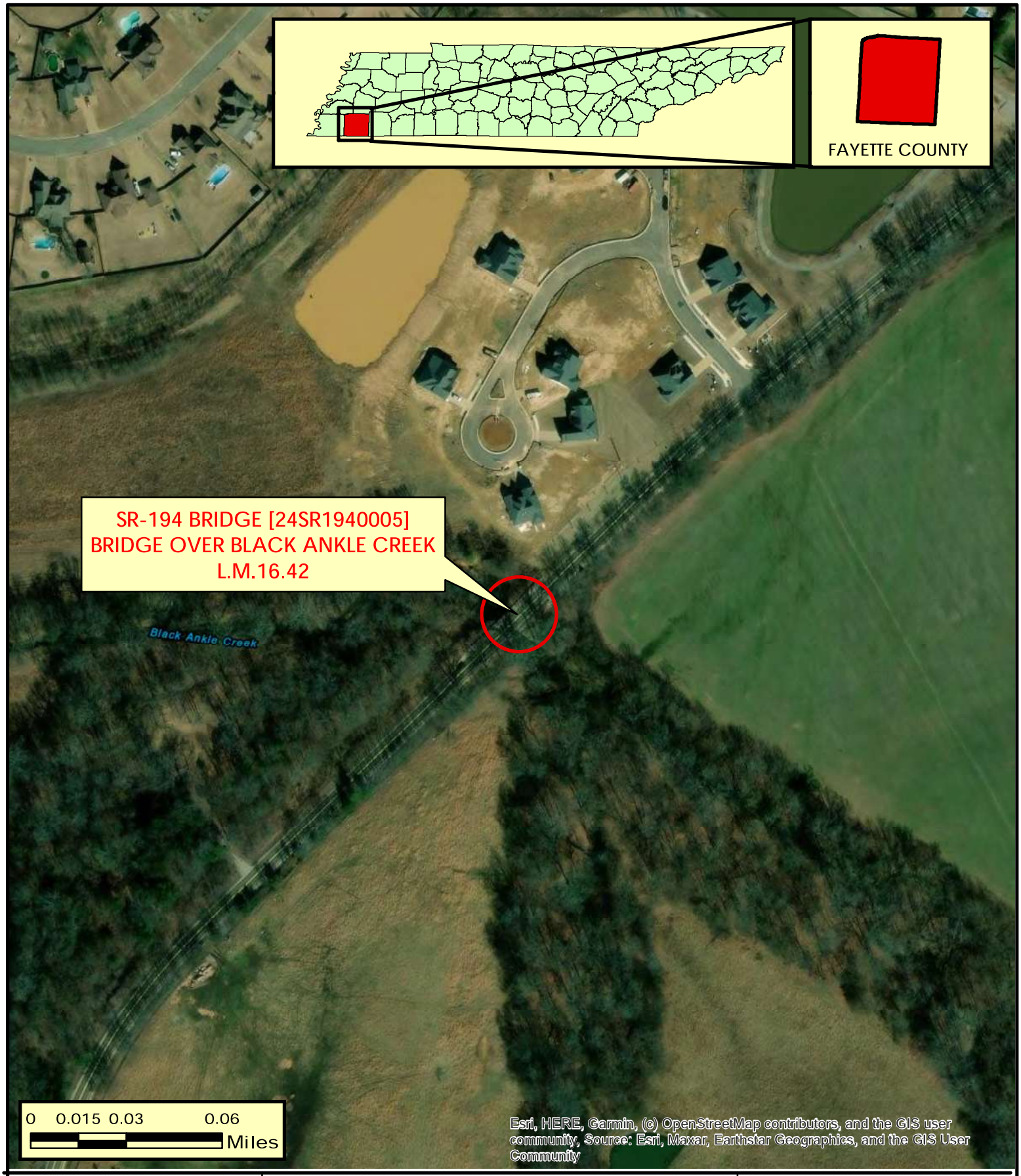


N

AREA MAP
SR-194 BRIDGE [24SR1940005]
BRIDGE OVER BLACK ANKLE CREEK
L.M.16.42
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134833.00



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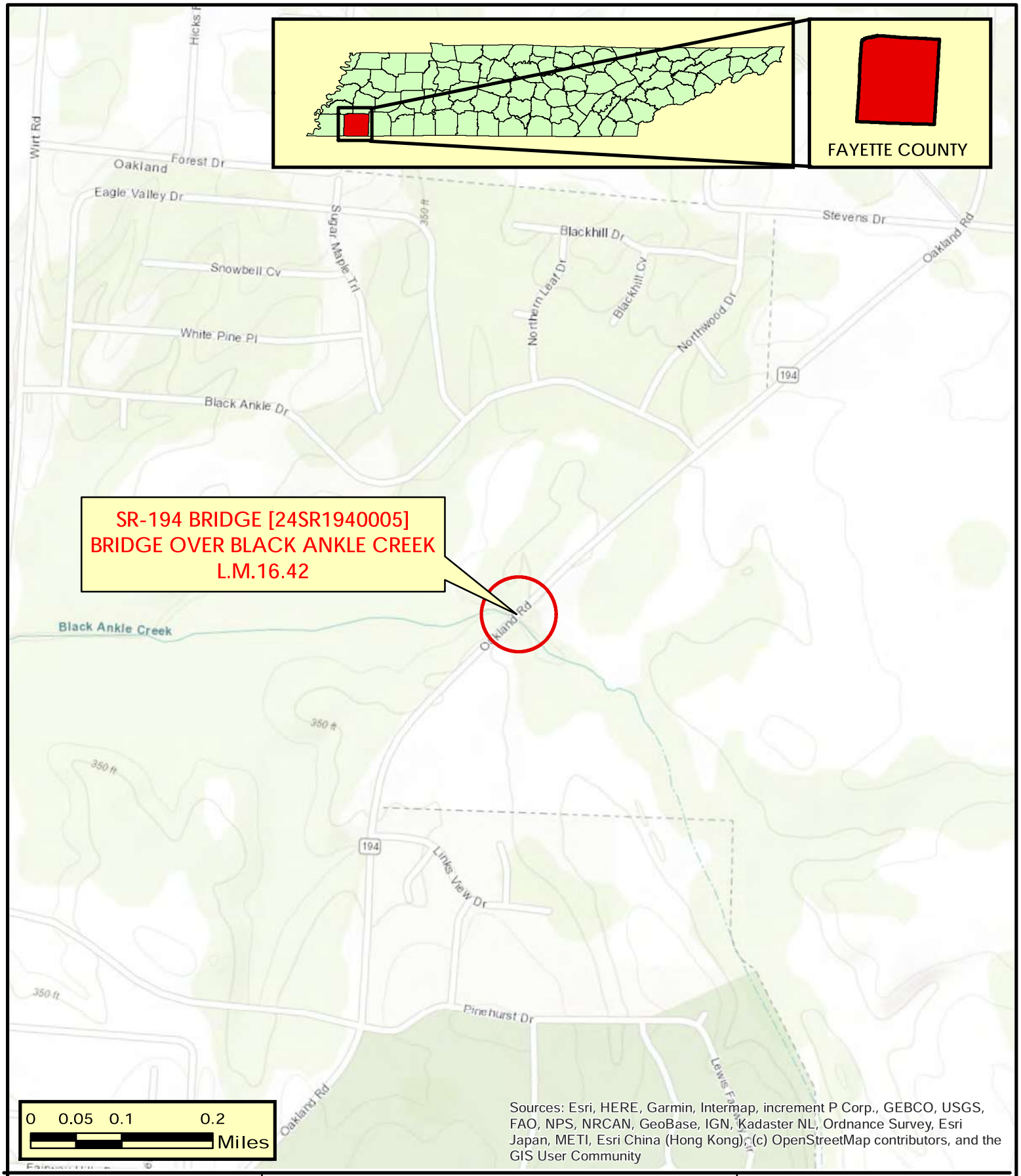
LOCATION MAP
SR-194 BRIDGE [24SR1940005]
BRIDGE OVER BLACK ANKLE CREEK
L.M.16.42
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134833.00



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TOPOGRAPHIC MAP
SR-194 BRIDGE [24SR1940005]
BRIDGE OVER BLACK ANKLE CREEK
L.M.16.42
FAYETTE COUNTY

TN TDOT Department of Transportation

PIN 134833.00

TENNESSEE D.O.T.

S.T.I.D.

FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	FAYETTE	1

BRIDGE# 24SR1940005
1-50' SPAN CONCRETE BOX BEAM BRIDGE
2-11' LANES W/ 6' SHOULDERS

TIE INTO EXISTING
HIGHLAND PARK DR.

HIGHLAND PARK DR.

SCARIFY

EXISTING ROW

194

PROPOSED ROW

BLACK ANKLE CREEK

PROPOSED GUARDRAIL

REALIGN OPTION

0′ 150′ 300′ 450′

N

R4 TIMBER BRIDGE PROGRAM

STATE ROUTE 194
BRIDGE OVER BLACK ANKLE CREEK, L.M. 16.42
FAYETTE COUNTY

CAUTION !
PRELIMINARY
PLANS
SUBJECT TO
CHANGE

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

FIGURE 1
S.R. 194
L.M. 16.42

7/3/2024 8:5:57 AM
X:\Projects\Fayette\SR-194\Bridge over Black Ankle Creek (TMA)\Project Files\Microstation\ConceptualPlans (DGN & PDF)\Bridge over Black Ankle Creek-Realign.dgn

TENNESSEE D.O.T.
S.T.I.D.
FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
BRIDGE	2024	FAYETTE	2

EXISTING ROW

BRIDGE# 24SR1940005
1-50' SPAN CONCRETE BOX BEAM BRIDGE
2-11' LANES W/ 6' SHOULDERS

HIGHLAND PARK DR.

194

PROPOSED ROW

<<<BLACK ANKLE CREEK

PROPOSED GUARDRAIL

ABC METHOD

0′ 100′ 200′ 300′

N

R4 TIMBER BRIDGE PROGRAM

STATE ROUTE 194
BRIDGE OVER BLACK ANKLE CREEK, L.M. 16.42
FAYETTE COUNTY

CAUTION !
PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 2
S.R. 194
L.M. 16.42

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7/31/2024 7:59:54 AM

TENNESSEE D.O.T.

S.T.I.D.

FILE NO. ——

TYPE	YEAR	COUNTY	FIGURE NO.
ETSA	2024	FAYETTE	2a

STUDY AREA APPROX. 50 FEET FROM PROPOSED (ROW)

STUDY AREA APPROX. 50 FEET FROM EXISTING (ROW)

STUDY AREA 300 FEET PAST PROJECT LIMITS

194

EXISTING ROW

PROPOSED ROW

STUDY AREA APPROX. 50 FEET FROM EXISTING (ROW)

STUDY AREA APPROX. 50 FEET FROM PROPOSED (ROW)

STUDY AREA 300 FEET PAST PROJECT LIMITS

<<BLACK ANKLE CREEK

EXISTING R.O.W.

PROPOSED R.O.W.

ENVIRONMENTAL TECHNICAL STUDY AREA

ABC METHOD

0' 100' 200' 300'

ENVIRONMENTAL TECHNICAL STUDY AREA

STATE ROUTE 194
BRIDGE OVER BLACK ANKLE CREEK, L.M. 16.42
FAYETTE COUNTY

CAUTION ! PRELIMINARY PLANS SUBJECT TO CHANGE

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

FIGURE 2a
S.R. 194
L.M. 16.42

7/31/2024 8:29:8 AM
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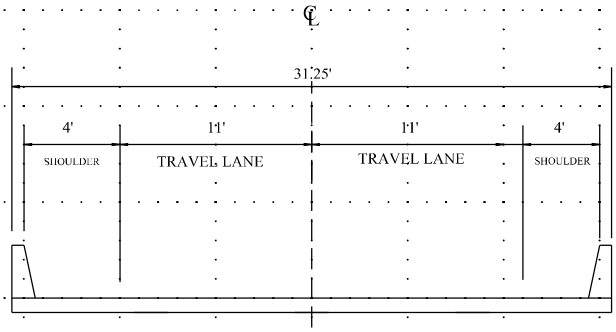
PROPOSED COMPLETED



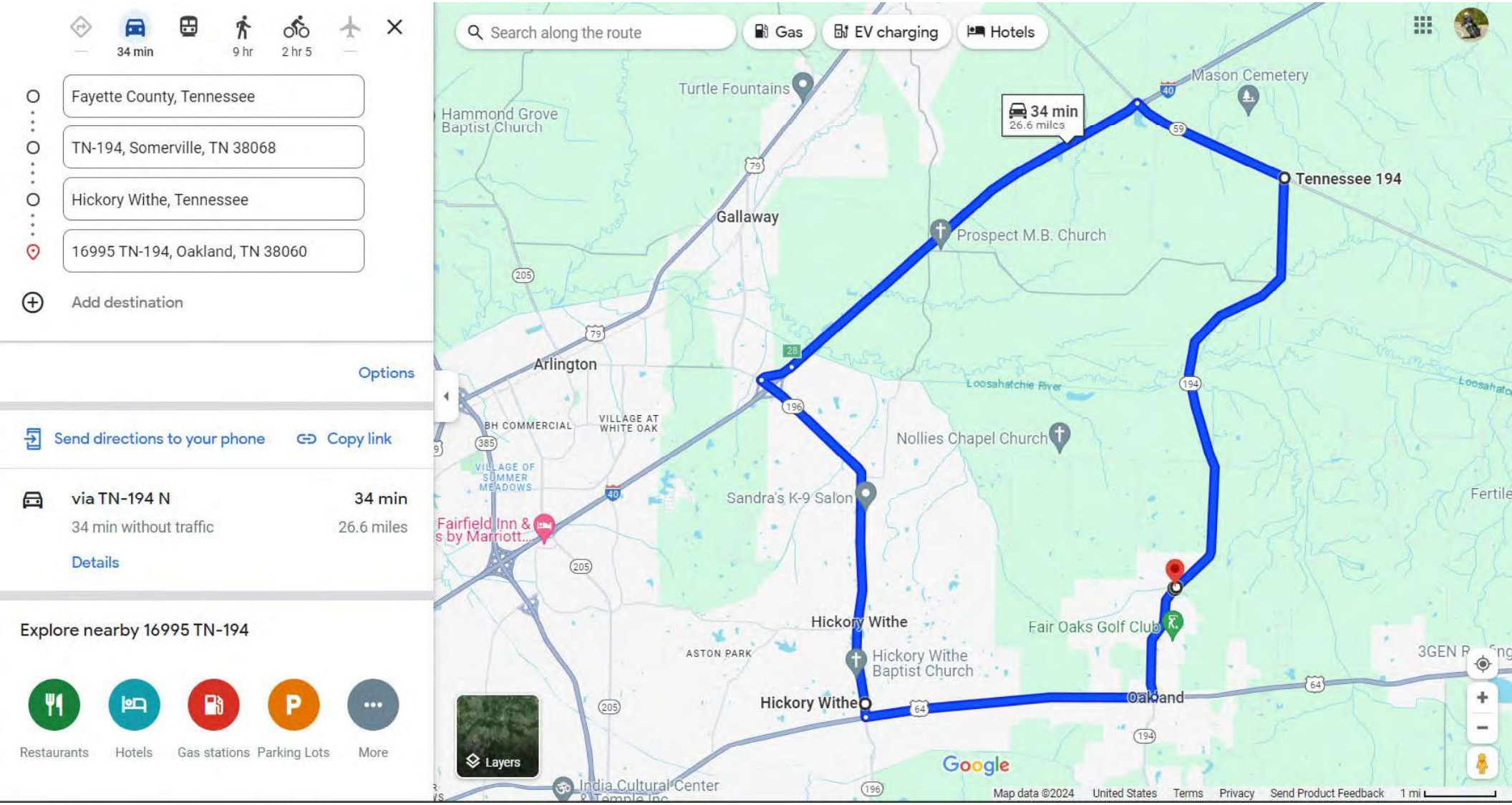
0' 5' 10' 15'

CROSS-SECTION DETAIL

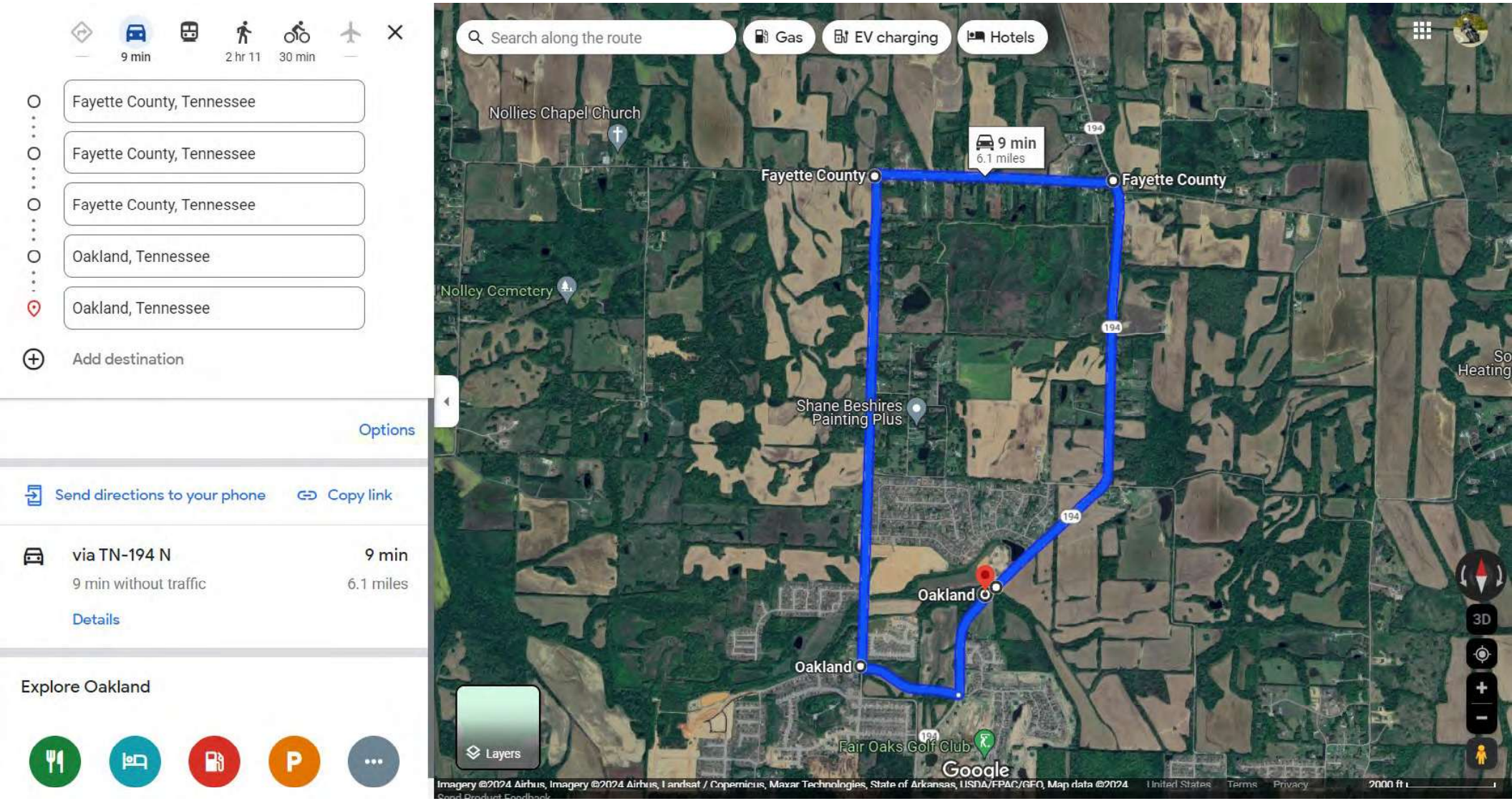
REGION 4 TIMBER BRIDGE PROGRAM
TRANSPORTATION MODERNIZATION ACT (TMA)

CAUTION !
PRELIMINARY
PLANS
SUBJECT TO
CHANGE

DETOUR MAP - STATE ROUTE



DETOUR MAP - LOCAL ROUTE



CRASH SUMMARY REPORT

Fayette SR193 - Bridge over Black Ankle Creek

Created on April 3, 2024
Created by JOSHUA CLOUD
Requested by Michael Cloud
Data extents: March 28, 2021 to March 28, 2024

Applied Filters

County = Fayette | Shape: Polygon

Total Crashes	3	Fatal Crashes	0

Summary		Crash
Total Crashes	3	100.00%
Truck/Bus Involved	1	33.33%
+ 4 more	0	0%

Type of Crash		Crash
(O) Property-Damage Only	2	66.67%
(C) Possible Injury	1	33.33%
+ 3 more	0	0%

Date of Crash (Year)		Crash
2023	1	33.33%
2022	1	33.33%
2021	1	33.33%
+ 8 more	0	0%

Manner of First Collision		Crash
No Collision W/ Vehicle	2	66.67%
Sideswipe, Opp Dir	1	33.33%
+ 8 more	0	0%

First Harmful Event		Crash
Ditch	1	33.33%
Standing Tree	1	33.33%
Vehicle in Transport	1	33.33%
+ 62 more	0	0%

Crash Location		Crash
At an Intersection	2	66.67%
Along Roadway	1	33.33%
+ 5 more	0	0%

Light Conditions		Crash
Dark-Not Lighted	2	66.67%
Daylight	1	33.33%
+ 6 more	0	0%

Weather Conditions		Crash
Clear	2	66.67%
Rain	1	33.33%
+ 10 more	0	0%

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

BRIDGE NO.

APPROACH 1 WEIGHT LIMIT

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

LOOKING AHEAD ON ROUTE

RIGHT SIDE UPSTREAM

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

VIEW ACROSS TOP OF DECK

LEFT SIDE DOWNSTREAM

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

APPROACH 2 WEIGHT LIMIT

LOOKING BACK ON ROUTE

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

RIGHT ELEVATION

ABUTMENT 2

Bridge Loc. No: 24-SR194-1642 Date: 06-29-2022

BOTTOM DECK

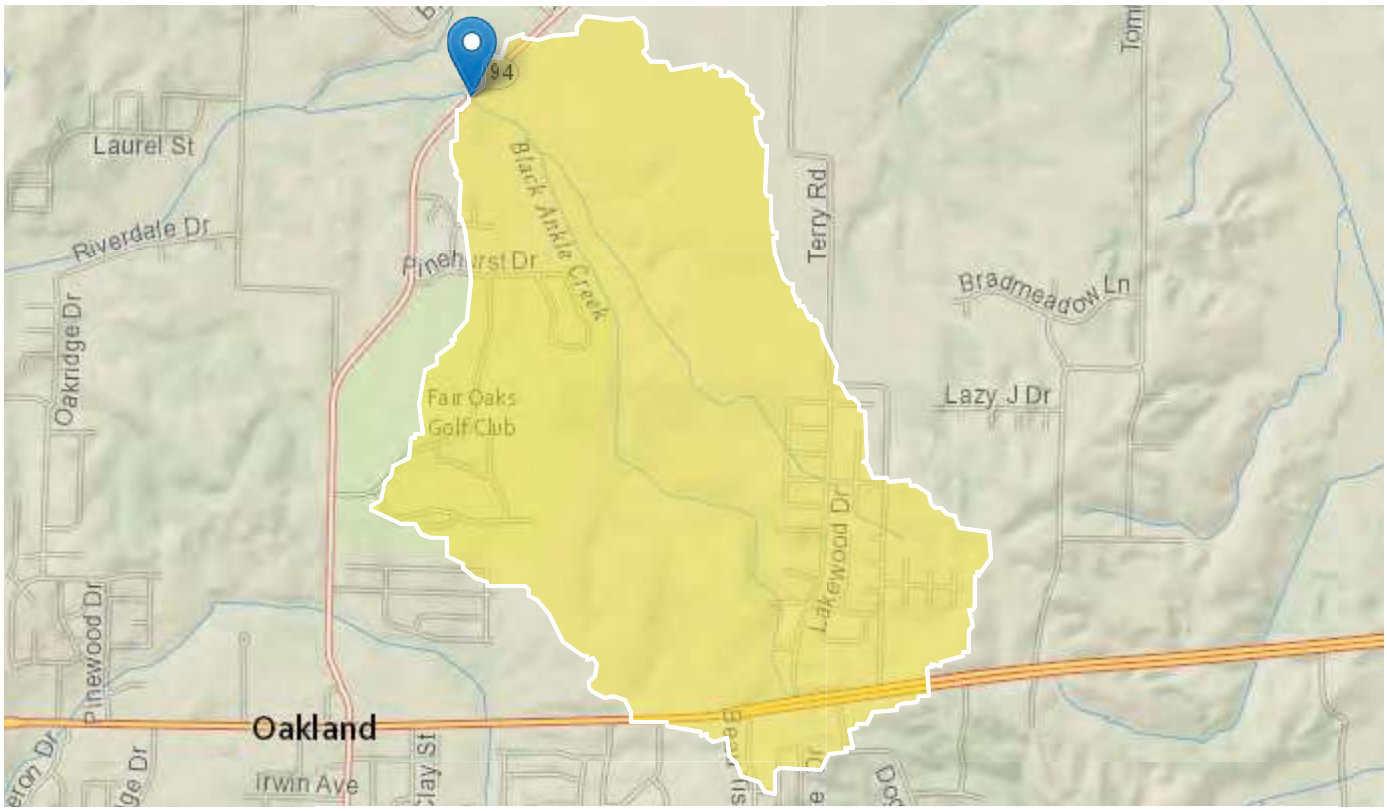
LEFT ELEVATION

Bridge Loc. No: 24-SR194-1642 **Date: 06-29-2022**

ABUTMENT 1

StreamStats Report

Region ID: TN
Workspace ID: TN20240408163931538000
Clicked Point (Latitude, Longitude): 35.25100, -89.50995
Time: 2024-04-08 11:39:53 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CLIMFAC2YR	Two-year climate factor from Lichy and Karlinger (1990)	2.415	dimensionless
CONTDA	Area that contributes flow to a point on a stream	1.55	square miles
DRNAREA	Area that drains to a point on a stream	1.55	square miles
PERMGTE2IN	Percent of area underlain by soils with permeability greater than or equal to 2 inches per hour	37.002	percent

Parameter Code	Parameter Description	Value	Unit
RECESS	Number of days required for streamflow to recede one order of magnitude when hydrograph is plotted on logarithmic scale	58	days per log cycle
SOILPERM	Average Soil Permeability	1.07	inches per hour

Peak-Flow Statistics

Peak-Flow Statistics Parameters [DAOnly Area 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	1.55	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	549	ft^3/s	289	1040	38.7	38.7	1.8
20-percent AEP flood	785	ft^3/s	423	1460	37.2	37.2	2.4
10-percent AEP flood	937	ft^3/s	499	1760	38	38	3.1
4-percent AEP flood	1120	ft^3/s	577	2170	40.1	40.1	3.8
2-percent AEP flood	1260	ft^3/s	628	2530	42.2	42.2	4.2
1-percent AEP flood	1390	ft^3/s	667	2900	44.7	44.7	4.4
0.2-percent AEP flood	1690	ft^3/s	738	3870	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/)

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.55	square miles	2	2405
RECESS	Recession Index	58	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

Low-Flow Statistics Disclaimers [Low Flow West Region 2009 5159]

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

Low-Flow Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
7 Day 10 Year Low Flow	0.00976	ft^3/s
30 Day 5 Year Low Flow	0.0238	ft^3/s

Low-Flow Statistics Citations

Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159/)

Flow-Duration Statistics

Flow-Duration Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.55	square miles	2	2405
RECESS	Recession Index	58	days per log cycle	32	350

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.415	dimensionless	2.307	2.455
SOILPERM	Average Soil Permeability	1.07	inches per hour	0.97	2.44

Flow-Duration Statistics Disclaimers [Low Flow West Region 2009 5159]

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

Flow-Duration Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
99.5 Percent Duration	0.009	ft^3/s
99 Percent Duration	0.0132	ft^3/s
98 Percent Duration	0.0178	ft^3/s
95 Percent Duration	0.0257	ft^3/s
90 Percent Duration	0.0353	ft^3/s
80 Percent Duration	0.0536	ft^3/s
70 Percent Duration	0.0841	ft^3/s
60 Percent Duration	0.14	ft^3/s
50 Percent Duration	0.205	ft^3/s
40 Percent Duration	0.374	ft^3/s
30 Percent Duration	0.98	ft^3/s
20 Percent Duration	2.12	ft^3/s
10 Percent Duration	4	ft^3/s

Flow-Duration Statistics Citations

Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159/)

Annual Flow Statistics

Annual Flow Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.55	square miles	2	2405
RECESS	Recession Index	58	days per log cycle	32	350
CLIMFAC2YR	Tennessee Climate Factor 2 Year	2.415	dimensionless	2.307	2.455
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

Annual Flow Statistics Disclaimers [Low Flow West Region 2009 5159]

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

Annual Flow Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
Mean Annual Flow	1.95	ft^3/s

Annual Flow Statistics Citations

Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159/)

Seasonal Flow Statistics

Seasonal Flow Statistics Parameters [Low Flow West Region 2009 5159]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.55	square miles	2	2405

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
RECESS	Recession Index	58	days per log cycle	32	350
PERMGTE2IN	Percent permeability gte 2 in per hr	37.002	percent	2	98

Seasonal Flow Statistics Disclaimers [Low Flow West Region 2009 5159]

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

Seasonal Flow Statistics Flow Report [Low Flow West Region 2009 5159]

Statistic	Value	Unit
Summer Mean Flow	0.386	ft^3/s

Seasonal Flow Statistics Citations

Law, G.S., Tasker, G.D., and Ladd, D.E.,2009, Streamflow-characteristic estimation methods for unregulated streams of Tennessee: U.S. Geological Survey Scientific Investigations Report 2009–5159, 212 p., 1 pl. (http://pubs.usgs.gov/sir/2009/5159/)

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.: 24S194-S1-004 ROUTE: S.R. 194
COUNTY: FAYETTE CITY: OAKLAND
PROJECT PIN NUMBER: 134833.00
PROJECT DESCRIPTION: BRIDGE OVER BLACK ANKLE CREEK @ L.M. 16.42

DIVISION REQUESTING:

		PAVEMENT DESIGN	☐
MAINTENANCE	☐	STRUCTURES	☐
S.T.I.D.	☒	SURVEY & ROADWAY DESIGN	☐
PROG. DEVELOPMENT & ADM.	☐	TRAFFIC SIGNAL DESIGN	☐
PUBLIC TRANS. & AERO.	☐	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
9,200	2029	14,720	1,619	11	2049	65-35	1	2		

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 2/20/2024
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 2/20/2024
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)

Hydraulics Recommendation	Hydraulics Recommendation Date
50 ft single span with 24" deep box beams. Has severe existing issues with downstream scour and bank stability. New project may rerquire scour repair and bank stabilization downstream, and channel reconstruction through bridge. ETSA and proposed ROW should inclue 50 ft upstream of bridge and 200 ft downstream. Survey should include ground and first floor elevations for houses close to creek in NW quadrant.	5/19/2024

TDOT Department of Transportation

Environmental Division

0EN1 Environmental Desktop Review Form

Part 1 – Project Information

PIN	134833.00
Project Number (if available)	
County	Fayette
Route	SR194
Termini	Bridge over Black Ankle Creek (TMA)
Type of Document	
Date ENV DIV Comments are Due	July 19, 2024 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 Fayette 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: There are no previously recorded sites or survey areas within one mile of the ETSA. A survey of the ETSA will be required. Given the location and previous road disturbance there is a moderate likelihood of intact archaeological deposits in the ETSA.

Historic Preservation (Cultural Resources): There are no previously identified historic resources in the project area.

Ecology

Water resource features are likely to occur within the project area.

HazMat

No known hazardous materials sites. The asbestos bridge survey has been completed and the following commitment submitted.

An Asbestos Containing Material (ACM) survey was completed on Bridge No. 24SR1940005 SR-194 over Black Ankle Creek LM 16.42 (24-SR194-16.42). 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

[Add comments Here]

Comment Resolution: 134833.00, Fayette, SR 194, Bridge over Black Ankle Creek (TMA)						
Comment Stage	**Division**	**Commenter**	**Date**	**Comment**	**Comment Addressed?**	**Additional Notes**
Draft Report Review (0SD2)	Environmental	Alex Nicely	7/19/2024	**Mitigation:** Stream impacts are less than 200 linear feet. Mitigation will not be required unless the Environmental Boundaries Report identifies any wetlands in the ETSA	Yes	Noted in report
Draft Report Review (0SD2)	Pre-Construction	Stepan Parshikov	7/19/2024	According to STD-1-1SS, the base of single sloped parapets is 14.5" wide. On page 14 of the report, the parapets measure 7.5". Under the proposed configuration, the shoulders would be less than 4' wide. Revise bridge out-to-out width to 32'5".	No	According to STD-1-1SS, roadway width is measured to the top of the single slope concrete parapet.
Draft Report Review (0SD2)	Pre-Construction	Stepan Parshikov	7/19/2024	According to RD11-TS-2, with the projected ADT, the roadway would be two 12' lanes with 8' shoulders. Proposed configuration will require a design exception.	Yes	HQ Design has directed STID to not exceed 11' and 4' shoulders for the typical section widths. Design exceptions are being noted for lane and shoulder widths within the report. 6' shoulders were applied on this project as the existing shoulders along the bridge are 6'.
Draft Report Review (0SD2)	Pre-Construction	Stepan Parshikov	7/19/2024	E-Trims and concept report both state the existing bridge has 3' shoulders. According to satellite imagery and existing out-to-out width, the shoulders are closer to 6' wide. Proposed configuration would reduce the existing shoulder width.	Yes	Verified on Google Earth existing shoulder widths of 6' along bridge. Updated report to reflect propoesd bridge having 6' shoulders.
Draft Report Review (0SD2)	Pre-Construction	Stepan Parshikov	7/19/2024	There is severe bank erosion downstream, which may require repairs. Looks like proposed ROW accounts for these repairs, however, a construction easement may be needed to avoid operating equipment within the stream.	Yes	Noted in report
Draft Report Review (0SD2)	Pre-Construction	Stepan Parshikov	7/19/2024	Low-hanging overhead utilities running along the bridge will likely cause conflict due to movement of construction equipment within the project limits.	Yes	Utilities have been noted in report
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	For realignment option, ensure horizontal curves meet superelevation requirements. No superelevation transition on proposed bridge.	Yes	Verified and no transition will occur on bridge as curve radii are 1050' around the bridge and require no transition for 45 mph urban design speed based on RD11-LR-1.
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	SR-194 is classified as a major collector, therefore RD11-TS-2 is applicable.	Yes	Nothing to note, RD11-TS-2 is specified in report
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	Location is prone to more suburban development due to its proximity to both Blue Oval City and the Memphis metropolitan area.	Yes	Noted in concept report
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	E-TRIMS has a speed limit of 50 mph, but concept report has a 40 mph speed limit. Fairly certain that the speed limit is actually 40 mph.	Yes	Verified on Google Earth and Speed Limit sign from May 2023 shows 40 mph speed limit.

Comment Stage	Division	Commenter	Date	Comment	Comment Addressed?	Additional Notes
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	Moving alignment to the northwest would be unreasonable. Would result in moving overhead utilities and purchasing ROW from newly built subdivision. If alignment is moved, it must be moved southeast.	Yes	Alignment was moved to the southeast.
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	No utilities appear to be attached to the existing bridge.	Yes	Utilites around the bridge have been noted in concept report
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	Seems to be resurfaced recently, but E-TRIMS has no record of it.	No	Nothing to note
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	Severe downstream scouring and poor bank stability. May require scour repair, bank stabilization, and/or channel reconstruction before construction.	Yes	Noted in report
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	If realignment option is chosen , one driveway may be impacted by construction (around L.M. 16.305). It is very close, but probably just outside of the construciton area.	No	Nothing to note
Draft Report Review (0SD2)	Pre-Construction	Sam Ferguson	7/19/2024	Slopes on the right side of the road, slightly past L.M. 16.420 appear steep. RD11-TS-2 requires slopes of 6:1 on routes with ADT over 600.	Yes	Cost estimate accounts for the slopes
Draft Report Review (0SD2)						
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